November 2020

Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Project Water Control Manuals

Final Feasibility Report and Integrated Supplemental Environmental Impact Statement

Appendix F. Public Involvement (Attachments 4–6)

US Army Corps of Engineers®
Mobile District

Prepared for:
U.S. Army Corps of Engineers
Mobile District
P.O. Box 2288
Mobile, AL 36628

Prepared by:
Tetra Tech, Inc.
10306 Eaton Place
Suite 340
Fairfax, VA 22030

Attachment 4. Correspondence and Coordination with Georgia and Alabama State Historic Preservation Officers

Page intentionally blank

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS,
THE ALABAMA STATE HISTORIC PRESERVATION OFFICER, AND THE GEORGIA STATE HISTORIC PRESERVATION OFFICER REGARDING THE ALLATOONA LAKE WATER SUPPLY STORAGE REALLOCATION STUDY AND WEISS AND LOGAN MARTIN RESERVOIRS WATER CONTROL MANUALS
(HP-190610-029)

WHEREAS, the U.S. Army Corps of Engineers, Mobile District (Corps) is conducting a water supply reallocation study of Allatoona Reservoir and updates to Weiss and Logan Martin Water Control Manuals (WCM) (collectively, the Undertaking) as authorized in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996; and

WHEREAS, the Corps, as part of the Undertaking, proposes to raise water levels during the summer from the 840' elevation to 841' and raise winter water levels from 823' to 824.5' at Allatoona Reservoir, reduce top of flood control levels in the summer from 574' to 572' and raise winter water levels from 558' to 561' in Weiss Reservoir, and reduce top of flood control levels in the summer from 477' to 473.5' and raise winter water levels from 460' to 462' at Logan Martin Reservoir; and

WHEREAS, the Undertaking comprises both the reallocation study and updates of the WCMs and the Corps will serve as the Lead Federal Agency for compliance with 54 U.S.C. § 306108 (NHPA Section 106) for both the reallocation and WCM updates and their implementation; and

WHEREAS, the Corps, in consultation with the Alabama State Historic Preservation Officer (SHPO) and the Georgia SHPO (SHPOs), has determined that the reallocation study and WCM updates constitute an Undertaking, as defined in 36 C.F.R. § 800.16(y), and therefore is subject to Section 106 of the National Historic Preservation Act of 1966, 54 U.S.C. § 306108 (NHPA); and

WHEREAS, the Corps has determined that the Undertaking has the potential to affect properties that are listed or eligible for listing in the National Register of Historic Places (NRHP) (herein referred to as Historic Properties) and has consulted with the Alabama and Georgia SHPOs pursuant to the NHPA; and

WHEREAS, the Corps, in consultation with the Alabama and Georgia SHPOs and Federally Recognized Tribes, has determined that the Undertaking's Area of Potential Effect (APE) includes discontinuous areas within the Allatoona, Weiss, and Logan Martin Reservoirs and along stretches of the Coosa River below Weiss and Logan Martin Reservoirs, an overview of which is shown on maps provided in Appendix A, which was determined by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations conducted under water supply storage reallocation in Allatoona and proposed revisions to flood operations in areas immediately downstream of Weiss and Logan Martin dams that could be subjected to higher flow rates from releases under the proposed WCM updates; and

WHEREAS, the Corps has reviewed previous Historic Property reports and records and will review more recent reports and surveys provided by Alabama Power Company (APC) related to the subject Reservoirs and identified potential Historic Properties in the APE and in the immediate downstream portions of the APE below Logan Martin and Weiss dams; and

WHEREAS, the Corps, with the concurrence of the Alabama and the Georgia SHPOs, has decided to comply with Section 106 of the NHPA for the Undertaking through the execution and implementation of a Programmatic Agreement (Agreement) following 36 C.F.R. § 800.14(b), due to the currently unknown impacts on Historic Properties; and

WHEREAS, APC will implement the WCM updates for Weiss and Logan Martin Reservoirs and the Corps will implement the Allatoona Reservoir Reallocation study, and APC has been invited to be a Concurring Party to this Agreement with the understanding that it will not be obligated to perform any responsibilities in addition to those currently required by its Programmatic Agreement for the Coosa River Hydroelectric Project and its associated Historic Properties Management Plan (HPMP) for the Coosa River Hydroelectric Project (FERC No. 2146), dated September 2006; and

WHEREAS, in accordance with 36 C.F.R. § 800.2(c)(2)(ii)(A), 800.3(f)(2), and 800.14(b)(2)(i), the Corps has contacted federally recognized Native American Tribes, via letter(s), phone call(s), and meetings, to invite them to consult on the reallocation study, WCM updates, and this Agreement, including the Absentee-Shawnee Tribe of Oklahoma, the Alabama-Coushatta Tribes of Texas, the Alabama-Quassarte Tribal Town, the Caddo Nation of Oklahoma, the Catawba Indian Nation, the Cherokee Nation, the Chickasaw Nation, the Chitimacha Tribe of Louisiana, the Choctaw Nation of Oklahoma, The Coushatta Tribe of Louisiana, Eastern Band of the Cherokee Nation, the Eastern Shawnee Tribe of Oklahoma, the Jena Band of Choctaw Indians of Louisiana, the Kialegee Tribal Town of Oklahoma, the Miccosukee Tribe of Indians of Florida, the Mississippi Band of Choctaw Indians, Muscogee (Creek) Nation, the Poarch Band of Creek Indians, the Quapaw Tribe of Indians of Oklahoma, Shawnee Tribe of Oklahoma, the Seminole Nation of Oklahoma, the Seminole Tribe of Florida, the Thlopthlocco Tribal Town, Tunica-Biloxi Indian Tribe of Louisiana, and the United Keetoowah Band of Cherokee Indians in Oklahoma (collectively, the Federally Recognized Tribes) and the Catawba Tribe responded in a letter dated December 16, 2019 with no immediate concerns regarding the Undertaking and the Choctaw Nation responded in an email dated February 18, 2020 indicating that the Undertaking lies outside their area of historic interest. On July 10, 2020 the Absentee-Shawnee Tribe of Oklahoma, the Alabama-Coushatta Tribes of Texas, the Alabama-Quassarte Tribal Town, the Caddo Nation of Oklahoma, the Catawba Indian Nation, the Cherokee Nation, the Chickasaw Nation, the Chitimacha Tribe of Louisiana, the Choctaw Nation of Oklahoma, The Coushatta Tribe of Louisiana, Eastern Band of the Cherokee Nation, the Eastern Shawnee Tribe of Oklahoma, the Jena Band of Choctaw Indians of Louisiana, the Kialegee Tribal Town of Oklahoma, the Mississippi Band of Choctaw Indians, the Muscogee (Creek) Nation, the Poarch Band of Creek Indians, the Shawnee Tribe of Oklahoma, the Thlopthlocco Tribal Town, and the Tunica-Biloxi Indian Tribe of Louisiana were provided a revised draft of this Agreement for review and invited to be Concurring Parties and in an email dated August 10, 2020, the Choctaw Nation of Oklahoma requested GIS shapefiles of the Undertaking's APE; and

WHEREAS, in accordance with 36 C.F.R. § 800.14(b)(3), on February 26, 2020, the Corps submitted an Advisory Council on Historic Preservation (ACHP) e106 form inviting the ACHP per 36 C.F.R. § 800.6(a)(1)(C) to participate in consultation to resolve potential adverse effects of the Undertaking and in the development of this Agreement and in a letter dated June 23, 2020, the ACHP declined to participate; and

WHEREAS, in accordance with 36 C.F.R. § 800.6(a)(4) and 36 C.F.R. § 800.14(b)(2)(ii), the Corps held a series of public meetings in Acworth, Georgia on July 30, 2019, Rome, Georgia on July 31, 2019, Gadsden, Alabama on August 1, 2019, Childersburg, Alabama on August 2, 2019, and Montgomery, Alabama on August 3, 2019, to notify the public of the Undertaking and provide an opportunity for members of the public to comment on the Undertaking and this Agreement and, other than APC's comments, no other comments were received regarding cultural resources or requests to be involved in the Agreement; and

NOW, THEREFORE, the Corps, the Alabama SHPO, and the Georgia SHPO (herein referred to as Signatories) agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on Historic Properties.

STIPULATIONS

The Corps shall ensure that the following measures are carried out:

I. QUALIFICATIONS

A. Professional Qualifications: All technical work required for historic preservation activities implemented pursuant to this Agreement shall be carried out by or under the direct supervision of a person or persons meeting, at a minimum, the *Secretary of Interior's Professional Qualifications Standards* for archeology or history, as appropriate (48 FR 44739). "Technical work" means all efforts to inventory, evaluate NRHP-eligibility, make assessments of effect, and perform subsequent treatment such as data recovery excavation or recordation of potential Historic Properties that is required under this Agreement. This stipulation shall not be construed to limit peer review, guidance, or editing of documents by SHPOs and associated consultants to the Undertaking.

B. Historic Preservation Standards: Historic preservation activities carried out pursuant to this Agreement shall meet the *Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-

44740), as well as standards and guidelines for historic preservation activities established or approved by the Alabama and Georgia SHPOs. The Corps shall ensure that all reports prepared pursuant to this Agreement will be provided to the SHPOs as well as the Federally Recognized Tribes that have requested to be included, APC, and any other party identified during the course of the Undertaking with an interest that may be affected and who has requested to be included (herein referred to as Concurring Parties or Party) and are distributed in accordance with **Stipulation VIII (Confidentiality)**.

II. TIME FRAMES AND REVIEW PROCEDURES

A. Document and Deliverable Review: For all documents and deliverables produced in compliance with this Agreement, the Corps will have thirty (30) calendar days to review. After completing its review, the Corps shall provide a hard copy draft document and comments via mail and/or electronic communications to the appropriate SHPO and Concurring Parties for review as appropriate per **Stipulation VIII (Confidentiality)**. Any written comments provided by the appropriate SHPO or Concurring Party or Parties within thirty (30) calendar days from the date of receipt shall be considered in the revision of the document or deliverable. The Corps shall document and report the written comments received for the document or deliverable and how comments were addressed. The Corps shall provide a revised final document or deliverable to the appropriate SHPO and the Concurring Parties for concurrence. The appropriate SHPO and Concurring Parties shall have thirty (30) calendar days to respond. Failure of the appropriate SHPO or Concurring Parties to respond within thirty (30) calendar days of any complete submittal shall not preclude the Corps from moving to the next step in this Agreement. A copy of the final document shall be provided to the Alabama and Georgia SHPOs, the Concurring Parties, and to any other party with an interest that may be affected who requests it, as appropriate per **Stipulation VIII (Confidentiality)**.

B. Disagreement: Should the appropriate SHPO or any Concurring Party or Parties object to the determinations of NRHP-eligibility and/or assessments of effect within the final document or deliverable submitted for concurrence, the Signatories to the Agreement shall consult for a period not to exceed fifteen (15) calendar days following the receipt of a written objection in an effort to come to agreement on the issues to which the party or parties have objected. Should the Signatories be unable to agree on the issues to which the parties have objected, the Signatories shall proceed in accordance with **Stipulation X (Dispute Resolution)**, below. The time frame to consult to resolve a disagreement or objection may be extended for a reasonable period of time by mutual consent of the Signatories.

III. AREA OF POTENTIAL EFFECT

The APE for activities related to the Undertaking has been determined by the Corps as Lead Federal Agency, in consultation with the Alabama and Georgia SHPOs and Concurring Parties. If any Signatory or Concurring Party requests that the APE be revised, the Corps shall consult on that revision with the appropriate SHPO and Concurring Parties in accordance with **Stipulation II (Time Frames and Review Procedures),** and the Corps shall determine the potential for Undertaking activities in a revised APE to affect potential Historic Properties.

IV. STUDY OF POTENTIAL IMPACTS FROM THE UNDERTAKING

The Corps has determined that the proposed Undertaking has the potential to affect Historic Properties; however, it is currently unclear if these effects will be distinguishable from the impacts related to current operations of the subject Reservoirs and dams. For the purposes of this study, Historic Properties are defined according to 36 C.F.R. § 800.16(l)(1) as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places.” The effects of the proposed Undertaking are unknown because it encompasses operational changes to the way water is released or stored in reservoirs and is expected to result in some of the same impacts to cultural resources as current operations. To adequately consider the potential effects of the proposed Undertaking and guide the development of this Agreement, a preliminary records search and literature review was conducted by the Corps’ Mobile District utilizing reports and management documents such as APC’s Historic Properties Management Plan (HPMP) for the Coosa River Hydroelectric Project (FERC No. 2146), dated September 2006, and the Corps’ 2014 Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake. The preliminary records search also relied upon cultural resources management reports from the Corps’ Mobile District cultural resources library and site files, and cultural resource management documents from Alabama and Georgia state site files. The primary purpose of this records search was to determine the presence of known Historic

Properties within the APE that could be adversely affected by the Undertaking. This records search found that numerous previously recorded cultural resource sites are within the Undertaking's APE, determined which of these sites represent known or potential Historic Properties, and collected site data on how current reservoir operations are affecting Historic Properties. The subsequent sections will: (1) summarize the results of the records search and additional background research to be conducted; (2) discuss how the subsample of sites for the proposed study will be identified; (3) discuss how the subsample will be used to establish baseline conditions to inform the study and identify adverse impacts; and (4) discuss how any adverse effects will be resolved.

A. **Preliminary Records Search Results:** Based on the preliminary records search conducted by the Corps' Mobile District, 810 properties are within the APE as described in **Stipulation III (Area of Potential Effect)** and shown on maps in Appendix A. The 810 sites comprise 349 within the Allatoona Reservoir in Georgia and 22 sites below Mitchell Dam, 26 below Lay Dam, 27 below Logan Martin Dam, 119 below Weiss Dam, 86 within the Logan Martin Dam, and 181 within the Weiss Reservoir in Alabama. Summary information for these sites are presented in Tables 1–9 in Appendix B. These properties represent a broad array of property types dating to different time periods including pre-Contact Native American artifact scatters, villages, and mound sites, and historic artifact scatters, features, and structures. According to the Alabama and Georgia site files, cultural resources management reports, maps, and other management documents consulted during the records search, 40 of the 810 properties were determined eligible for listing in the NRHP, 454 were determined ineligible for listing in the NRHP, 6 properties had no information regarding NRHP-eligibility, and the status of 310 of these properties is undetermined. The undetermined category includes a variety of reported properties that have not been assessed for NRHP-eligibility, that lack enough information to be assessed, or that have reportedly been destroyed. This category also includes properties that have been subjected to cultural resource management investigations and recommended as potentially eligible, but currently lack an official determination of NRHP-eligibility. As such, some of the 310 properties with indeterminate status could represent Historic Properties. During the records search, data on the condition of each property was collected to aid in the identification of the subsample of properties for the study. These data comprise the recorded elevation of each property, property boundaries relative to APE boundaries, recorded physical attributes of each property, information regarding land use associated with each property, and any noted impacts that could have resulted from current operations such as erosion, deflation, vandalism, or looting.

B. Additional Background Research: Prior to selecting properties to study in accordance with **Stipulation IV[C] (Property Selection for Condition Assessment Study)** below, the Corps will conduct additional background research to ensure that the subset of Historic Properties or potential Historic Properties is properly represented in the selection process. This research will include, but not be limited to, tax assessors, historic aerials, and topographic maps. The Corps will produce a memorandum with supporting documentation, such as maps, aerials, and photographs summarizing the results to submit to the appropriate SHPO and Concurring Parties for review and comment, including any additional selection criteria that may be needed to properly study the impacts of the Undertaking on Historic Properties or potential Historic Properties.

C. Property Selection for Condition Assessment Study: Prior to implementation of the Undertaking and in consultation with the Alabama and Georgia SHPOs and Concurring Parties, the Corps will identify a representative subsample of Historic Properties or potential Historic Properties to study. The primary goal of the study is to differentiate the potential effects of the proposed Undertaking from the ongoing impacts of current dam and reservoir operations. The subsample of study properties will be selected from the Historic Properties identified in the preliminary records search noted in **Stipulation IV[A]**, any properties identified during additional background research according to **Stipulation IV[B]**, and properties identified by other means, such as by a knowledgeable informant. The Corps will ensure all Historic Property types, including but not limited to pre-Contact archaeological sites and historic structures, are considered for the study based on the following criteria:

- Historic Properties or potential Historic Properties that are situated within the gross pool of the reservoirs and along the Coosa River portions of the APE with boundaries that overlap one or more of the Undertaking's APE boundaries;
- Properties that have been subjected to cultural resource investigations such as inventory surveys, historic structure inventory surveys and evaluations, testing, or other investigations with well-defined boundaries and accurate locational data or by other means including, but not limited

to, tax data, historic aerial photographs, topographic maps, and/or based on consultations with knowledgeable parties and individuals;

- Properties that retain a significant level of integrity with intact deposits, structures, features, materials, or design; and
- Properties where effects related to current reservoir or dam operations have been observed or are more likely to occur including, but not limited to, mechanical erosion caused by waves or degradation of archaeological deposits and materials from wetting and drying, looting or vandalism where exposure from reservoir inundation facilitates access, channel widening from increased flow below dams, and significant changes in physical conditions.

The number of properties within the subsample will be determined in part by the number of available properties within the APE that meet the criteria above and through coordination with the Alabama and Georgia SHPOs and Concurring Parties.

D. Property Condition Assessment: After the subsample of study properties is identified and prior to implementation of the Undertaking the Corps will complete a property condition assessment (PCA) for each property within the subsample. This assessment will involve a more detailed review of site files, maps, photographs, cultural resource management reports, and other pertinent forms of data for each sample property. If, in the event that onsite research is necessary for the PCA, this work will be conducted by the Corps and will focus upon information related to the effects of ongoing operations of the subject dams and reservoirs. The rational of the PCA, the scope of the proposed research for the PCA, and a description of the contents of the PCA reports are listed below:

1. Rationale: Presently, the extent to which the proposed reallocation for Allatoona Reservoir and WCM updates for Logan Martin and Weiss Reservoirs would impact Historic Properties and whether these impacts could be differentiated from impacts from the normal operations of the dams is unclear. Based on this factor and the significantly large APE, assessment efforts for the Undertaking will focus on data from a representative sample of known Historic Properties within the APE as determined by work performed pursuant to **Stipulation IV[A] and [B]** to appropriately scale cultural resources management efforts to the proposed Undertaking.

2. Property Condition Assessment: The PCA will be conducted by the Corps and will incorporate information collected during the preliminary records search regarding Historic Properties or potential Historic Properties within the APE with additional research on the existing conditions of the study properties once they have been identified. This research will include information related to integrity and the potential effects to the property by the implementation of the Undertaking. The purpose of the PCA is to obtain baseline data specifically related to the effects of reservoir operation on the study properties, in order to assess their changing conditions following implementation of the Undertaking. More specifically, the assessment will gather information on boundaries, current environmental conditions, previous work related to each property, and the physical condition of each property. Particular attention will be paid to the specific conditions where the Undertaking's boundaries cross through or run just below study property boundaries. Additional baseline conditions that could be collected include, but are not limited to permanent site datums, mapping shorelines relative to site boundaries using a GPS with submeter accuracy, and historic aerial photography and satellite and Lidar imagery. These data could highlight impacts resulting from the proposed Undertaking or enable future management actions, such as periodic inspections or surveys conducted by the Corps or APC that could identify impacts related to the Undertaking.

3. Reporting PCA Results: Within 60 days of the completion of the PCA study, the Corps will prepare two (2) draft PCA reports that will summarize the results of the PCA study. One report will be for the APC-administered portions of the APE, which comprises Logan Martin and Weiss Reservoirs and portions of the Coosa River immediately downstream of Logan Martin and Weiss dams, and one report will be for the Corps-administered portions of the APE, which includes Allatoona Reservoir. Updated records for Historic Properties considered for the PCA study will also be included.

   Both draft reports will contain descriptions of the environmental and physical setting of each property, maps depicting each property's location and boundaries, descriptions of reservoir-related impacts observed under current operations, and descriptions of previous work conducted at the property. Specific methods guiding the PCA work, including determinations of NRHP-eligibility, if applicable, assessment of the effect of the Undertaking on Historic Properties, and recommendations for future management actions, if warranted, will also be included. Each report will include an updated site file for each property. For the draft report on properties within the APC-administered portion of the APE, the Corps will coordinate with APC to ensure the report is consistent with the stipulations in the Programmatic Agreement for the continued operation of the Coosa River Hydroelectric Project in Alabama and Georgia and the HPMP for the Coosa River Hydroelectric Project (FERC No. 2146), dated September 2006, and APC's current responsibilities with respect thereto. For the draft report covering the Corps-administered portion of the APE, the Corps will ensure that the report conforms to the general recommendations and site-specific management considerations provided in the 2014 ICRMP for Allatoona Lake, Georgia.

Time frames for all documents and deliverables produced in compliance with this Agreement will be distributed in accordance with **Stipulation II (Time Frames and Review Procedures).**

E. Determination and Resolution of Adverse Effects: The adverse effects of the Undertaking will be identified through completing the PCA study. This assessment will be accomplished by the study of known physical conditions of Historic Properties within the APE and comparing the potential for the Undertaking to affect these sites throughout the APE based on the Undertaking's proposed reservoir water level changes and changes in the volume of water released from dams. The PCA study will aid in resolving the effects of the Undertaking by providing baseline data to inform ongoing Historic Properties Management Plans conducted by the Corps for the Allatoona Reservoir and by APC for Logan Martin and Weiss Reservoirs as described in **Stipulation IV[E][3] (Mitigation Measures)**. Record of these management actions will be achieved by appending results of the PCA study(ies) to the Corps' 2014 ICRMP for Allatoona Lake, Georgia and by providing information to APC to use in implementing the 2006 HPMP for the Coosa River Hydroelectric Project, specifically:

1. Allatoona Lake ICRMP Update: The results of the PCA study of properties within the Allatoona Reservoir portion of the APE will be used to update the Corps' 2014 ICRMP. This update will be achieved by appending to Appendix C of the ICRMP baseline information on PCA study properties, which may be useful in identifying the specific effects of

the Undertaking, and recommendations on the management or treatment of study properties. Appendix C includes a set of NRHP-eligible Historic Properties at Allatoona Reservoir that are currently periodically inspected by Corps' Mobile District archaeologists. Some properties selected for the PCA study may already be listed in Appendix C of the ICRMP and the PCA study will provide updated descriptions and baseline data for these properties. If a property that is not currently listed in Appendix C of the ICRMP is selected for the study, a description, maps, and data from the PCA study for the property will be appended to Appendix C. This update will ensure that all PCA study properties will be subjected to periodic inspections in the future. By comparing baseline information provided by the PCA study with data collected during inspections conducted after implementation of the Undertaking, the impacts of the minor operational changes of the proposed Undertaking can be better understood and effective mitigation strategies can be developed and implemented. Such mitigation strategies will be developed in accordance with the ICRMP and **Stipulation IV[E][3] (Mitigation Measures)** below. Once the Corps has amended Appendix C of the 2014 ICRMP based on the results of the PCA study, the Corps will submit the amended ICRMP to the Georgia SHPO and Concurring Parties for review pursuant to **Stipulation II (Time Frame and Review Procedures).**

2. Coosa River Hydroelectric Project HPMP implementation: The Corps will coordinate with APC during preparation of the draft PCA report for the sample properties within the APC-administered portion of the APE to ensure the report conforms with APC's responsibilities for the implementation of the HPMP for Coosa River Hydroelectric Project (FERC No. 2146), dated September 2006, and in accordance with the stipulations in the Programmatic Agreement for the continued operation of the Coosa River Hydroelectric Project in Alabama and Georgia. APC will assume no responsibilities under this Agreement beyond those currently required under the HPMP for the Coosa River Hydroelectric Project (FERC No. 2146) or the Programmatic Agreement for the continued operation of the Coosa River Hydroelectric Project in Alabama and Georgia. This PCA report will update existing records and provide new information, associated historical location descriptions, updated maps as needed, and specific management considerations for Historic Properties in the APC-administered portion of the APE.

3. Mitigation Measures: In the event adverse effects of the Undertaking are identified at any time during the course of the study or at any time following the implementation of the Allatoona reallocation and Logan Martin and Weiss WCM updates, mitigation measures could be recommended by the Corps, SHPOs, or any Concurring Party to aid in resolving the adverse effects. Mitigation measures could include, but are not limited to, Phase I inventory surveys, Phase II testing and data recovery, preparation of interpretive and/or educational materials, artifact curation, updating monitoring plans, archival documentation, or preparation of an article for publication in a peer-review journal. All proposed mitigation recommendations will be developed in coordination with the appropriate SHPO and all Concurring Parties. If archaeological testing or data recovery is recommended, the Corps shall prepare a testing or data recovery plan and submit it to the appropriate SHPO and Concurring Parties for review in accordance with **Stipulation II (Time Frames and Review Procedures).**

V. TRIBAL CONSULTATION

Through consultation with the Federally Recognized Tribes, the Corps will make a reasonable and good-faith effort to identify Historic Properties of traditional religious and cultural importance. As the Lead Federal Agency, the Corps shall ensure that consultation regarding property condition assessment and determinations of eligibility and effects with Federally Recognized Tribes continues throughout the implementation of the Agreement. The Corps shall be responsible for transmitting all relevant documents and deliverables to Federally Recognized Tribes who have expressed interest in participating in implementation of this Agreement as part of their tribal consultation responsibility.

Federally Recognized Tribes may choose not to sign this Agreement as a Concurring Party. However, the Corps will make a good-faith effort to contact Federally Recognized Tribes and individuals from a tribe, not acting as Concurring Parties to the Agreement, with potential interest in consulting on property condition assessment efforts and on the proposed treatment of Historic Properties or potential Historic Properties. Efforts to identify these individuals or groups may include using the Corps' list of Consulting Tribes, online databases, and using personal and professional knowledge. The Corps will then contact each identified organization and/or individual by mail, inviting them to consult about inventory and property condition assessment efforts and proposed treatments of Historic Properties or potential Historic Properties. Consultations may be carried out through either letters of notification, public meetings, environmental assessments/environmental impact statements, site visits, and/or other methods requested by interested Federally Recognized Tribes. Failure of any contacted group to comment within thirty (30) calendar days shall not preclude the Corps from proceeding with the Undertaking.

The Corps shall make a reasonable and good-faith effort to ensure that Federally Recognized Tribes, acting as either Concurring Parties or those expressing interest in the Undertaking and requesting to remain informed, will be invited to participate in the implementation of the terms of this Agreement, including, but not limited to, the development of the PCA reports. Review periods shall be consistent with **Stipulation II (Time Frames and Review Procedures)** and the Corps shall ensure that all interested Native American reviewers receive copies of all reports.

VI. TREATMENT OF HUMAN REMAINS

A. Federal Lands: In the event that Native American human remains, as well as Native American funerary objects, sacred objects, or objects of cultural patrimony are encountered within portions of the APE administered by the Corps during the Undertaking, those remains and objects are subject to the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001 *et seq.*) and treatment under NAGPRA's implementing regulations at 43 C.F.R. Part 10. When NAGPRA items are discovered inadvertently, an appropriate Corps official must be notified immediately upon the discovery. The Corps shall follow the requirements of 43 C.F.R. §10.3 for consultation, notification, and the development of excavation, treatment, and disposition plans as needed and the requirements of 43 C.F.R. §10.6 for NAGPRA item disposition. The Corps will also notify the appropriate SHPO and Federally Recognized Tribes within 24 hours if Native American human remains, Native American funerary objects, sacred objects, or objects of cultural patrimony are encountered. Confidentiality regarding the nature and locations of Native American remains, funerary objects, sacred objects, or objects of cultural patrimony under this Agreement shall be maintained pursuant to **Stipulation VIII (Confidentiality)**. Also, if any information is provided to the Corps by Federally Recognized Tribes or others who wish to control the dissemination of that information, the Corps will make a good faith effort to do so, to the extent permissible by law according to **Stipulation VIII**

(Confidentiality) of this Agreement.

B. Non-Federal Lands: Native American human remains and grave goods encountered during the Undertaking within portions of the APE administered by APC will be treated in accordance with the requirements established by Alabama or Georgia state laws.

C. Non-Native Remains or Unmarked Burials: In the event non-Native American human remains or unmarked human burials are encountered anywhere within the APE, those remains will also be subject to the requirements in established Alabama or Georgia state laws.

VII. PUBLIC CONSULTATION AND PUBLIC NOTICE

The Corps shall carry out any additional public consultation on the Undertaking through letters of notification, public meetings, environmental assessment/environmental impact statements, and/or site visits. The Corps shall ensure that any comments received from members of the public are taken under consideration and incorporated where appropriate. Review periods shall be consistent with **Stipulation II (Time Frames and Review Procedures)**. In seeking input from the interested public, locations of Historic Properties will be handled in accordance with **Stipulation VIII (Confidentiality)**.

VIII. CONFIDENTIALITY

Confidentiality regarding the specific nature and location of the archaeological sites and any other cultural resources discussed in this Agreement shall be maintained to the extent allowable by law (Statute 16 U.S.C. § 470hh of the Archaeological Resources Protection Act of 1979 that qualifies under Exemption 3 of the Freedom of Information Act). Dissemination of such information shall be limited to appropriate personnel within the Corps, SHPOs, APC, contractors, interested Federally Recognized Tribes, and those parties involved in planning, reviewing and implementing this Agreement and in accordance with Section 304 of the NHPA (54 U.S.C. § 307103). When information is provided to the Corps by Native American Tribes or others who wish to control the dissemination of that information more than described above, the Corps will make a good faith effort to do so.

IX. ANNUAL UPDATES

At the end of every calendar year following the execution of this Agreement, the Corps shall provide the Signatories and Concurring Parties an annual report regarding work carried out pursuant to its terms. Such updates can be provided in a brief letter or memorandum for record and will describe progress made implementing the terms of the Agreement as well as any scheduling changes proposed, any problems encountered, any disputes and objections received in the course of efforts to carry out the terms of this Agreement or Undertaking, any contact information updates, and any recommendations for amendments to the Agreement. If no work was completed, a brief letter will be prepared to that effect and provided to the Signatories and Concurring Parties.

X. DISPUTE RESOLUTION

Should any Signatory or Concurring Party to this Agreement object at any time to any actions proposed or the manner in which the terms of this Agreement are implemented, they may file written objections with the Corps and the Corps shall consult with such party to resolve the objection. If the Corps determines that such objection cannot be resolved, the Corps will forward all documents relevant to the dispute, including the Corps' proposed resolution, to the Signatories and Concurring Parties and allow the parties thirty (30) days to provide comments. In addition the Corps will:

1. Forward all documentation relevant to the dispute, including the Corps' proposed resolution, to the ACHP. The ACHP shall provide the Corps with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the Corps shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, Signatories and Concurring Parties, and provide these parties with a copy of this written response. The Corps will then proceed according to its final decision.

2. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, the Corps may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the Corps shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories and

Concurring Parties to the Agreement and provide these parties and the ACHP with a copy of such written response.

3. The Corps' responsibility to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute remain unchanged.

At any time during implementation of the measures stipulated in this Agreement should an objection pertaining to the Agreement be raised in writing by a Federally Recognized Tribe or a member of the public with an interest that may be affected by the Undertaking, the Corps shall notify the Signatories and Concurring Parties and take the objection under consideration, consulting with the objecting party and any of the interested Signatories and Concurring Parties to this Agreement, for no longer than fifteen (15) calendar days. The Corps shall consider the objection, and in reaching its decision, will consider all comments provided by the other Signatories and Concurring Parties. Within fifteen (15) calendar days following closure of the comment period, the Corps will render a decision regarding the objection and respond to the objecting party. The Corps will promptly notify the other Signatories and Concurring Parties of its decision in writing, including a copy of the response to the objecting party. The Corps' decision regarding resolution of the objection will be final. Following issuance of its final decision, the Corps may authorize the action that was the subject of the dispute to proceed in accordance with the terms of that decision. The Corps' responsibility to carry out all other actions under this Agreement shall remain unchanged.

Should any Signatory or Concurring Party to this Agreement object in writing to any determination of NRHP-eligibility or effects related to the implementation of the Undertaking, the objection will be addressed pursuant to 36 C.F.R. § 800.4(c)(2).

XI. NOTICES

All notices, demands, requests, consents, approvals or communications from all Signatories and Concurring Parties to this Agreement to other parties to this Agreement shall be either personally delivered or sent by United States Mail and all parties shall be considered in receipt of the materials five (5) calendar days after deposit in the United States mail.

If Signatories and Concurring Parties agree, hard copies and/or electronic communications may be used for formal communication amongst themselves for activities in support of **Stipulation II (Time Frames and Review Procedures).**

XII. AMENDMENTS, NONCOMPLIANCE, AND TERMINATION

A. Amendment: Any Signatory or Concurring Party to this Agreement may propose that the Agreement be amended, whereupon the Corps shall consult with the Signatories to consider such amendment. This Agreement may be amended when such an amendment is agreed to in writing by all Signatories. The amendment will be effective on the date a copy signed by all of the Signatories is filed with the ACHP.

All attachments to this Agreement, and other instruments prepared pursuant to this Agreement including, but not limited to, the APE determination and related maps and the PCA reports, may be individually revised or updated through consultation consistent with **Stipulation II (Time Frames and Review Procedures)** and agreement in writing of the Signatories without requiring amendment of this Agreement, unless the Signatories through such consultation decide otherwise. In accordance with **Stipulation V (Tribal Consultation)** and **Stipulation VII (Public Consultation and Public Notice)**, all Concurring Parties will receive amendments to the APE, the PCA reports as appropriate, and copies of any amendment(s) to the Agreement.

B. Termination: Any Signatory to this Agreement, including Invited Signatories, may terminate this Agreement. If this Agreement is not amended as provided for in **Stipulation XII.A. (Amendment)**, or if any Signatory proposes termination of this Agreement for other reasons, the Signatory proposing termination shall notify the other Signatories in writing, explain the reasons for proposing termination, and consult with the other Signatories to seek alternatives to termination, within thirty (30) calendar days of the notification.

1. Should such consultation result in an agreement on an alternative to termination, the Signatories shall proceed in accordance with that agreement and amend the Agreement as required, in accordance with **Stipulation XII.A (Amendment)**.

2. Should such consultation fail, the Signatory proposing termination may terminate this Agreement by promptly notifying the other Signatories and Concurring Parties in writing.

3. In the event of termination, the Corps will comply with 36 C.F.R. § 800.3 through 36 C.F.R. § 800.7(c)(3) with regards to individual actions covered by this Agreement.

C. Duration: This Agreement shall remain in effect for a period of five (5) years after the date it takes effect and shall automatically be renewed at the end of this five-year period unless the Signatories agree otherwise and it is terminated prior to that time. The Corps shall notify the Signatories and Concurring Parties of the renewal and request comments regarding the Agreement, any revisions needed, or any concerns with renewal.

XIII. EFFECTIVE DATE

This Agreement shall take effect on the date that it has been fully executed by the Corps, the Alabama SHPO, and the Georgia SHPO.

EXECUTION of this Agreement by the Corps, the Alabama SHPO, and the Georgia SHPO and the implementation of its terms evidence that the Corps has taken into account the effects of this Undertaking on Historic Properties and afforded the ACHP an opportunity to comment.

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS,
THE ALABAMA STATE HISTORIC PRESERVATION OFFICER, AND THE GEORGIA STATE HISTORIC PRESERVATION OFFICER REGARDING THE ALLATOONA LAKE WATER SUPPLY STORAGE REALLOCATION STUDY AND WEISS AND LOGAN MARTIN RESERVOIRS WATER CONTROL MANUALS

SIGNATORIES TO THIS AGREEMENT:

U.S. ARMY CORPS OF ENGINEERS, MOBILE DISTRICT

BY:____DATE :___________
Sebastien P. Joly, Colonel, U.S. Army Corps of Engineers, District Commander

ALABAMA STATE HISTORIC PRESERVATION OFFICER

BY:____DATE:____________
Lee Anne Wofford, Deputy State Historic Preservation Officer

GEORGIA STATE HISTORIC PRESERVATION OFFICER

BY:____DATE:____________
Dr. David Crass, Division Director, Deputy State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS,

THE ALABAMA STATE HISTORIC PRESERVATION OFFICER, AND THE GEORGIA STATE HISTORIC PRESERVATION OFFICER REGARDING THE ALLATOONA LAKE WATER SUPPLY STORAGE REALLOCATION STUDY AND WEISS AND LOGAN MARTIN RESERVOIRS WATER CONTROL MANUALS

CONCURRING PARTIES:

ALABAMA POWER COMPANY

BY:____ DATE: _____________

FEDERALLY RECOGNIZED TRIBES

BY:____ DATE: _____________

APPENDIX A.

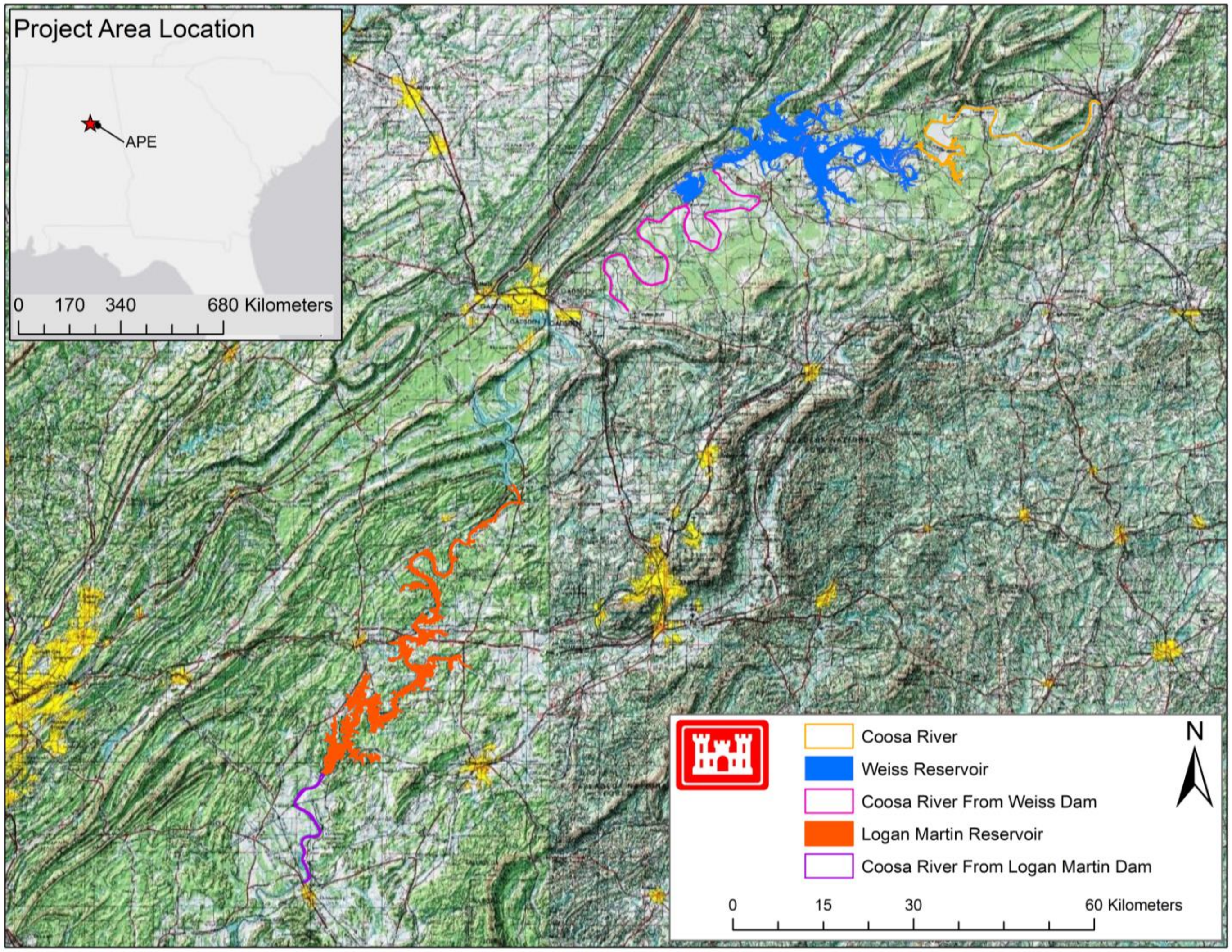


Plate 1. Map of Logan Martin and Weiss Reservoirs and Coosa River portions of the APE.

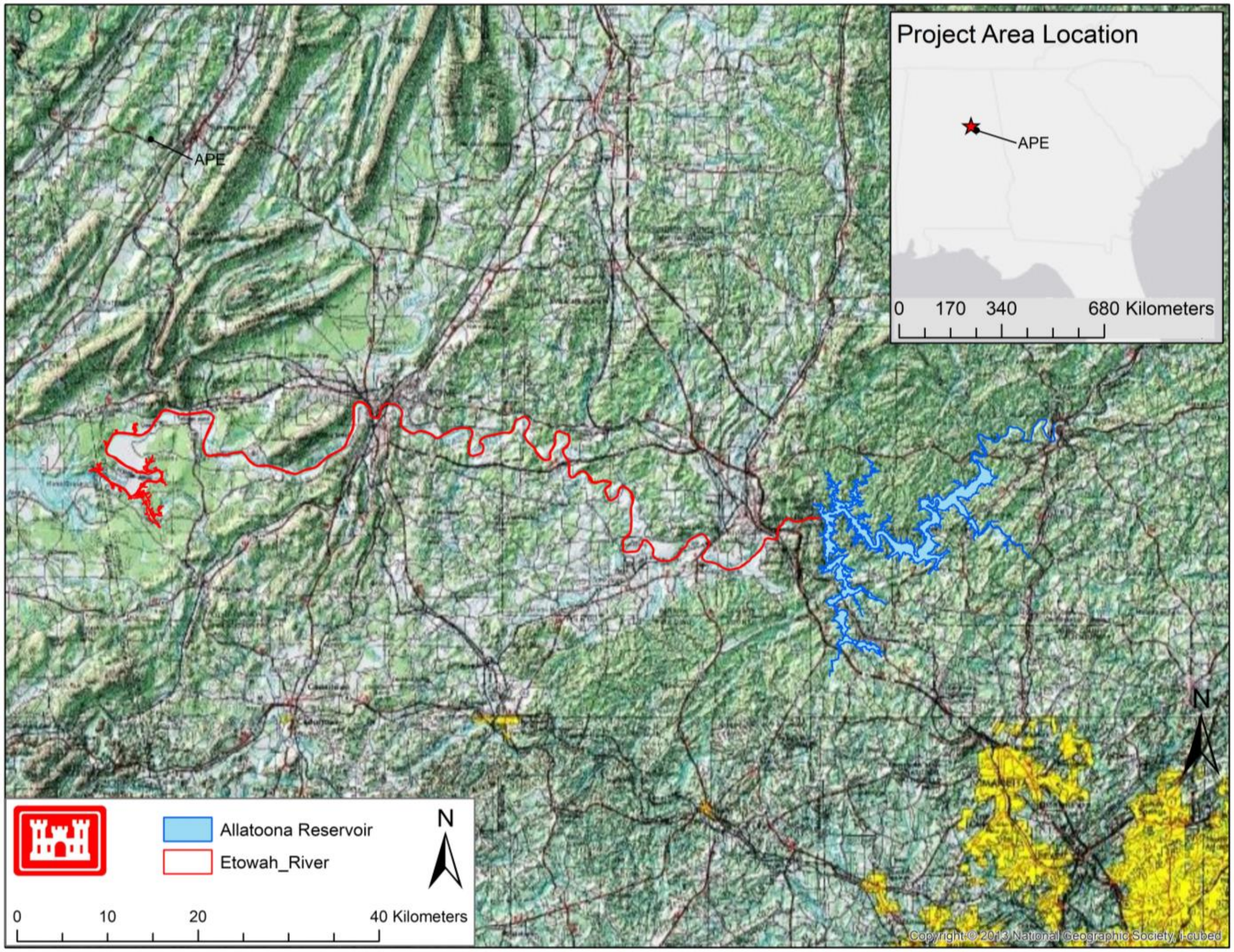


Plate 2. Map of Allatoona Reservoir and Etowah River portions of APE.

Appendix B.

Table 1. Sites in Logan Martin Reservoir, Alabama.

Site #	Elevation ASL (ft)	Topography	Condition	East	North	NRHP eligible
CA1	500	terrace	-	588057	3738387	undetermined
CA1083	460	terrace	construction, 75% destroyed	588571	3736050	no
CA261	460	flood plain	inundated, 85% destroyed	543697	3717823	undetermined
CA263	460	flood plain	cultivated	581800	3730800	undetermined
CA426	480-500	terrace	cultivated	586084	3734688	no
SC196	500	upland slope	-	586180	3735640	undetermined
SC199	500	flood plain	-	588280	3736160	undetermined
SC246	460-480	flood plain	intermittent	585838	3735144	no
SC291	460-480	terrace	intermittent	583424	3733210	undetermined
SC312	460	terrace	island	576413	3724820	yes
SC318	460-480	terrace	erosion, 90% destroyed	576962	3720661	no
SC329	460	terrace	inundated	576328	3724431	undetermined
SC350	460	upland base	inundated, 80% destroyed	571225	3716639	no
SC351	460	upland base	inundated, 90% destroyed	571109	3716575	no
SC364	460	island	severe erosion, 100% destroyed	577946	3737809	no
SC374	460	terrace	erosion, 99% destroyed	572467	3715554	no
SC453	460	-	-	-	-	-
SC46	480-500	terrace	construction	586840	3735900	no
SC47	460-480	terrace	construction	586060	3735400	no
SC49	480-500	terrace	construction	588040	3737040	no
SC50	460-480	terrace		588407	3736260	yes
SC52	460+	upland base	borrow pit	587155	3736037	no
SC58	500+	terrace	borrow pit	587940	3736600	no
SC65/365	460	flood plain	borrow pit	588027	3737609	yes
SC67	500	terrace	borrow pit	587930	3736380	no
SC77	460	upland base	severe erosion, looting	572169	3716729	no
SC78	460-480	upland base	severe erosion, looting	572169	3716729	no
SC90	460	terrace	erosion	576900	3720750	undetermined
TA201	480	terrace	cultivated	572427	3675296	no
TA208	500	flood plain	cultivated	567880	3681080	yes
TA225	460		erosion 20%destroyed	605970	3711410	no
TA226	460	-	-	-	-	-
TA276	460-480	flood plain	erosion	580605	3713930	no

Table 1. Sites in Logan Martin Reservoir, Alabama.

Site #	Elevation ASL (ft)	Topography	Condition	East	North	NRHP eligible
TA277	460	upland base	borrow pit, 100% destroyed	580605	3714029	no
TA43	480		eroded	575665	3713099	no
TA44	460-480			574430	3713274	undetermined
TA459	460	upland base	cultivated	580141	3714608	no
TA460	460	terrace	cultivated	580331	3714336	no
TA462	460	terrace	cultivated	580683	3714180	no
TA463	460	terrace	cultivated	580565	3714417	no
TA468	460	terrace	cultivation, 100% destroyed	587660	3704260	no
TA47	460-480	-	-	576480	3713220	undetermined
TA546	460		severe erosion 80%destroyed	569443	3700165	yes
TA547	460	-	-	569494	3700355	yes
TA617	460-480	flood plain	severe erosion, 90 % destroyed	578020	3720120	undetermined
TA618	460	flood plain	severe erosion, 80 % destroyed	577141	3719921	undetermined
TA66	460-480	-	inundated	571939	3708990	undetermined
TA669	460	terrace	logging, 90% destroyed	577371	3720830	no
TA683	460	terrace	erosion, 90% destroyed	572790	3716921	yes
TA687	460	island	severe erosion	577051	3723744	undetermined
TA706	460	terrace	erosion, 80% destroyed	576907	3724496	yes
TA712	480	flood plain	intermittent, 100% destroyed	575794	3718163	no
TA775	460	terrace	erosion, 80%destroyed	573445	3714870	yes
TA787	460	terrace	erosion, 95% destroyed	574586	3716798	no
TA791	460	upland slope	erosion 65% destroyed	580545	3673950	yes
TA792	460	terrace	erosion 80% destroyed	577617	3720204	no
TA795	460	flood plain	inundated, 90% destroyed	576207	3725297	no
TA797/48	480	-	erosion 99% destroyed	576127	3713496	no

Table 1. Sites in Logan Martin Reservoir, Alabama.

Site #	Elevation ASL (ft)	Topography	Condition	East	North	NRHP eligible
TA798	480	-	inundated 99% destroyed	576390	3713272	no
TA799	460-480	upland base	inundated	575506	3718079	undetermined
TA80	460	-	severe erosion, vandalized, inundated	567380	3707955	yes
TA801	460	upland base	inundated, 90% destroyed	574467	3718805	no
TA802	460-480	flood plain	unmodified	574601	3719069	yes
TA831	460	flood plain	erosion, 99% destroyed	577476	3722658	no
TA832	460	terrace	erosion, 85% destroyed	577212	3723776	no
TA833	460	terrace	erosion, 99% destroyed	577320	3723699	no
TA835	460	-	erosion 99%destroyed	576767	370800	no
TA837	460	terrace	erosion, vandalized	575102	3716636	no
TA838	460	-	erosion, vandalized	573469	3714923	no
TA839	460	-	erosion 50% destroyed	573550	3713481	no
TA842	460	-	severe erosion, 99 % destroyed	574700	3713402	no
TA843	460-480	-	inundated 95% destroyed	575704	3713436	no
TA845	460	on upland slope	erosion,	576666	3711437	no
TA846	460	on upland slope	erosion,	576836	371440	no
TA848	460	-	severe erosion, inundated	576516	3714506	no
TA851	460	flood plain	severe erosion, 90 % destroyed	576765	317347	no
TA855	460	upland base	erosion, 90% destroyed	576932	3717974	no
TA856	460	on upland slope	inundated	574090	3713388	no
TA858	460	flood plain	inundated, 99% destroyed	575019	3726028	no

Table 1. Sites in Logan Martin Reservoir, Alabama.

Site #	Elevation ASL (ft)	Topography	Condition	East	North	NRHP eligible
TA863	460	flood plain	severe erosion, 99 % destroyed	575745	3717038	no
TA864	460	on upland slope	severe erosion, 75 % destroyed	573566	3713598	no
TA865	460	on upland slope	severe erosion, 90 % destroyed	573905	3713481	no
TA870	460	terrace	Looted, 50% destroyed	580312	3714784	yes
TA895	460	-	erosion 90%destroyed	577324	3705183	no
TA897	460	-	erosion and vandalism	578584	3714537	no
TA900	460	-	erosion, 50% destroyed	580032	3714749	yes
TA902	460	-	erosion 85%destroyed	568800	3704575	no
TA907	460	terrace	eroded, 90% destroyed	580466	3714908	Yes

Table 2. Sites in Weiss Reservoir, Alabama

Site #	Elevation ASL	Condition	East	North	NRHP status
CE10	560	inundated	625941	3785963	undetermined
CE11	560	inundated	629680	3780440	undetermined
CE12	560	inundated	629480	3780460	undetermined
CE13	560	inundated	629340	3780480	undetermined
CE15	560	inundated	630040	3781300	undetermined
CE16	560	inundated	628640	3780780	undetermined
CE17	560	inundated	628817	3780780	undetermined
CE18	560	inundated	628946	3780552	undetermined
CE340	560	intermittent	623080	3785360	undetermined
CE38	560	inundated	628236	3783049	undetermined
CE44	560	inundated	628382	3785038	undetermined
CE45	560	inundated	628477	3785765	undetermined
CE60	565	intermittent	626973	3785174	undetermined
CE61	560	inundated	627180	3783940	undetermined
CE68	560	inundated	624088	3784150	undetermined
CE87	565	intermittent	622520	3785460	undetermined
CE88	560	inundated	622900	3785480	undetermined
CE90	560	inundated	622840	3785580	undetermined
CE92	565	inundated	622938	3785325	undetermined
CE93	565	intermittent	622440	3785680	undetermined
CE94	565	intermittent	622340	3785820	undetermined
CE95	565	inundated	622260	3785500	undetermined
CE96	560	inundated	622080	3785600	undetermined

Table 2. Sites in Weiss Reservoir, Alabama

Site #	Elevation ASL	Condition	East	North	NRHP status
CE97	560	inundated	621980	3785740	undetermined
CE100	560	inundated	621840	3785863	undetermined
CE106	565	-	623900	3785460	undetermined
CE107	560	inundated	623680	3785360	undetermined
CE119	565	inundated	619862	3787099	undetermined
CE121	565	-	621093	3786735	undetermined
CE149	560	inundated	616940	3784400	undetermined
CE169	560	cultivation	623920	3787900	undetermined
CE183	565	inundated	623792	3791349	undetermined
CE186	560	inundated	623300	3791060	undetermined
CE225	560	inundated	626880	3788800	undetermined
CE226	560	inundated	626820	3788980	undetermined
CE227	565	intermittent	627918	3789214	undetermined
CE228	560	inundated	627540	3789040	undetermined
CE241	560	inundated	628619	3789197	undetermined
CE244	565	inundated	629620	3790300	undetermined
CE246	560	inundated	629360	3790740	undetermined
CE247	565	intermittent	629400	3790980	undetermined
CE248	565	intermittent	629780	3791100	undetermined
CE249	560	intermittent	630647	3790458	undetermined
CE250	560	inundated	630527	3790564	undetermined
CE251	560	inundated	630360	3790760	undetermined
CE252	560	intermittent	631702	3791069	undetermined
CE253	560	intermittent	632038	3789856	undetermined
CE254	560	inundated	631680	3789700	undetermined
CE255	560	intermittent	631840	3790420	undetermined
CE256	565	intermittent	631960	3789900	undetermined
CE258	560	inundated	630418	3790325	undetermined
CE259	560	inundated	630240	3783880	undetermined
CE261	560	inundated	630500	3783840	undetermined
CE263	560	inundated	630700	3783900	undetermined
CE265	560	inundated	630040	3784200	undetermined
CE266	560	inundated	630659	3784418	undetermined
CE267	560	inundated	631100	3784440	undetermined
CE268	560	inundated	631320	3784560	undetermined
CE269	560	inundated	631560	3784660	undetermined
CE270	560	inundated	631100	3784240	undetermined
CE271	560	inundated	631240	3784260	undetermined
CE272	560	inundated	630680	3784840	undetermined
CE273	560	inundated	631480	3785400	undetermined
CE274	560	inundated	630239	3784509	undetermined
CE275	560	inundated	630840	3785000	undetermined
CE278	565	intermittent	632660	3785480	undetermined
CE279	560	intermittent	632660	3785480	undetermined
CE280	560	inundated	634000	3785900	undetermined
CE283	560	inundated	634220	3786040	undetermined
CE284	560	inundated	634680	3786220	undetermined
CE285	560	inundated	634520	3786180	undetermined
CE287	560	inundated	635375	3786226	undetermined

Table 2. Sites in Weiss Reservoir, Alabama

Site #	Elevation ASL	Condition	East	North	NRHP status
CE288	560	inundated	635375	3786226	undetermined
CE293	560	inundated	637680	3784980	undetermined
CE294	560	inundated	638260	3784280	undetermined
CE297	560	intermittent	638600	3783680	undetermined
CE298	560	intermittent	638620	3783240	undetermined
CE299	565	intermittent	639260	3782620	undetermined
CE300	560	inundated	640060	3785160	undetermined
CE301	565	inundated	637798	3784673	undetermined
CE303	560	inundated	637140	3786080	undetermined
CE305	565	inundated	639780	3783080	undetermined
CE306	565	intermittent, 75% destroyed	640199	3783110	undetermined
CE307	565	intermittent	639885	3783456	undetermined
CE335	560	intermittent	627140	3787200	undetermined
CE341	560	intermittent	623260	3785240	undetermined
CE342	560	-	624700	3784300	undetermined
CE432	570	cultivation	634600	3785550	undetermined
CE569	570	unmodified, 95% destroyed	629427	3785106	undetermined
CE597	560	inundated	-	-	undetermined
CE598	560	inundated	-	-	undetermined
CE599	560	inundated	-	-	undetermined
CE600	560	inundated	-	-	undetermined
CE601	570	-	-	-	undetermined
CE602	560	-	-	-	undetermined
CE603	570	-	-	-	undetermined
CE604	560	-	-	-	undetermined
CE618	560	inundated, 80% destroyed	623890	3791786	undetermined
CE681	560		322324	3791886	undetermined
CE20	560	inundated	629689	3782440	no
CE23	570	cultivation	630034	3734542	no
CE25	560	inundated	629640	3783854	no
CE26	560	inundated	629636	3783600	no
CE27	560	inundated	629586	3783312	no
CE28	560	inundated	629649	3782977	no
CE58	560	intermittent	627587	3785042	no
CE59	465	intermittent	626851	3785064	no
CE62	565	intermittent	627340	3784520	no
CE63	560	inundated	627220	3784180	no
CE276	560	inundated	631974	3785609	no
CE289	560	inundated	635660	3786380	no
CE292	560	inundated, erosion 100% destroyed	636705	3786057	no
CE302	560	inundated	638028	3784533	no
CE422	560	unmodified	623962	3787620	no
CE534	560	inundated	627201	3771787	no
CE548	565	cultivation	638211	3783216	no

Table 2. Sites in Weiss Reservoir, Alabama

Site #	Elevation ASL	Condition	East	North	NRHP status
CE549	565	cultivation	638196	3783278	no
CE550	565	cultivation	638112	3783370	no
CE551	560	cultivation	637997	3783496	no
CE552	565	cultivation	638369	3783100	no
CE553	565	cultivation	638446	3782871	no
CE554	565	cultivation	638493	3782791	no
CE555	565	cultivation	638594	3782705	no
CE556	565	cultivation	638747	3782608	no
CE558	568	cultivation	638143	3783986	no
CE559	564	severe erosion	629090	3785410	no
CE561	570	cultivation	641051	3784719	no
CE562	570	cultivation	641212	3784677	no
CE563	570	cultivation	641081	3784582	no
CE564	570	cultivation	641355	3784621	no
CE565	570	cultivation	641473	3784478	no
CE566	570	cultivation	640991	3784456	no
CE592	570	cultivation	630167	3785308	no
CE593	570	cultivation	630145	3785331	no
CE594	570	cultivation	630020	3785410	no
CE596	570	construction	629718	3785385	no
CE609	570	cultivation, 99% destroyed	630149	3785384	no
CE610	570	cultivation, 99% destroyed	630323	3785392	no
CE612	570	cultivation, 99% destroyed	629224	3784709	no
CE613	570	cultivation, 99% destroyed	629904	3785055	no
CE614	570	cultivation, 99% destroyed	629863	3784855	no
CE623	558	inundated. 90% destroyed	630460	3785172	no
CE624	558	inundated	630396	3785441	no
CE631	558	inundated. 90% destroyed	637416	3785956	no
CE632	558	erosion, 90% destroyed	636938	3785998	no
CE635	560	erosion, 95% destroyed	631922	3785776	no
CE636	560	erosion, 95% destroyed	630792	3785214	no
CE637	560	erosion	630591	3785361	no
CE638	560	inundated	630536	3785425	no
CE640	560	inundated, 95% destroyed	635381	3786541	no
CE641	560	erosion, 95% destroyed	635224	3786610	no
CE642	560	erosion, 99% destroyed	616192	378390	no

Table 2. Sites in Weiss Reservoir, Alabama

Site #	Elevation ASL	Condition	East	North	NRHP status
CE643	560	inundated, 99% destroyed	615246	3783769	no
CE647	559	erosion, 99% destroyed	627474	378479	no
CE651	560	inundated, 99% destroyed	613357	3780927	no
CE652	560	erosion	624558	3791803	no
CE654	560	severe erosion, 98% destroyed	630454	3781205	no
CE655	555	erosion	627499	3787487	no
CE659	560	intermittent	623575	3783900	no
CE661	560	erosion, 80% destroyed	631290	3789780	no
CE663	560	erosion	630595	3790144	no
CE664	560	unmodified	631558	3790440	no
CE666	560	erosion	625555	3792380	no
CE669	560	erosion	623735	3792150	no
CE672	560	inundated	528255	3789755	no
CE673	560	inundated	634515	3782850	no
CE675	565	intermittent, 99% destroyed	628870	3785745	no
CE676	560	inundated	630688	3775767	no
CE683	560	erosion	622084	3787490	no
CE21	560	inundated			-
CE615	558	inundated, 90% destroyed	629048	3785168	-
CE304	560	inundated, partially, 99% destroyed	637418	3785586	yes
CE333	560	intermittent, 65% destroyed	626918	3787104	yes
CE484	560	intermittent, 50% destroyed	632110	3791700	yes
CE571	570	cultivation, 99% destroyed	630315	3785081	yes
CE615	570	cultivation, 75% destroyed	630083	3784738	yes
CE653	560	inundated, 75% destroyed	623169	3791957	yes
CE660	560	erosion, 80% destroyed	631453	3789710	yes
CE662	560	intermittent, 70% destroyed	631790	3789930	yes
CE665	560	unmodified	631845	3790300	yes
CE668	560	inundated	623630	3791855	yes

Table 3. Sites Along Coosa River Below Lay Dam

Site #	Elevation ASL	Condition	Topography	East	North	NRHP eligibility
CN592	320	-	upland crest	544555	3646916	yes
CS38	320	-	island	545340	3645510	undetermined
CS207	310	-	island	545435	3644458	undetermined
CS38	320	-	island	545340	3645510	undetermined
CS39	340	-	island	545513	3645465	undetermined
CS205	360	-	island	546235	3641764	no
CN550	308	-	upland slope	549770	3636428	undetermined
CN552	310	inundated	upland crest	550453	3636312	undetermined
CS215	309	inundated	upland base	554025	363689	undetermined
CS216	310	-	upland base	554951	3637593	undetermined
CS201	310	inundated	terrace	555224	3637164	undetermined
CS120	320	inundated	flood plain	556540	3636235	no
CS217	310	inundated	upland base	555302	3635955	no
CS212	310	inundated	upland base	552884	3635133	undetermined
CS211	310	-	upland base	552969	3634929	undetermined
CS213	310	-	upland slope	552871	3634761	undetermined
CS210	310	inundated	island	552524	3634617	undetermined
CS209	311	-	island	552348	3634553	no
CS214	310	-	island	552088	3634638	no
CN401	350-310	-	upland slope	550814	3634622	no
CN549	311	-	island	550951	3634393	no
CS199	320	improved	upland base	550965	3633217	no
CN554	350	-	island	549314	3632608	no
CN555	310	-	upland base	549316	3632238	no
CN556	310	-	terrace	550521	3630723	no
CN548	311	inundated	upland slope	550578	3630549	no

Table 4. Sites Along Coosa River Below Logan Martin Dam

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP Eligibility
TA19	400	cultivated	valley terrace	560211	3683778	yes
TA20	400	-	flood plain	559950	3684000	undetermined
TA21	400	-	valley terrace	559960	3684260	undetermined
TA22	400	-	upland crest	559930	3684460	undetermined
TA33	400	-	upland crest	559132	2575288	undetermined
TA804	397	-	upland base	559060	3687007	no
SH758	394	-	upland slope	558929	3688164	yes
TA265	400	developed	valley terrace	558886	3688792	no
TA266	400	developed	valley terrace	558970	3688790	no
SH341	400	-	flood plain	558320	3688870	no
TA23	395	-	valley terrace	559027	3689354	undetermined
SH456	410	-	upland crest	560122	3692216	undetermined
SH457	410	construction	upland crest	559997	3692345	undetermined

Table 4. Sites Along Coosa River Below Logan Martin Dam

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP Eligibility
TA24	395	cultivated	flood plain	560452	3692481	no
TA25	400	-	terrace	560280	3692660	undetermined
TA26	400	-	terrace	560180	3692800	undetermined
TA27	397	-	terrace	559983	3692934	undetermined
TA145	400	cultivated	terrace	560540	3692740	no
TA31	397	-	terrace	557976	3694161	undetermined
SC178	410	cultivated	upland crest	557840	3694899	undetermined
SC361	400	-	island	558514	3695653	yes
SC360	415	-	terrace	559562	3696598	yes
SC2	415	-	terrace	560514	3696851	undetermined
SC4	415	-	terrace	561177	3697617	undetermined
TA16	400	-	terrace	561359	367747	no
TA17	400	-	terrace	561374	3697517	no
TA18	400	-	valley terrace	561418	3697593	no

Table 5. Sites Along Coosa River Below Mitchell Dam

Site #	Elevation ASL (ft)	condition	Topography	East	North	NRHP eligibility
CS47	230	developed	-	553232	3628778	No
CS50	260	developed	-	553626	3628257	Yes
CS208	250	inundated	floodplain	554472	3628158	Yes
CN553	250		island	554412	3627973	No
CN547	250	inundated	upland base	554973	3626689	No
EE764	252		upland slope	559362	3622584	yes
EE765	250	developed	upland slope	563160	3615650	no
EE808	255	logged	terrace	560896	3613109	yes
EE762	249	inundated	island	562329	3612792	no
EE759	257		terrace	562631	3612978	no
EE760	249	inundated	floodplain	562776	3612953	no
EE247	300	-	upland slope	564900	3612000	undetermined
EE246	300	-	upland slope	564816	3611731	undetermined
EE758	250	inundated	island	565684	3612628	no
EE763	250	developed	island	566897	3611168	no
EE766	250	-	upland base	567308	3610859	no
EE767	250	-	upland base	567440	3611072	no
EE768	250	-	island	568024	3610661	no
EE757	250	inundated	flood plain	568808	3610883	no
EE756	255	developed	terrace	565439	3608025	no
EE769	252	developed	island	569408	3609163	no
EE804	348	-	upland crest	569854	6608988	yes

Table 6. Sites Along Coosa River Below Weiss Dam

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP Eligibility
CE419	550	cultivated	terrace	620417	3777453	no
CE420	540	cultivated	flood plain	621650	3776490	no
CE423	530	cultivated	terrace	621304	3776152	no
CE424	540	cultivated	terrace	620760	3776312	no
CE425	540	cultivated	terrace	605837	3775436	no
CE605	530	-	Floodplain	605656	3775131	no
CE606	530	-	terrace	608428	3769780	no
CE607	530	cultivated	terrace	608000	3768980	no
CE608	530	cultivated	terrace	608190	3767120	no
ET183	540	cultivated	flood plain	608300	3766910	no
ET253	-	cultivated	flood plain	608200	3766680	no
ET254	-	cultivated	terrace	607780	3766870	no
ET312	520	cultivated	terrace	607880	3766780	no
ET339	520	cultivated	terrace	607880	3766780	no
ET128	530	cultivated	terrace	607310	3766450	no
ET134	530	cultivated	terrace	607400	3766380	no
ET133	530	cultivated	terrace	607220	3766330	no
ET125	530	cultivated	terrace	606960	3766410	no
ET132	530	cultivated	flood plain	606770	3766220	no
ET131	530	cultivated	terrace	606735	3766263	no
ET130	530	cultivated	terrace	606640	3766360	no
ET129	530	cultivated	terrace	606257	3766366	no
ET124	530	cultivated	flood plain	606170	3766260	no
ET123	530	cultivated	flood plain	606180	3766170	no
ET126	530	cultivated	terrace	605750	3766420	no
ET122	530	cultivated	terrace	605849	3766292	no
ET121	530	cultivated	flood plain	605850	3766240	no
ET127	530	cultivated	terrace	603113	3769005	no
ET137	530	cultivated	terrace	603000	3769324	no
ET135	530	cultivated	terrace	602928	3769456	no
ET141	530	cultivated	terrace	602868	3769540	no
ET138	530	cultivated	terrace	602433	3769964	no
ET139	530	cultivated	terrace	601666	3770008	no
ET136	530	cultivated	terrace	601336	3769656	no
ET140	530	cultivated	terrace	600855	3769469	no
ET169	530	cultivated	flood plain	600593	3769565	no
ET157	530	cultivated	terrace	600453	3769067	no
ET156	530	cultivated	terrace	600777	3769106	no
ET155	530	cultivated	terrace	600598	3768970	no
ET200	530	construction	terrace	600120	3769265	no
ET181	520	cultivated	terrace	600180	3769156	no
ET180	520	cultivated	terrace	600126	3768998	no
ET148	530	cultivated	terrace	601726	3764208	no
ET149	530	cultivated	terrace	602038	3764152	no
ET166	530	cultivated	terrace	601962	3764038	no

Table 6. Sites Along Coosa River Below Weiss Dam

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP Eligibility
ET165	530	cultivated	flood plain	603060	3762480	no
ET168	530	cultivated	flood plain	603192	3762240	no
ET167	540	construction	upland base	603410	3762105	no
ET164	540	cultivated	flood plain	603108	3761957	no
ET316	470	cultivated	flood plain	602862	3762061	no
ET162	520	-	terrace	601371	3762866	no
ET163	520	-	terrace	593683	3764664	no
ET175	520	-	-	593965	3756191	no
ET178	530	-	upland base	594314	3765239	no
ET177	520	-	terrace	594460	3764820	no
ET150	530	-	terrace	594420	3764600	no
ET232	525	-	terrace	-	-	-
ET234	520	-	terrace	-	-	-
ET233	515	-	terrace	-	-	-
ET80	520	-	terrace	-	-	-
CE142	540	-	upland slope	615020	3781860	undetermined
ET143	540	cultivated	terrace, in field	615281	3781987	undetermined
ET144	520	cultivated	flood plain	615080	3782440	undetermined
ET145	520	cultivated	terrace	615159	3782380	undetermined
ET146	540	cultivated	terrace	615400	3782620	undetermined
ET147	540	cultivated	terrace	615900	3782720	undetermined
CE309	540	-	-	620160	3778200	undetermined
CE311	540	-	-	620880	3777360	undetermined
CE312	540	-	-	620500	3777100	undetermined
CE313	540	cultivated	flood plain	613620	3771420	undetermined
CE328	520	cultivated	flood plain	613679	3771639	undetermined
CE329	540	cultivated	terrace	613780	3771680	undetermined
CE330	540	cultivated	terrace	614520	3771560	undetermined
CE331	540	cultivated	terrace	615143	3771180	undetermined
CE332	520	cultivated	flood plain	611665	3772351	undetermined
CE337	520	cultivated	flood plain	611995	3772212	undetermined
CE338	540	cultivated	terrace	611980	3772400	undetermined
CE360	540	cultivated	terrace	612160	3772520	undetermined
CE361	520	cultivated	flood plain	611553	3772695	undetermined
CE362	540	cultivated	terrace	611651	3772844	undetermined
CE363	540	cultivated	terrace	611780	3772620	undetermined
CE364	540	cultivated	terrace	611855	3772872	undetermined
CE365	540	cultivated	terrace	612135	3772691	undetermined
CE366	540	cultivated	flood plain	611160	3775100	undetermined
CE367	550	cultivated	terrace	611390	3775030	undetermined
CE368	540	cultivated	terrace	611430	3775310	undetermined
CE369	540	cultivated	terrace	621280	3776860	undetermined
CE370	540	cultivated	terrace	621160	3776660	undetermined
CE371	540	cultivated	terrace	621059	3776697	undetermined

Table 6. Sites Along Coosa River Below Weiss Dam

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP Eligibility
CE372	540	cultivated	terrace	622070	3776226	undetermined
CE378	540	cultivated	terrace	622232	3776152	undetermined
CE379	540	cultivated	flood plain	621917	3776316	undetermined
CE380	540	cultivated	terrace	621917	3776316	undetermined
CE381	540	cultivated	terrace	615570	3773939	undetermined
CE382	540	cultivated	terrace	615820	3773750	undetermined
CE383	540	cultivated	upland crest	615900	3773750	undetermined
CE384	540	cultivated	terrace	616062	3773650	undetermined
CE385	540	cultivated	terrace	616200	3773380	undetermined
CE386	540	cultivated	terrace	616225	3773562	undetermined
CE387	540	cultivated	terrace	616470	3773600	undetermined
CE388	540	cultivated	terrace	616426	3773405	undetermined
CE389	540	cultivated	terrace	616505	3773342	undetermined
CE390	550	cultivated	terrace	616580	3773370	undetermined
CE391	540	cultivated	terrace	616700	3773660	undetermined
CE392	550	cultivated	flood plain	620820	3776944	undetermined
CE393	540	cultivated	terrace	613910	3771270	undetermined
CE394	530	cultivated	flood plain	621118	3776987	undetermined
CE418	570	cultivated	flood plain	621608	3776772	undetermined
ET159	520	cultivated	terrace	605970	3766420	undetermined
ET158	520	cultivated	terrace	601064	3769567	undetermined
ET278	503	cultivated	terrace	601072	3769417	undetermined
ET161	520	cultivated	terrace	602806	3764312	undetermined
ET160	520	-	upland crest	593827	3765366	undetermined
ET170	520	-	upland base	594614	3765228	undetermined
ET171	530	-	upland base	594440	3765100	undetermined
ET292	508	-	upland slope	594208	3764919	undetermined
ET230	570	-	terrace	586785	374626	yes
ET231	510	-	terrace	596063	376349	yes
ET235	510	cultivated, looted	-	620800	3776900	yes
ET81	520	-	-	-	-	-
ET293	509	-	-	-	-	-

Table 7. Sites in Allatoona Reservoir and Below Allatoona Dam, Bartow County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
9br29	840	plowzone, < 50% disturbed, inundated	ridge knoll	711200	3773600	undetermined
9br139	840	plowzone, little to no disturbance	floodplain	713240	3788100	undetermined

Table 7. Sites in Allatoona Reservoir and Below Allatoona Dam, Bartow County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
9br141	840	< 50% disturbance	-	713600	3787672	undetermined
9br145	840	< 50% disturbance	floodplain	713800	3787220	undetermined
9br146	840	flooded	-	712480	3784572	undetermined
9br150	840	flooded	-	710240	3781480	undetermined
9br162	840	flooded	-	711216	3778480	undetermined
9br163	840	flooded	-	711144	3778324	undetermined
9br164	840	flooded	-	710360	3778000	undetermined
9br168	840	flooded	-	711840	3775600	undetermined
9br262	840	plowzone, < 50% disturbed	-	709200	3783570	undetermined
9br348	840	plowzone, little to no disturbance	-	709880	3779160	undetermined
9br490	840	plowzone, < 50% disturbed	-	709600	3783220	undetermined
9br528	840	plowzone, < 50% disturbed	-	713350	3773950	undetermined
9br605	840	little to no disturbance	-	709800	3786340	undetermined
9br876	840	eroded	-	712780	3774760	undetermined
9br877	840	unknown	-	713330	3774090	undetermined
9br675	830	endangered	-	713300	3781160	undetermined
9br152	840	-	-	713288	3780900	undetermined
9br151	840	flooded	-	712900	3780912	undetermined
9br153	840	flooded	-	713600	3780660	undetermined
9br154	840	flooded	-	713552	3780300	undetermined
9br155	840	flooded	-	714120	3779840	undetermined
9br158	840	flooded	-	715000	3781192	undetermined
9br159	840	flooded	-	715288	3781060	undetermined
9br160	840	flooded	-	715540	3780768	undetermined
9br360	840	little to no disturbance	-	715280	3778840	undetermined
9br148	840	flooded, > 50% disturbed	ridge nose	712540	3784500	no
9br165	840	plowzone, > 50% disturbed	ridge nose	711520	3777210	no
9br167	840	plowzone, < 50% disturbed	-	712220	3776040	no
9br170	840	flooded	-	712072	3775552	no
9br243	840	plowzone, > 50% disturbed	ridge top	709210	3783050	no

Table 7. Sites in Allatoona Reservoir and Below Allatoona Dam, Bartow County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
9br251	840	plowzone, < 50% disturbed	-	710390	3783460	no
9br251	840	plowzone, < 50% disturbed	-	710390	3783460	no
9br254	840	plowzone, < 50% disturbed	-	709510	3783480	no
9br263	840	plowzone, < 50% disturbed	-	709330	3783600	no
9br275	840	plowzone, < 50% disturbed	-	710240	3778380	no
9br276	840	plowzone, < 50% disturbed	-	710730	3779080	no
9br278	840	plowzone, < 50% disturbed	-	711580	3779260	no
9br280	840	plowzone, < 50% disturbed	-	711870	3778840	no
9br282	840	plowzone, < 50% disturbed	-	711820	3779370	no
9br347	840	plowzone, < 50% disturbed	-	709900	3779730	no
9br400	840	plowzone, greater that 50% disturbed	-	713050	3774390	no
9br401	840	plowzone, greater that 50% disturbed	-	710880	3774580	no
9br408	840	plowzone, > 50% disturbed	-	710390	3774370	no
9br410	840	plowzone, < 50% disturbed	-	713080	3783580	no
9br413	840	plowzone, < 50% disturbed	-	713940	3787080	no
9br416	840	plowzone, < 50% disturbed	-	713070	3783900	no

Table 7. Sites in Allatoona Reservoir and Below Allatoona Dam, Bartow County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
9br417	840	plowzone, < 50% disturbed	-	712800	3783900	no
9br418	840	plowzone, < 50% disturbed	-	712630	3784090	no
9br419	840	plowzone, < 50% disturbed	-	712620	3783990	no
9br420	830	plowzone, > 50% disturbed	-	712590	3784480	no
9br420	830	plowzone, > 50% disturbed	-	712590	3784480	no
9br424	840	plowzone, > 50% disturbed	-	712920	3785250	no
9br425	840	plowzone, < 50% disturbed	-	712700	3784300	no
9br426	840	plowzone, < 50% disturbed	-	712850	3784400	no
9br427	840	plowzone, < 50% disturbed	-	712760	3784570	no
9br429	840	plowzone, > 50% disturbed	-	712200	3783850	no
9br431	840	plowzone, > 50% disturbed	-	712080	3784350	no
9br435	840	plowzone, < 50% disturbed	-	713920	3775670	no
9br437	840	plowzone, < 50% disturbed	-	714380	3775330	no
9br438	840	plowzone, < 50% disturbed	-	714600	3775280	no
9br442	840	plowzone, < 50% disturbed	-	715340	3774940	no
9br443	840	plowzone, < 50% disturbed	-	715240	3775050	no
9br446	840	plowzone, > 50% disturbed	-	712080	3775380	no

Table 7. Sites in Allatoona Reservoir and Below Allatoona Dam, Bartow County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
9br447	840	plowzone, little to no disturbance	-	712840	3774510	no
9br452	840	plowzone, < 50% disturbed	-	713100	3774080	no
9br479	840	plowzone, > 50% disturbed	-	711120	3783350	no
9br520	840	plowzone, > 50% disturbed	-	711220	3783780	no
9br522	840	plowzone, < 50% disturbed	-	712100	3773170	no
9br526	840	plowzone, < 50% disturbed	-	714730	3775250	no
9br537	840	plowzone, < 50% disturbed	-	712890	3775940	no
9br542	840	plowzone, > 50% disturbed	-	711850	3776840	no
9br543	840	plowzone, > 50% disturbed	-	711920	3776930	no
9br544	840	plowzone, > 50% disturbed	-	712000	3776930	no
9br546	840	plowzone, > 50% disturbed	-	711860	3776730	no
9br547	840	plowzone, < 50% disturbed	-	712350	3776520	no
9br548	840	plowzone, < 50% disturbed	-	711970	3776680	no
9br553	840	plowzone, < 50% disturbed	-	712040	3777920	no
9br556	840	plowzone, < 50% disturbed	-	712690	3775160	no
9br557	840	plowzone, < 50% disturbed	-	712510	3775160	no
9br559	840	plowzone, < 50% disturbed	-	711300	3775370	no

Table 7. Sites in Allatoona Reservoir and Below Allatoona Dam, Bartow County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
9br560	840	plowzone, < 50% disturbed	-	711840	7333170	no
9br561	840	plowzone, < 50% disturbed	-	711730	3773220	no
9br569	840	plowzone, > 50% disturbed	-	710620	3777760	no
9br570	840	plowzone, > 50% disturbed	-	711010	3778220	no
9br592	840	plowzone, < 50% disturbed	-	713480	3785630	no
9br604	836	plowzone, > 50% disturbed	-	710100	3785990	no
9br608	840	plowzone, < 50% disturbed	-	710460	3785640	no
9br609	840	plowzone, > 50% disturbed	-	710590	3785730	no
9br611	840	plowzone, < 50% disturbed	-	711050	3785600	no
9br613	840	plowzone, < 50% disturbed	-	714800	3786660	no
9br619	830	plowzone, < 50% disturbed	-	712560	3785870	no
9br890	840	plowzone, > 50% disturbed	-	711530	3775120	no
9br463	840	plowzone, < 50% disturbed	-	714130	3782670	no
9br312	840	plowzone, < 50% disturbed	-	714150	3782560	no
9br308	840	plowzone, < 50% disturbed	-	713520	3782550	no
9br307	840	plowzone, < 50% disturbed	-	713520	3782540	no
9br238	840	> 50% disturbed	ridge nose	712250	3781760	no

Table 7. Sites in Allatoona Reservoir and Below Allatoona Dam, Bartow County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
9br392	840	little to no disturbance	-	713720	3781820	no
9br557	840	plowzone, < 50% disturbed	-	712510	3775160	no
9br578	840	plowzone, > 50% disturbed	-	713050	3780940	no
9br352	840	plowzone, < 50% disturbed	-	715200	3779700	no
9br157	840	plowzone, > 50% disturbed	ridge nose	714940	3780090	no
9br315	830	plowzone, < 50% disturbed	-	715270	3782150	no
9br397	840	plowzone, > 50% disturbed	-	715300	3781250	no
9br459	840	plowzone, < 50% disturbed	-	715480	3781150	no
9br460	830	plowzone, < 50% disturbed	-	715580	3781020	no
9br461	830	plowzone, > 50% disturbed	-	715800	3780760	no
9br355	840	plowzone, < 50% disturbed	-	715780	3779820	no
9br354	840	plowzone, < 50% disturbed	-	715760	3779770	no
9br358	840	plowzone, > 50% disturbed	-	715800	3779210	no
9br357	840	plowzone, < 50% disturbed	-	715720	3779060	no
9br433	880	plowzone, < 50% disturbed	-	712310	3784300	yes

Table 8. Sites in Allatoona Reservoir, Cherokee County, Georgia

Site #	Elevation ASL (ft)	Condition	East	North	NRHP eligible
9ck26	830	-	721900	3784400	undetermined
9ck27	840	-	721400	3784500	undetermined
9ck34	840	submerged, vandalized	716540	3779320	undetermined
9ck35	840	-	725048	3782456	undetermined
9ck39	840	-	722672	3782840	undetermined
9ck40	840	-	722600	3782552	undetermined
9ck43	840	flooded	821780	3784380	undetermined
9ck440	840	flooded	721140	3784140	undetermined
9ck73	840	flooded	720700	3783720	undetermined
9ck74	840	flooded	720220	3784200	undetermined
9ck75	823-840	flooded	-	-	undetermined
9ck76	823-840	-	-	-	undetermined
9ck77	840	flooded	719600	3783200	undetermined
9ck78	840	plowzone, < 50% disturbed	720550	3784240	undetermined
9ck79	840	flooded	718910	3782950	undetermined
9ck80	840	flooded	719900	3783000	undetermined
9ck82	840	flooded	720000	3783700	undetermined
9ck83	840	flooded	720020	3783600	undetermined
9ck84	840	flooded	720020	3783500	undetermined
9ck85	840	flooded	720000	3783380	undetermined
9ck86	840	flooded	718980	3782220	undetermined
9ck87	840	flooded	718980	3782220	undetermined
9ck88	840	flooded	719840	3782300	undetermined
9ck89	840	flooded	719960	3789080	undetermined
9ck89	840	flooded	719450	3782200	undetermined
9ck90	840	flooded	719620	3782000	undetermined
9ck91	840	flooded	719300	3781900	undetermined
9ck92	840	flooded	719000	3782100	undetermined
9ck93	840	flooded	719000	3781800	undetermined
9ck94	840	flooded	718504	3781660	undetermined
9ck95	840	flooded	719000	3781600	undetermined
9ck96	840	flooded	719300	3784000	undetermined
9ck97	840	-	719320	3780000	undetermined
9ck98	840	plowzone, < 50% disturbed	718950	3779310	undetermined
9ck99	840	-	718200	3779300	undetermined
9ck100	840	flooded	720384	3779360	undetermined
9ck101	840	plowzone, < 50% disturbed	723180	3782040	undetermined
9ck104	840	plowzone, < 50% disturbed	725700	3781500	undetermined
9ck114	840	plowzone, < 50% disturbed	720180	3777920	undetermined
9ck119	830	plowzone, < 50% disturbed	722840	3783040	undetermined
9ck120	840	plowzone, < 50% disturbed	726900	3780850	undetermined

Table 8. Sites in Allatoona Reservoir, Cherokee County, Georgia

Site #	Elevation ASL (ft)	Condition	East	North	NRHP eligible
9ck124	840	plowzone, < 50% disturbed	727080	3780560	undetermined
9ck125	840	little to no disturbance	727360	3780260	undetermined
9ck126	830	plowzone, < 50% disturbed	718760	3779820	undetermined
9ck178	840	plowzone, > 50% disturbed	719550	3782550	undetermined
9ck181	830	plowzone, < 50% disturbed	716720	3778360	undetermined
9ck201	840	flooded	721900	3784800	undetermined
9ck217	840	flooded	724640	3785000	undetermined
9ck219	840	plowzone, < 50% disturbed	721650	3786000	undetermined
9ck224	840	plowzone, < 50% disturbed	722600	3784950	undetermined
9ck229	840	plowzone	722850	3785200	undetermined
9ck229	840	plowzone, < 50% disturbed	723100	3786140	undetermined
9ck255	840	flooded	724560	3786000	undetermined
9ck255	840	flooded	724660	3786300	undetermined
9ck281	840	flooded	724420	3786500	undetermined
9ck300	840	flooded	724560	3786000	undetermined
9ck301	840	flooded	724160	3786880	undetermined
9ck316	840	flooded	724440	3787060	undetermined
9ck317	840	-	723960	3787144	undetermined
9ck318	840	-	723840	3787480	undetermined
9ck320	840	plowzone, < 50% disturbed	722840	3787700	undetermined
9ck322	840	-	724360	3789048	undetermined
9ck323	830	plowzone, < 50% disturbed	718680	3779310	no
9ck325	840	plowzone, < 50% disturbed	722680	3783370	no
9ck328	840	plowzone, < 50% disturbed	720170	3784650	no
9ck329	840	graded, > 50% disturbed	722550	3783800	no
9ck333	840	eroded, > than 50% disturbed	722350	3783900	no
9ck334	840	eroded, > 50% disturbed	722295	3784050	no
9ck342	830	> 50% disturbed	718520	3779820	no
9ck343	830	plowzone, < 50% disturbed	718800	3780000	no
9ck347	840	plowzone, < 50% disturbed	719970	3784780	no
9ck362	840	plowzone, > 50% disturbed	715980	3779880	no

Table 8. Sites in Allatoona Reservoir, Cherokee County, Georgia

Site #	Elevation ASL (ft)	Condition	East	North	NRHP eligible
9ck363	840	plowzone, > 50% disturbed	716540	3779320	no
9ck365	840	plowzone, > 50% disturbed	719160	3781470	no
9ck366	840	plowzone, > 50% disturbed	718800	3779560	no
9ck367	840	plowzone, > 50% disturbed	718800	3779560	no
9ck369	840	plowzone, > 50% disturbed	715960	3780630	no
9ck370	840	plowzone, < 50% disturbed	723220	3783190	no
9ck372	840	plowzone, < 50% disturbed	717970	3781450	no
9ck374	840	plowzone, > 50% disturbed	719740	3777960	no
9ck375	840	plowzone, > 50% disturbed	719430	3777570	no
9ck387	840	plowzone, < 50% disturbed	719580	3777550	no
9ck408	840	plowzone, < 50% disturbed	720300	3777830	no
9ck440	830	plowzone, < 50% disturbed	722540	3783670	no
9ck443	840	plowzone, > 50% disturbed	720460	3778760	no
9ck446	840	plowzone, > 50% disturbed	720720	3778990	no
9ck447	840	plowzone, < 50% disturbed	721040	3779380	no
9ck451	840	plowzone, < 50% disturbed	721430	3779480	no
9ck454	840	plowzone, > 50% disturbed	720000	3780220	no
9ck455	840	plowzone, < 50% disturbed	722750	3783250	no
9ck456	840	plowzone, < 50% disturbed	723570	3781160	no
9ck457	840	plowzone, < 50% disturbed	723610	3781000	no
9ck458	840	plowzone, > 50% disturbed	721080	3783440	no
9ck461	840	plowzone, > 50% disturbed	722930	3782130	no
9ck466	840	plowzone, > 50% disturbed	723120	3782180	no
9ck467	840	plowzone, > 50% disturbed	723140	3781940	no
9ck476	840	plowzone, < 50% disturbed	723150	3781860	no

Table 8. Sites in Allatoona Reservoir, Cherokee County, Georgia

Site #	Elevation ASL (ft)	Condition	East	North	NRHP eligible
9ck480	840	plowzone, < 50% disturbed	723010	3781600	no
9ck481	840	plowzone, > 50% disturbed	722950	3782080	no
9ck492	840	plowzone, > 50% disturbed	723140	3781640	no
9ck943	840	plowzone, < 50% disturbed	723500	3781360	no
9ck496	840	plowzone, > 50% disturbed	723430	3780770	no
9ck497	840	plowzone, > 50% disturbed	723470	3780720	no
9ck499	840	plowzone, < 50% disturbed	726650	3780560	no
9ck500	840	< 50% disturbed	726780	3780600	no
9ck501	840	plowzone, < 50% disturbed	721170	3783280	no
9ck502	840	plowzone, < 50% disturbed	726430	3781310	no
9ck507	840	plowzone, < 50% disturbed	726940	3780950	no
9ck521	840	plowzone, > 50% disturbed	719070	3783650	no
9ck522	830	plowzone, < 50% disturbed	719980	3784220	no
9ck524	840	plowzone, < 50% disturbed	719900	3784110	no
9ck525	840	plowzone, < 50% disturbed	719920	3784000	no
9ck526	830	plowzone, < 50% disturbed	719940	3783870	no
9ck529	830	plowzone, < 50% disturbed	720040	3783150	no
9ck530	830	plowzone, > 50% disturbed	725120	3782440	no
9ck532	840	plowzone, < 50% disturbed	725190	3782470	no
9ck533	830	plowzone, > 50% disturbed	725310	3782400	no
9ck534	840	plowzone, < 50% disturbed	726200	3783100	no
9ck535	840	plowzone, < 50% disturbed	723220	3783190	no
9ck542	840	plowzone, < 50% disturbed	723000	3783070	no
9ck543	830	plowzone, < 50% disturbed	720360	3782220	no
9ck545	840	plowzone, < 50% disturbed	720500	3781720	no

Table 8. Sites in Allatoona Reservoir, Cherokee County, Georgia

Site #	Elevation ASL (ft)	Condition	East	North	NRHP eligible
9ck546	840	plowzone, < 50% disturbed	726940	3780680	no
9ck547	840	plowzone, < 50% disturbed	727300	3780400	no
9ck548	840	plowzone, < 50% disturbed	725050	3782130	no
9ck549	840	plowzone, < 50% disturbed	725420	3782300	no
9ck554	840	plowzone, < 50% disturbed	722830	3783240	no
9ck564	840	plowzone, < 50% disturbed	719380	3784050	no
9ck565	840	plowzone, > 50% disturbed	719580	3783800	no
9ck589	840	plowzone, < 50% disturbed	719280	3784620	no
9ck590	840	plowzone, < 50% disturbed	719140	3784800	no
9ck592	840	plowzone, < 50% disturbed	719200	3784440	no
9ck597	840	plowzone, < 50% disturbed	718700	3784270	no
9ck598	840	plowzone, > 50% disturbed	718630	3784250	no
9ck600	840	plowzone, < 50% disturbed	718320	3784510	no
9ck601	840	plowzone, < 50% disturbed	718220	3784000	no
9ck602	840	plowzone, < 50% disturbed	718340	3783560	no
9ck616	840	plowzone, < 50% disturbed	718320	3783180	no
9ck656	830	plowzone, < 50% disturbed	718660	3779740	no
9ck593	840	plowzone, > 50% disturbed	719220	3782350	no
9ck28	830	plowzone, < 50% disturbed	718860	3782100	no
9ck72	830	plowzone, < 50% disturbed	718700	3782300	no
9ck169	840	plowzone, < 50% disturbed	718640	3782210	no
9ck168	840	plowzone, < 50% disturbed	725840	3781550	no
9ck161	840	plowzone, < 50% disturbed	725340	3781560	no
9ck162	840	plowzone, > 50% disturbed	725430	3781420	no
9ck163	840	plowzone, < 50% disturbed	717240	3779100	no

Table 8. Sites in Allatoona Reservoir, Cherokee County, Georgia

Site #	Elevation ASL (ft)	Condition	East	North	NRHP eligible
9ck154	840	plowzone, < 50% disturbed	717370	3779240	no
9ck574	840	plowzone, < 50% disturbed	717560	3779170	no
9ck23	840	plowzone, < 50% disturbed	716800	3778500	no
9ck510	823	plowzone, < 50% disturbed	716850	3778700	no
9ck5	840	plowzone, < 50% disturbed	716900	3778900	no
9ck24	830	plowzone, < 50% disturbed	716700	3779000	no
9ck153	823	plowzone, < 50% disturbed	720950	3779620	no
9ck33	840	plowzone, < 50% disturbed	717760	3779120	no
9ck71	840	plowzone, < 50% disturbed	721500	3785850	no
9ck558	840	plowzone, < 50% disturbed	721260	3785740	no
9ck624	840	plowzone, < 50% disturbed	721200	3785840	no
9ck623	840	plowzone, < 50% disturbed	721290	3785910	no
9ck22	840	plowzone, < 50% disturbed	721400	3785450	no
9ck69	840	plowzone, > 50% disturbed	721970	3786060	no
9ck70	840	plowzone, < 50% disturbed	723040	3784230	no
9ck196	840	plowzone, > 50% disturbed	722600	3785500	no
9ck428	840	plowzone, > 50% disturbed	722900	3786120	no
9ck426	840	plowzone, > 50% disturbed	725290	3785550	no
9ck81	840	plowzone, > 50% disturbed	725200	3785630	no
9ck288	840	plowzone, > 50% disturbed	724900	3785850	no
9ck21	840	plowzone, > 50% disturbed	723560	3786470	no
9ck68	840	plowzone, < 50% disturbed	725700	3786600	no
9ck67	840	plowzone, > 50% disturbed	725490	3786530	no
9ck296	840	little to no disturbance, plowzone	724960	3787050	no

Table 8. Sites in Allatoona Reservoir, Cherokee County, Georgia

Site #	Elevation ASL (ft)	Condition	East	North	NRHP eligible
9ck174	840	plowzone, > 50% disturbed	723800	3787810	no
9CK643	840	plowzone, < 50% disturbed	724470	3788260	no
9ck66	840	plowzone, < 50% disturbed	724140	3790340	no
9ck606	840	plowzone, < 50% disturbed	724210	3790250	no
9ck607	840	eroded	716000	3778900	yes

Table 9. Sites in Allatoona Reservoir, Cobb County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
9CO9	840	eroded, more than 50% disturbed	terrace	711380	3769620	undetermined
9CO10	840	flooded	-	711380	3769540	undetermined
9CO11	840	flooded	-	711460	3769520	undetermined
9CO13	840	eroded, more than 50% disturbed	terrace	711550	3769760	undetermined
9CO57	840	-	-	710400	3768200	undetermined
9CO150	840	cultivated, 50% disturbed	terrace	710520	3769400	undetermined
9CO153	840	submerged, cultivated, more than 50% disturbed	ridge knoll	711140	3769800	undetermined
9CO195	840	cultivated, less than 50% disturbed	ridge nose	711550	3769920	undetermined
9CO47	262	eroded	ridge nose	711250	3772680	undetermined
9CO161	840	eroded	ridge nose	711260	3770840	undetermined
9CO22	840	flooded	-	711300	3771060	undetermined
9co16	840	plowzone	-	711880	3770960	undetermined
9co38	840	inundated	-	712000	3771096	undetermined
9co37	840	inundated	ridge	712000	3771216	undetermined
9co36	840	greater that 50% disturbed	ridge knoll	711870	3771280	undetermined
9co35	840	vandalized, less that 50%	plowzone	711930	3771500	undetermined

Table 9. Sites in Allatoona Reservoir, Cobb County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
9co17	840	inundated, exposed during winter	-	712520	3770880	undetermined
9co33	840	flooded	-	711744	3772156	undetermined
9CO57	840	flooded	-	711640	3772280	undetermined
9co34	840	flooded	-	711936	3772240	undetermined
9co4	840	unknown	-	711948	3772516	undetermined
9co208	840	cultivated, less than 50% disturbed	ridge nose	711870	3772950	undetermined
9CO12	840	more than 50% disturbed	terrace	711250	3769620	no
9CO14	840	eroded, more than 50% disturbed	terrace	711580	3771900	no
9CO19	840	plowzone, more that 50% disturbed	ridge top	710800	3769300	no
9CO20	840	eroded, more than 50% disturbed	terrace	711080	3769500	no
9CO21	840	eroded, more than 50% disturbed	ridge nose	711200	3769570	no
9CO49	840	eroded, more than 50% disturbed	terrace	711310	3769430	no
9CO151	843	more than 50% disturbed	ridge nose	710440	3769640	no
9CO152	840	eroded, more than 50% disturbed	ridge nose	710760	3769440	no
9CO155	840	eroded, more than 50% disturbed	terrace	711100	3769940	no
9CO197	840	eroded, more than 50% disturbed	terrace	711730	3769540	no
9CO160	840	plowzone, more that	ridge nose	711050	3770920	no

Table 9. Sites in Allatoona Reservoir, Cobb County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
		50% disturbed				
9CO15	840	eroded, more than 50% disturbed	ridge nose	711520	3770780	no
9CO175	840	eroded	ridge slope	711730	3770870	no
9CO163	840	eroded, more than 50% disturbed	ridge nose	711480	3771250	no
9CO164	840	eroded, more than 50% disturbed	ridge nose	711630	3771240	no
9co176	840	eroded, more than 50% disturbed	flood plain	312200	3771040	no
9co177	840	eroded, more than 50% disturbed	terrace	712450	3771000	no
9co217	840	eroded, more than 50% disturbed	ridge nose	712620	3771180	no
9co221	840	eroded, more than 50% disturbed	ridge nose	712970	3771310	no
9co216	840	eroded, more than 50% disturbed	ridge nose	712540	3771350	no
9co215	840	eroded, more than 50% disturbed	terrace	712440	3771400	no
9co23	840	eroded, more than 50% disturbed	ridge knoll	711850	3771690	no
9co166	840	cultivated, more than 50% disturbed	ridge nose	711620	3771920	no
9co285	840	eroded, more than 50% disturbed	flood plain	711840	3771950	no

Table 9. Sites in Allatoona Reservoir, Cobb County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
9co209	840	eroded, more than 50% disturbed	plowzone	712120	3772260	no
9co210	840	eroded, more than 50% disturbed	plowzone	712490	3772310	no
9co213	840	eroded, more than 50% disturbed	ridge nose	712450	3772370	no
9co238	840	eroded, more than 50% disturbed	terrace	711530	3772570	no
9co167	840	eroded, more than 50% disturbed	ridge slope	711360	3772370	no
9co168	840	eroded, more than 50% disturbed	plowzone ridge slope	711270	3772320	no
9co239	840	eroded, more than 50% disturbed	terrace	711120	3772380	no
9co284	840	eroded, more than 50% disturbed	ridge nose	711830	3772750	no
9co3	840	cultivated, more than 50% disturbed	ridge nose	711880	3772800	no
9co283	840	eroded, more than 50% disturbed	terrace	711700	3772940	no
9co205	840	eroded, more than 50% disturbed	ridge nose	711020	3773000	no
9co206	840	eroded, more than 50% disturbed	ridge nose	710900	3773000	no
9co207	840	eroded, more than	terrace	710750	3772970	no

Table 9. Sites in Allatoona Reservoir, Cobb County, Georgia

Site #	Elevation ASL (ft)	Condition	Topography	East	North	NRHP eligible
		50% disturbed				

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'Day, Patrick M
Sent: Tuesday, April 23, 2019 6:13 PM
To: 'e106@achp.gov'
Subject: USACE Mobile Harbor General Reevaluation Study, invite to participate in developing a project PA
Attachments: ACHP_e106_fom_MHGRR.doc; [3_28_19_Choctaw_USACE_emails.pdf; 02122019_MOBILE HARBOR_SHPO_SIGNED LETTER_.pdf; 02122019_MOBILE HARBOR_TRIBAL_SUBJECT FILE PACKAGE_B_.pdf; Eastern_Shawnee_letter.pdf; Hunt_Muscogee_Creek_Nation_nation.pdf; Mobile GRR consultation log.xlsx; SHPO_letter_AHC2019_0557_PA_Comments.pdf; Toombs email.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

To whom it may concern,

I have attached a e106 form, supporting documentation, and a preliminary draft of the proposed PA. We would like to invite the ACHP to participate in developing and being a signatory to the proposed PA. I will attach a copy of the draft PA in an additional email. Please let me know if I can provide any additional information. Thank you,

Sincerely,

Patrick O'Day

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

From:	O"Day, Patrick M CIV USARMY CESAM (USA)
To:	Jennifer.Bedell@dnr.ga.gov; McBride, Amanda; Jennifer.Dixon@dnr.ga.gov; eric.sipes@ahc.alabama.gov; Ladart, Meredith H CIV USARMY CESAM (USA); White, Jonas CIV USARMY CESAM (USA); Hathorn, James E Jr CIV USARMY CESAM (US); Jacobson, Jennifer L CIV USARMY CESAM (US); Malsom, Michael F CIV USARMY CESAM (USA); Wiggins, Micah A CIV USARMY CESAM (US)
Subject:	Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Reservoirs Projects Water Control Manual Updates project conference call
Date:	Tuesday, June 18, 2019 2:56:00 PM

Good afternoon everyone,

I would like to thank everyone for participating in the conference call on Monday June 17, 2019, regarding cultural resources for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Reservoirs Projects Water Control Manual Updates project. Below is a brief summary of the call.

During the call I indicated to representatives of the Alabama and Georgia SHPO offices that the Corps would like to initiate consultations regarding the proposed project and summarized the purpose and nature of the proposed project. Following the agenda provided for the meeting I also provided descriptions of the project area, of how the APE will be determined, of the potential effects the project could have on cultural resources, and of the challenge of appropriately scaling cultural resource management efforts to the project. The intent to develop a programmatic agreement for the project was also discussed and I also proposed a baseline site condition assessment and post operational site inspection to study the potential impacts of the project as the primary mitigation measure. This study will seek to determine if effects of the proposed project could be differentiated from the effects of normal operations of the reservoirs. Comments from participants on information presented during the call included providing a stipulation in the PA requiring any adverse effects to properties identified during the course of the project to be mitigated and ensuring that the proposed study focus on comparing normal operations of the reservoirs versus the proposed operations of the project.

Initial tasks discussed for the project include preparing a preliminary draft of a PA and delineating the boundaries of the APE. I also indicated that I would begin working on this right away. Representatives from the Alabama SHPO also mentioned that they had worked on similar projects related to reservoirs with the Alabama Power Authority. I would like to respectfully request any information from both the Georgia and Alabama SHPO offices that could be used as a template for preparing the preliminary draft PA. I would also welcome any additional comments regarding the conference call and the proposed project. Thank you all again for your time and consideration.

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
(251)690-2326
Cell(251)604-2159

O'Day, Patrick M CIV USARMY CESAM (USA)

From:	O'Day, Patrick M CIV USARMY CESAM (USA)
Sent:	Tuesday, June 18, 2019 2:56 PM
To:	Jennifer.Bedell@dnr.ga.gov; McBride, Amanda; Jennifer.Dixon@dnr.ga.gov; eric.sipes@ahc.alabama.gov; Ladart, Meredith H CIV USARMY CESAM (USA); White, Jonas CIV USARMY CESAM (USA); Hathorn, James E Jr CIV USARMY CESAM (US); Jacobson, Jennifer L CIV USARMY CESAM (US); Malsom, Michael F CIV USARMY CESAM (USA); Wiggins, Micah A CIV USARMY CESAM (US)
Subject:	Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Reservoirs Projects Water Control Manual Updates project conference call

Good afternoon everyone,

I would like to thank everyone for participating in the conference call on Monday June 17, 2019, regarding cultural resources for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Reservoirs Projects Water Control Manual Updates project. Below is a brief summary of the call.

During the call I indicated to representatives of the Alabama and Georgia SHPO offices that the Corps would like to initiate consultations regarding the proposed project and summarized the purpose and nature of the proposed project. Following the agenda provided for the meeting I also provided descriptions of the project area, of how the APE will be determined, of the potential effects the project could have on cultural resources, and of the challenge of appropriately scaling cultural resource management efforts to the project. The intent to develop a programmatic agreement for the project was also discussed and I also proposed a baseline site condition assessment and post operational site inspection to study the potential impacts of the project as the primary mitigation measure. This study will seek to determine if effects of the proposed project could be differentiated from the effects of normal operations of the reservoirs. Comments from participants on information presented during the call included providing a stipulation in the PA requiring any adverse effects to properties identified during the course of the project to be mitigated and ensuring that the proposed study focus on comparing normal operations of the reservoirs versus the proposed operations of the project.

Initial tasks discussed for the project include preparing a preliminary draft of a PA and delineating the boundaries of the APE. I also indicated that I would begin working on this right away. Representatives from the Alabama SHPO also mentioned that they had worked on similar projects related to reservoirs with the Alabama Power Authority. I would like to respectfully request any information from both the Georgia and Alabama SHPO offices that could be used as a template for preparing the preliminary draft PA. I would also welcome any additional comments regarding the conference call and the proposed project. Thank you all again for your time and consideration.

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Ms. Jennifer Dixon
Historic Preservation Division
2610 GA Highway 155, SW
Stockbridge, Georgia 30281

Dear Ms. Dixon:

The U.S. Army Corps of Engineers, (USACE) Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama State Historic Preservation Officer.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Jennifer Jacobson

Jennifer L. Jacobson
Chief, Environment and Resources
Branch

Enclosure

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 1 8 2019

Inland Environment Team
Planning and Environmental Division

Ms. Lee Anne Wofford
Deputy State Historic Preservation Officer
Post Office Box 300900
Montgomery, Alabama 36130 0900

Dear Ms. Wofford:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level fluctuation. These include increased wet/dry cycles that accelerate the degradation

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama State Historic Preservation Officer.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Jennifer Jacobson

Jennifer L. Jacobson
Chief, Environment and Resources
Branch

Enclosure

ACR TRIBAL LETTERS (25)

1) Ms. Devon Frazier
Tribal Historic Preservation Officer
Absentee-Shawnee Tribe Oklahoma
2025 South Gordon Cooper Drive
Shawnee, Oklahoma 74801

2) Mr. Bryant J. Celestine
Tribal Historic Preservation Officer
Alabama-Coushatta Tribes of Texas
571 State Park Road 56
Livingston, Texas 77351

3) Ms. Janice Lowe
Tribal Historic Preservation Officer
Alabama-Quassarte Tribal Town
Post Office Box 187
Wetumpka, Oklahoma 74883

4) Ms. Elizabeth Toombs
Cherokee Nation, Oklahoma
Post Office Box 948
Tahlequah, Oklahoma 74465

5) Ms. Karen Brunso
Tribal Historic Preservation Officer
The Chickasaw Nation
Post Office Box 1548
Ada, Oklahoma 74821-1548

6) Mr. Russell Townsend
Tribal Historic Preservation Officer
Eastern Band of the Cherokee Nation
Post Office Box 455
Cherokee, North Carolina 28719

7) Mr. Brett Barnes
Cultural Preservation Officer
Eastern Shawnee Tribe of Oklahoma
Post Office Box350
Seneca, Missouri 64865

8) Mr. David Cook
Tribal Administrator
Kialegee Tribal Town, Oklahoma
Post Office Box 332
Wetumpka, Oklahoma 74883

9) Ms. Corain Lowe-Zepeda
Tribal Historic Preservation Officer
Muscogee (Creek) Nation
Post Office Box 580
Okmulgee, Oklahoma 74447

10) Ms. Tonya Tipton
Tribal Historic Preservation Officer
Shawnee Tribe, Oklahoma
Post Office Box 189
Miami, Oklahoma 74355

11) Ms. Sheila Bird
Tribal Historic Preservation Officer
United Keetoowah Band of Cherokee Indians in Oklahoma
Post Office Box 746
Tahlequah, Oklahoma 74465

12) Mr. Phil Cross
Tribal Historic Preservation Officer
Caddo Nation, Oklahoma
Post Office Box 487
Binger, Oklahoma 73009

13) Dr. Wenonah G. Haire
Executive Director
Catawba Indian Nation
996 Avenue of the Nations
Rock Hill, South Carolina 29730

14) Ms. Kimberly Walden
Cultural Resources Director, NAGPRA Representative
Chitimacha Tribe, Louisiana
Post Office Box 661
Charenton, Louisiana 70523

15) Dr. Ian Thompson, RPA
Director, Historic Preservation Department
Choctaw Nation of Oklahoma
Post Office Drawer 1210
Durant, Oklahoma 74701

16)Ms. Linda Langley
Tribal Historic Preservation Officer
Coushatta Tribe of Louisiana
Post Office Box 10
Elton, Louisiana 70532

17)Ms. Alina Shively
Tribal Historic Preservation Officer
Jena Band of Choctaw Indians, Louisiana
Post Office Box 14
Jena, Louisiana 71342

18)Mr. Fred Dayhoff
NAGPRA and Section 106 Representative
Miccosukee Tribe of Indians of Florida
HC 61, SR68 Old Loop Road
Ochopee, Florida 34141

19)Mr. Kenneth H. Carleton
Tribal Historic Preservation Officer
Mississippi Band of Choctaw Indians
101 Industrial Road
Philadelphia, Mississippi 39350

20)Mr. Everett Bandy
Tribal Historic Preservation Officer
Quapaw Tribe of Indians, Oklahoma
Post Office Box 765
Quapaw, Oklahoma 74363-0765

21)Mr. Thedore Isham
Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Post Office Box 1498
Wewoka, Oklahoma 74884

22)Dr. Paul Backhouse
Tribal Historic Preservation Officer
Seminole Tribe of Florida
30290 Josie Billie Highway PMB 1004
Clewiston, Florida 33440

23)Mr. Galen Cloud
Tribal Historic Preservation Officer
Thlopthlocco Tribal Town
Post Office Box 188
Okemah, Oklahoma 74859

24)Mr. Earl J. Barbry, Jr.
Tribal Historic Preservation Officer
Tunica-Biloxi Indian Tribe of Louisiana
Post Office Box 1589
Marksville, Louisiana 71351

25)Mr. Larry Haikey
Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore, Alabama 36502

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Ms. Devon Frazier
Tribal Historic Preservation Officer
Absentee-Shawnee Tribe Oklahoma
2025 South Gordon Cooper Drive
Shawnee, Oklahoma 74801

Dear Ms. Frazier:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Mr. Bryant J. Celestine
Tribal Historic Preservation Officer
Alabama-Coushatta Tribes of Texas
571 State Park Road 56
Livingston, Texas 77351

Dear Mr. Celestine:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

NOV 18 2019

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Ms. Janice Lowe
Tribal Historic Preservation Officer
Alabama-Quassarte Tribal Town
Post Office Box 187
Wetumpka, Oklahoma 74883

Dear Ms. Lowe:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

NOV 18 2019

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Ms. Elizabeth Toombs
Cherokee Nation, Oklahoma
Post Office Box 948
Tahlequah, Oklahoma 74465

Dear Ms. Toombs:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

NOV 1 8 2019

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Ms. Karen Brunso
Tribal Historic Preservation Officer
The Chickasaw Nation
Post Office Box 1548
Ada, Oklahoma 74821-1548

Dear Ms. Brunso:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Mr. Russell Townsend
Tribal Historic Preservation Officer
Eastern Band of the Cherokee Nation
Post Office Box 455
Cherokee, North Carolina 28719

Dear Mr. Townsend:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Mr. Brett Barnes
Cultural Preservation Officer
Eastern Shawnee Tribe of Oklahoma
Post Office Box 350
Seneca, Missouri 64865

Dear Mr. Barnes:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Mr. David Cook
Tribal Administrator
Kialegee Tribal Town, Oklahoma
Post Office Box 332
Wetumpka, Oklahoma 74883

Dear Mr. Cook:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Ms. Corain Lowe-Zepeda
Tribal Historic Preservation Officer
Muscogee (Creek) Nation
Post Office Box 580
Okmulgee, Oklahoma 74447

Dear Ms. Lowe-Zepeda:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 1 8 2019

Inland Environment Team
Planning and Environmental Division

Ms. Tonya Tipton
Tribal Historic Preservation Officer
Shawnee Tribe, Oklahoma
Post Office Box 189
Miami, Oklahoma 74355

Dear Ms. Tipton:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Ms. Sheila Bird
Tribal Historic Preservation Officer
United Keetoowah Band of Cherokee Indians in Oklahoma
Post Office Box 746
Tahlequah, Oklahoma 74465

Dear Ms. Bird:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Mr. Phil Cross
Tribal Historic Preservation Officer
Caddo Nation, Oklahoma
Post Office Box 487
Binger, Oklahoma 73009

Dear Mr. Cross:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

NOV 18 2019

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Dr. Wenonah G. Haire
Executive Director
Catawba Indian Nation
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Dear Dr. Haire:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

NOV 18 2019

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Ms. Kimberly Walden
Cultural Resources Director, NAGPRA Representative
Chitimacha Tribe, Louisiana
Post Office Box 661
Charenton, Louisiana 70523

Dear Ms. Walden:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

NOV 18 2019

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Dr. Ian Thompson, RPA
Director, Historic Preservation Department
Choctaw Nation of Oklahoma
Post Office Drawer 1210
Durant, Oklahoma 74701

Dear Dr. Thompson:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Ms. Linda Langley
Tribal Historic Preservation Officer
Coushatta Tribe of Louisiana
Post Office Box 10
Elton, Louisiana 70532

Dear Ms. Langley:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

NOV 18 2019

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Ms. Alina Shively
Tribal Historic Preservation Officer
Jena Band of Choctaw Indians, Louisiana
Post Office Box 14
Jena, Louisiana 71342

Dear Ms. Shively:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Mr. Fred Dayhoff
NAGPRA and Section 106 Representative
Miccosukee Tribe of Indians of Florida
HC 61, SR68 Old Loop Road
Ochopee, Florida 34141

Dear Mr. Dayhoff:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

NOV 18 2019

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Mr. Kenneth H. Carleton
Tribal Historic Preservation Officer
Mississippi Band of Choctaw Indians
101 Industrial Road
Philadelphia, Mississippi 39350

Dear Mr. Carleton:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

NOV 18 2019

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Mr. Everett Bandy
Tribal Historic Preservation Officer
Quapaw Tribe of Indians, Oklahoma
Post Office Box 765
Quapaw, Oklahoma 74363-0765

Dear Mr. Bandy:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Mr. Thedore Isham
Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Post Office Box 1498
Wewoka, Oklahoma 74884

Dear Mr. Isham:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001
NOV 18 2019

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Dr. Paul Backhouse
Tribal Historic Preservation Officer
Seminole Tribe of Florida
30290 Josie Billie Highway PMB 1004
Clewiston, Florida 33440

Dear Dr. Backhouse:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Mr. Galen Cloud
Tribal Historic Preservation Officer
Thlopthlocco Tribal Town
Post Office Box 188
Okemah, Oklahoma 74859

Dear Mr. Cloud:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

NOV 18 2019

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Mr. Earl J. Barbry, Jr.
Tribal Historic Preservation Officer
Tunica-Biloxi Indian Tribe of Louisiana
Post Office Box 1589
Marksville, Louisiana 71351

Dear Mr. Barbry, Jr.:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

NOV 18 2019

Inland Environment Team
Planning and Environmental Division

Mr. Larry Haikey
Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore, Alabama 36502

Dear Mr. Haikey:

The U.S. Army Corps of Engineers (USACE), Mobile District is writing to continue consultation for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Water Control Manual (WCM) Updates Project (Project) to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106; 54 USC 306108). The Project covers an expansive area and the effects of the undertaking on historic properties cannot be fully determined prior to Project approval. Therefore, USACE, Mobile District plans to delineate the Area of Potential Effect (APE) by comparing hypothetical operations of the proposed Project to existing operations and intends to develop a Programmatic Agreement (PA) to govern the resolution of any adverse effects of the undertaking pursuant to 36 CFR § 800.14(b)(1)(ii). Authorization for the Project is provided in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996.

The proposed water supply storage reallocation for Allatoona Reservoir will reduce water shortages and the WCM updates for Weiss and Logan and Martin reservoirs will maintain acceptable levels of flood risk for Alabama-Coosa-Tallapoosa River Basin projects. The Project comprises operational changes that will modify the way flows out of Weiss, Logan Martin, and Allatoona reservoirs are controlled from the existing operation. This will result in variations in flood control storage levels at the three subject reservoirs and increased surcharge releases, from 50,000 to 70,000 cubic feet per second, from Weiss and Logan Martin dams. Specifically, Weiss Reservoir's winter levels will increase from 558 to 561 feet (ft) elevation and summer levels will decrease from 574 to 572 ft elevation, Logan Martin winter levels will increase from 460 to 462 ft and summer levels will decrease from 574 to 572 ft elevation, and summer levels at Allatoona will increase from 840 to 841 ft and winter levels will increase from 823 to 824.5 ft elevation. Historic properties located on these elevation contours within the reservoirs could be impacted by processes related to water level fluctuations and properties located along the river banks below Weiss and Logan Martin dams could also be affected by larger surcharge releases.

Unlike natural lakes where water levels are comparatively stable, and where inundated archaeological sites are less common, cultural resources located within the drawdown zone of a reservoir pool are subject to considerable impacts, largely as a result of reservoir level

fluctuation. These include increased wet/dry cycles that accelerate the degradation of archaeological features and materials, increased exposure to wave action that erodes reservoir shorelines, and the more frequent exposure of inundated sites that can increase instances of looting and vandalism. While impacts from reservoir operations on archaeological sites are well understood, it is currently unclear if effects of the proposed Project will be discernable from the effects of existing operations.

The Project encompasses a 280-mile section of the Coosa River from Rome, Georgia to the Coosa River's confluence with the Tallapoosa River near Montgomery, Alabama, a 79-mile stretch of the Etowah River between Canton and Rome, Georgia, and portions of Weiss, Logan Martin, and Allatoona reservoirs. Based on the extremely large project area and ambiguity in differentiating the effects of current operations from the effects of the Project, USACE, Mobile District proposes to define the Project's APE by comparing the frequency of wet/dry cycles under existing operations to frequencies of wet/dry cycles during hypothetical operations of the proposed Project. Since the proposed Project would directly affect operations of the reservoirs by changing flood control levels, and therefore reservoir levels, determining the reservoir pool portions of the APE will involve identifying elevations within the reservoirs where frequencies of wetting/drying cycles increase under proposed operations relative to current flood control levels. Delineating downstream portions of the APE below Weiss and Logan Martin reservoirs will involve identifying areas vulnerable to stream bank erosion from the larger surcharge releases under the proposed Project.

USACE, Mobile District is committed to making every effort to invite all parties with an interest in the Project and those agencies with responsibilities under Section 106 of the NHPA to participate in the development of a PA. We have enclosed a draft PA with this letter to initiate the development of the agreement. The draft PA has also been sent to the other Federally Recognized Tribes and to the Alabama and Georgia State Historic Preservation Officers.

We respectfully request any comments you may have on how we are proposing to delineate the APE and on the draft PA for the Project. Please send any comments and questions regarding the Project to a district archaeologist, Dr. Patrick O'Day at (251) 690-2326 or Patrick.M.O'Day@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

From:	McBride, Amanda
To:	O"Day, Patrick M CIV USARMY CESAM (USA)
Subject:	[Non-DoD Source] RE: Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Reservoirs Projects Water Control Manual Updates project conference call
Date:	Thursday, December 19, 2019 3:15:36 PM

Patrick,

We have completed our review of the draft PA for the above-referenced project and offer the following comments:

Please state in the PA that the Alabama burial law will be followed in the event that human remains are discovered. As you are aware, non-Native American remains may be discovered within the APE.

Thanks and Merry Christmas!

Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
Blockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'Day, Patrick M CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Tuesday, June 18, 2019 2:56 PM
To: Jennifer.Bedell@dnr.ga.gov; McBride, Amanda <Amanda.McBride@ahc.alabama.gov>; Jennifer.Dixon@dnr.ga.gov; Sipes, Eric <Eric.Sipes@ahc.alabama.gov>; Ladart, Meredith H CIV USARMY CESAM (USA) <Meredith.H.LaDart@usace.army.mil>; White, Jonas CIV USARMY CESAM (USA) <Jonas.White@usace.army.mil>; Hathorn, James E Jr CIV USARMY CESAM (US) <James.E.Hathorn.Jr@usace.army.mil>; Jacobson, Jennifer L CIV USARMY CESAM (US) <Jennifer.L.Jacobson@usace.army.mil>; Malsom, Michael F CIV USARMY CESAM (USA) <Michael.F.Malsom@usace.army.mil>; Wiggins, Micah A CIV USARMY CESAM (US) <Micah.A.Wiggins@usace.army.mil>
Subject: Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Reservoirs Projects Water Control Manual Updates project conference call

Good afternoon everyone,

I would like to thank everyone for participating in the conference call on Monday June 17, 2019, regarding cultural resources for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Reservoirs Projects Water Control Manual Updates project. Below is a brief summary of the call.

During the call I indicated to representatives of the Alabama and Georgia SHPO offices that the Corps would like to initiate consultations regarding the proposed project and summarized the purpose and nature of the proposed project. Following the agenda provided for the meeting I also provided descriptions of the project area, of how the APE will be determined, of the potential effects the project could have on cultural resources, and of the challenge of appropriately scaling cultural resource management efforts to the project. The intent to develop a programmatic agreement for the project was also discussed and I also proposed a baseline site condition assessment and post operational site inspection to study the potential impacts of the project as the primary mitigation measure. This study will seek to determine if effects of the proposed project could be differentiated from the effects of normal operations of the reservoirs. Comments from participants on information presented during the call included providing a stipulation in the PA requiring any adverse effects to properties identified during the course of the project to be mitigated and ensuring that the proposed study focus on comparing normal operations of the reservoirs versus the proposed operations of the project.

Initial tasks discussed for the project include preparing a preliminary draft of a PA and delineating the boundaries of the APE. I also indicated that I would begin working on this right away. Representatives from the Alabama SHPO also mentioned that they had worked on similar projects related to reservoirs with the Alabama Power Authority. I would like to respectfully request any information from both the Georgia and Alabama SHPO offices that could be used as a template for preparing the preliminary draft PA. I would also welcome any additional comments regarding the conference call and the proposed project. Thank you all again for your time and consideration.

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
(251)690-2326
Cell(251)604-2159

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

December 16, 2019

Attention: Curtis M. Flakes
Department of the Army – Mobile District
P.O. Box 2288
Mobile, AL 36628-0001

Re. THPO #	SAC #	Project Description
2020-134-1		Draft FR and Integrated SEIS for the Allatoona Lake Water Supply Storage Rellocation Study and Updates to Weiss and Logan Martin Reservoirs Water Control Manuals

Dear Mr. Flakes,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

Sincerely,

Caitlin Rogers for

Wenonah G. Haire
Tribal Historic Preservation Officer

From:	McBride, Amanda
To:	O"Day, Patrick M CIV USARMY CESAM (USA)
Subject:	[Non-DoD Source] RE: Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Reservoirs Projects Water Control Manual Updates project conference call
Date:	Thursday, December 19, 2019 3:15:36 PM

Patrick,

We have completed our review of the draft PA for the above-referenced project and offer the following comments:

Please state in the PA that the Alabama burial law will be followed in the event that human remains are discovered. As you are aware, non-Native American remains may be discovered within the APE.

Thanks and Merry Christmas!

Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
Blockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'Day, Patrick M CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Tuesday, June 18, 2019 2:56 PM
To: Jennifer.Bedell@dnr.ga.gov; McBride, Amanda <Amanda.McBride@ahc.alabama.gov>; Jennifer.Dixon@dnr.ga.gov; Sipes, Eric <Eric.Sipes@ahc.alabama.gov>; Ladart, Meredith H CIV USARMY CESAM (USA) <Meredith.H.LaDart@usace.army.mil>; White, Jonas CIV USARMY CESAM (USA) <Jonas.White@usace.army.mil>; Hathorn, James E Jr CIV USARMY CESAM (US) <James.E.Hathorn.Jr@usace.army.mil>; Jacobson, Jennifer L CIV USARMY CESAM (US) <Jennifer.L.Jacobson@usace.army.mil>; Malsom, Michael F CIV USARMY CESAM (USA) <Michael.F.Malsom@usace.army.mil>; Wiggins, Micah A CIV USARMY CESAM (US) <Micah.A.Wiggins@usace.army.mil>
Subject: Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Reservoirs Projects Water Control Manual Updates project conference call

Good afternoon everyone,

I would like to thank everyone for participating in the conference call on Monday June 17, 2019, regarding cultural resources for the Allatoona Water Supply Storage Reallocation Study and Weiss and Logan Martin Reservoirs Projects Water Control Manual Updates project. Below is a brief summary of the call.

During the call I indicated to representatives of the Alabama and Georgia SHPO offices that the Corps would like to initiate consultations regarding the proposed project and summarized the purpose and nature of the proposed project. Following the agenda provided for the meeting I also provided descriptions of the project area, of how the APE will be determined, of the potential effects the project could have on cultural resources, and of the challenge of appropriately scaling cultural resource management efforts to the project. The intent to develop a programmatic agreement for the project was also discussed and I also proposed a baseline site condition assessment and post operational site inspection to study the potential impacts of the project as the primary mitigation measure. This study will seek to determine if effects of the proposed project could be differentiated from the effects of normal operations of the reservoirs. Comments from participants on information presented during the call included providing a stipulation in the PA requiring any adverse effects to properties identified during the course of the project to be mitigated and ensuring that the proposed study focus on comparing normal operations of the reservoirs versus the proposed operations of the project.

Initial tasks discussed for the project include preparing a preliminary draft of a PA and delineating the boundaries of the APE. I also indicated that I would begin working on this right away. Representatives from the Alabama SHPO also mentioned that they had worked on similar projects related to reservoirs with the Alabama Power Authority. I would like to respectfully request any information from both the Georgia and Alabama SHPO offices that could be used as a template for preparing the preliminary draft PA. I would also welcome any additional comments regarding the conference call and the proposed project. Thank you all again for your time and consideration.

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
(251)690-2326
Cell(251)604-2159

O'Day, Patrick M CIV USARMY CESAM (USA)

From: Lindsey Bilyeu <lbilyeu@choctawnation.com>
Sent: Tuesday, February 18, 2020 9:14 AM
To: O'Day, Patrick M CIV USARMY CESAM (USA)
Subject: RE: [Non-DoD Source] RE: Draft Feasibility Report and SEIS for the Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Water Control Manuals

Good Morning,

The Choctaw Nation of Oklahoma thanks you for providing the additional information. This project lies outside of our area of historic interest. The Choctaw Nation Historic Preservation Department respectfully defers to the other Tribes that have been contacted.

If you have any questions, please contact me.

Thank you,

Lindsey D. Bilyeu, MS
Senior Compliance Review Officer
Historic Preservation Department
Choctaw Nation of Oklahoma
P.O. Box 1210
Durant, OK 74702
580-924-8280 ext. 2631

-----Original Message-----
From: O'Day, Patrick M CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Friday, January 17, 2020 11:13 AM
To: Lindsey Bilyeu <lbilyeu@choctawnation.com>
Cc: White, Jonas CIV USARMY CESAM (USA) <Jonas.White@usace.army.mil>
Subject: RE: [Non-DoD Source] RE: Draft Feasibility Report and SEIS for the Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Water Control Manuals

Dear Lindsey,

As per your request below I have provided GIS shapefiles of the Lake Allatoona water supply reallocation and Weiss and Logan Martin WCM update project area. Please let me know if you need any more information or if you have any trouble opening the files. Thank you,

Sincerely,

Patrick O'Day

-----Original Message-----
From: White, Jonas CIV USARMY CESAM (USA)
Sent: Tuesday, December 31, 2019 11:35 AM
To: Lindsey Bilyeu <lbilyeu@choctawnation.com>
Cc: O'Day, Patrick M CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: RE: [Non-DoD Source] RE: Draft Feasibility Report and SEIS for the Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Water Control Manuals

Lindsey,

This message is to confirm the receipt of your request. We will begin working on the requested data as soon as possible.

Thanks,

Jonas White
Plan Formulation Team
U.S. Army Corps of Engineers, Mobile District
(251) 690-2243 (work)
(251) 508-6592 (mobile)

-----Original Message-----
From: Lindsey Bilyeu [mailto:lbilyeu@choctawnation.com]
Sent: Monday, December 23, 2019 10:49 AM
To: ACT-ACR <ACT-ACR@usace.army.mil>
Subject: [Non-DoD Source] RE: Draft Feasibility Report and SEIS for the Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Water Control Manuals

Good Morning,

The Choctaw Nation of Oklahoma thanks the USACE, Mobile District, for the correspondence regarding the above referenced project. The Choctaw Nation Historic Preservation Department requests the GIS shapefiles of the project area so that we can determine if the project lies in our area of historic interest.

If you have any questions, please contact me.

Thank you,

Lindsey D. Bilyeu, MS

Senior Compliance Review Officer

Historic Preservation Department

Choctaw Nation of Oklahoma

P.O. Box 1210

Durant, OK 74702

580-924-8280 ext. 2631

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure. If you have received this message in error, you are hereby notified that we do not consent to any reading, dissemination, distribution or copying of this message. If you have received this communication in error, please notify the sender immediately and destroy the transmitted information. Please note that any view or opinions presented in this email are solely those of the author and do not necessarily represent those of the Choctaw Nation.

June 23, 2020

Jennifer L. Jacobson
Chief, Environment and Resources Branch
Mobile District USACE
P.O. Box 2288
Mobile, AL 36628-0001

Ref: *Proposed Allatoona Lake Water Supply Storage Reallocation Study*
Alabama and Georgia

Dear Ms. Jacobson:

The Advisory Council on Historic Preservation (ACHP) has received your notification and supporting documentation regarding the adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and it is determined that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Alabama and Georgia State Historic Preservation Office (SHPO), and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA, and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with the notification of adverse effect. If you have any questions or require further assistance, please contact Mr. Christopher Daniel at 202-517-0223 or via e-mail at cdaniel@achp.gov.

Sincerely,

Artisha Thompson
Historic Preservation Technician
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
401 F Street NW, Suite 308 • Washington, DC 20001-2637
Phone: 202-517-0200 • Fax: 202-517-6381 • achp@achp.gov • www.achp.gov

Preserving America's Heritage

Advisory Council on Historic Preservation
Electronic Section 106 Documentation Submittal System (*e*106) Form
MS Word format

Send to: *e106@achp.gov*

I. Basic information

1. **Name of federal agency** (If multiple agencies, state them all and indicate whether one is the lead agency):

The U.S. Army Corps of Engineers, Mobile District (USACE)

2. **Name of undertaking/project** (Include project/permit/application number if applicable):

The Allatoona Reservoir Water Supply Reallocation Study and Logan Martin and Weiss and Water Control Manuals Update Project.

3. **Location of undertaking** (Indicate city(s), county(s), state(s), land ownership, and whether it would occur on or affect historic properties located on tribal lands):

In Georgia, the undertaking will occur within the Allatoona Reservoir (owned by the USACE), and along a section of the Etowah River extending from the Allatoona Dam to the city of Rome, Georgia, and along a portion of the Coosa River from Rome Georgia to the Weiss Reservoir in Alabama. Within the Alabama, the undertaking will occur within Logan Martin and Weiss reservoirs (owned by the Alabama Power Company (APC)) and along sections of the Coosa River flowing from Logan Martin Dam and from Weiss Dam. None of the undertaking occur or effect historic properties on tribal lands.

4. **Name and title of federal agency official and contact person for this undertaking**, including email address and phone number:

Patrick O'Day, Archaeologist, Army Corps of Engineers, Mobile District, Planning Division.
Email: Patrick.M.O'Day@usace.army.mil
109 St. Joseph Street, Mobile Alabama, 36602
Phone: (251) 690-2326

5. **Purpose of notification.** Indicate whether this documentation is to:

To inform the ACHP that the Mobile District has reached a determination of potential adverse effect with the intent to develop a Programmatic Agreement (PA) for complex or multiple undertakings in accordance with 36 C.F.R. 800.14(b)(3). The Mobile District would also like to invite the ACHP to participate in Section 106 consultations for the undertaking and participate in the development of the PA.

II. Information on the Undertaking*

6. Describe the undertaking and nature of federal involvement (if multiple federal agencies are involved, specify involvement of each):

The project is a water supply reallocation study of Allatoona Reservoir and updates to Weiss and Logan and Martin Water Control Manuals (WCM), is authorized in Section 201(a) of the Water Resources Development Act (WRDA) of 1986, as amended by Section 302 of the WRDA of 1996 and is being developed to reduce the risk of water supply shortages for Allatoona Reservoir users through the year 2050 and to maintain acceptable levels of flood risk within the Alabama **-** Coosa – Tallapoosa (ACT) River Basin Projects. The undertaking will involve operational changes to the existing reservoirs which will lead to fluctuations in reservoir water levels during the summer and winter and will potentially result in increased water flows from Allatoona Dam and Weiss Dam.

The USACE is the lead Federal Agency for the Undertaking and owns and maintains the Allatoona Dam and Reservoir Project.

The Alabama Power Company (APC) owns and operates the Logan Martin and Weiss Dams and Reservoirs for a range of non-federal purposes. The APC will implement the WCM updates for Weiss and Logan and Martin reservoirs and has been invited to be a Concurring Party to the PA.

7. Describe the Area of Potential Effects:

The Area of Potential Effect (APE) includes portions of the three reservoirs (Allatoona, Logan Martin, and Weiss) defined by topographic elevation contours at which changes in seasonal storage and flood control water levels could occur as a result of the proposed reallocation and WCM updates and along sections of the Etowah and Coosa rivers below the Allatoona, Logan Martin, and Weiss dams where increased water releases could occur for the proposed undertaking.

The specific topographic elevation contours that will define APE boundaries within the reservoirs include:

- Allatoona Reservoir: Summer water levels will increase from 840 feet elevation under current operations to 841 feet under proposed operations. Winter water levels will increase from 823 feet under current operations to 824.5 feet elevation under proposed operations.

- Logan Martin Reservoir: Winter water levels will increase from 460 feet elevation under current operations to 462 feet under proposed operations. Summer water levels will decrease from 477 feet under current operations to 473.5 feet elevation under proposed operations.

- Weiss Reservoir: Winter water levels will increase from 558 feet under current operations to 561 feet under proposed operations. Summer water levels will decrease from 574 feet under current operations to 572 feet elevation under proposed operations.

In addition to variations in flood control storage levels at the three subject reservoirs, increased surcharge releases from 50,000 to 70,000 cubic feet per second will occur at Logan Martin and Weiss dams. Therefore, downstream portions of the APE include sections of the Coosa River below these dams. The downstream effects of the undertaking below the Allatoona Dam is currently unknown, therefore the section of the Etowah River from the Allatoona Dam to Rome, Georgia is also included within the APE. Maps of the APE are included with the enclosed documents.

8. Describe steps taken to identify historic properties:

Archival research on reports from the Mobile District's library and a review of Georgia and Alabama State site files and maps.

9. **Describe the historic property** (or properties) and any National Historic Landmarks within the APE (or attach documentation or provide specific link to this information):

The table below provides the number of sites that have been previously identified with the APE. Descriptions and locations of these sites were recorded during preliminary online background research on Alabama and Georgia state site files at:

Georgia SHPO:
https://www.gnahrgis.org/gnahrgis/index.do;jsessionid=3FD76BE9FA7848416C28E3D9E52C4660.tomcat02

Alabama SHPO:
Site Maps
https://oargeoserver1.ua.edu/portal/apps/webappviewer/index.html?id=5cf8ec8450484851b93609c824b19f4a
Site Cards
https://appserver.oas.ua.edu/assf/Login.jsp

As summarized in the Table, a total of 675 sites, including 29 NRHP eligible sites, have been identified during numerous surveys. These include a wide range of pre-European Contact Native American middens, artifact scatters, and mounds to various historic period structures and artifact scatters.

Summary Table of Number Sites Within APE

APE Section	NRHP Eligible	Not Eligible	Eligibility Unknown	Total Sites
Allatoona Reservoir	3	236	110	349
Logan Martin Reservoir	15	56	17	88
Weiss Reservoir	10	70	101	181
Coosa River from Weiss Dam	1	4	52	57
Totals	29	366	280	675

10. Describe the undertaking's effects on historic properties:

Impacts to sites within reservoirs from current operations include mechanical biochemical, human, and other miscellaneous impacts. Mechanical impacts include erosion and the deposition sediments from wave action along vertically fluctuating shorelines, the saturation and slumping of sediments along the shoreline, and siltation from backshore runoff. Biochemical impacts include the increased degradation of archaeological artifacts, materials, and cultural deposit soils from periodic inundation. Human impacts consist of wave action from boat traffic and the exposure of sites that are normally inundated to vandalism and looting. Other miscellaneous impacts include changes in the composition of flora and fauna and loss of access to an impacted cultural resource's data. While these impacts would will likely continue without the proposed project, the proposed project could increase or decrease the intensity of these impacts or change the location at where these impacts occur.

One potential impact upon sites situated along river banks below dams includes erosion from channel widening.

11. Explain how this undertaking would adversely affect historic properties (include information on any conditions or future actions known to date to avoid, minimize, or mitigate adverse effects):

It is currently unknown if effects of the proposed project can be differentiated from the ongoing impacts of ongoing operations of the subject reservoirs and dams. However, the impacts of the proposed project upon historic properties could include one, or a combination of multiple, effects listed for Question 10 above.

12. Provide copies or summaries of the views provided to date by any consulting parties, Indian tribes or Native Hawai'ian organizations, or the public, including any correspondence from the SHPO and/or THPO.

In a letter dated 18 November 2019, the Corps has invited the following Federally Recognized Tribes to consult on the project and participate in the development of the project's PA. A preliminary draft of the PA enclosed with this letter and was sent to the Absentee-Shawnee Tribe of Oklahoma, the Alabama-Coushatta Tribes of Texas, the Alabama-Quassarte Tribal Town, the Caddo Nation of Oklahoma, the Catawba Indian Nation, the Cherokee Nation, the Chickasaw Nation, the Chitimacha Tribe of Louisiana, the Choctaw Nation of Oklahoma, The Coushatta Tribe of Louisiana, Eastern Band of the Cherokee Nation, the Eastern Shawnee Tribe of Oklahoma, the Jena Band of Choctaw Indians of Louisiana, the Kialegee Tribal Town of Oklahoma, the Miccosukee Tribe of Indians of Florida, the Mississippi Band of Choctaw Indians, Muscogee (Creek) Nation, the Poarch Band of Creek Indians, the Quapaw Tribe of Indians of Oklahoma, Shawnee Tribe of Oklahoma, the Seminole Nation of Oklahoma, the Seminole Tribe of Florida, the Thlopthlocco Tribal Town, Tunica-Biloxi Indian Tribe of Louisiana, and the United Keetoowah Band of Cherokee Indians in Oklahoma.

We have received written and email comments from the Chickasaw Nation, the Choctaw Nation of Oklahoma, and the Catawba Indian Nation. Summaries of the comments provided by these Tribes with responses are provided below.

On 19 November, 2019 Ms. Autumn Gorrell from the Chickasaw Nation indicated that they had received a letter from the USACE regarding the Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Water Control Manuals and specified that the project is outside of the Tribe's area of interest.

Ms. Wenonah G. Haire, Tribal Historic Preservation Officer, from the Catawba Indian Nation, indicated in a letter dated 23 December 2019 that the Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.

In an email dated 23 December 2019, Ms. Lindsey Bilyeu, Senior Compliance Review Officer form the Choctaw Nation of Oklahoma stated that the Choctaw Nation of Oklahoma thanks the USACE, Mobile District, for the correspondence regarding the above referenced project. The Choctaw Nation Historic Preservation Department requests the GIS shapefiles of the project area so that we can determine if the project lies in our area of historic interest. In an email on 17 January 2020, Patrick O'Day from the USACE, Mobile District provided GIS shapefiles of the Lake Allatoona water supply reallocation and Weiss and Logan Martin WCM update project area to Ms. Lindsey Bilyeu from the Choctaw Nation. Ms. Bilyeu responded in an email dated 18 January 2020, that the project lies outside of our area of historic interest, and the Choctaw Nation Historic Preservation Department respectfully defers to the other Tribes that have been contacted.

III. Optional Information

13. Please indicate the status of any consultation that has occurred to date. Are there any consulting parties involved other than the SHPO/THPO? Are there any outstanding or unresolved concerns or issues that the ACHP should know about in deciding whether to participate in consultation?

The Corps is committed to making every effort to invite all parties with an interest in the project and those agencies with responsibilities under Section 106 of the National Historic Preservation Act (NHPA) to participate in the development of the project’s PA. Completed consultations include a conference call conducted on 17 June 2019, during which the USACE, Mobile District indicated to the representatives of the Alabama and Georgia SHPO offices that the Corps would like to initiate consultations regarding the proposed project and summarized the purpose and nature of the proposed project. Following the agenda provided for the meeting, descriptions of the project area, of how the APE will be determined, of the potential effects the project could have on cultural resources, and of the challenge of appropriately scaling cultural resource management efforts to the project were discussed. The intent to develop a PA for the project was also discussed along with a proposal to conduct a baseline site condition assessment and post operational site inspection to study the potential impacts of the project as the primary mitigation measure. This study will seek to determine if effects of the proposed project could be differentiated from the effects of normal operations of the reservoirs. Comments from participants on information presented during the call included providing a stipulation in the PA requiring any adverse effects to properties identified during the course of the project to be mitigated and ensuring that the proposed study focus on comparing normal operations of the reservoirs versus the proposed operations of the project.

In a letters dated 18 November 2019, the Corps provided the Alabama and Georgia State SHPOs a copy of the preliminary draft of the project’s PA along with the Tribes listed for question 12 above.

On 12 December 2019 Ms. Amanda McBride from the Alabama Historical Commission provided a comment on the Draft PA. This comment requested that the PA that state Alabama burial law will be followed in the event that human remains are discovered. Ms. McBride also indicated that non-Native American remains may also be discovered within the APE.

On December 20, 2019, Ms. Jennifer Dixon provided comments on the draft PA in a word document. These comments were extensive and we are still in the process of addressing them. A copy of this PA with the Georgia SHPO’s comments has been enclosed with this form for you review.

Currently, there are no outstanding or unresolved concerns or issues with the project. As soon as the Comments provided by the Alabama and Georgia SHPO's have been addressed a second draft PA will be circulated to the SHPO's and interested Tribes for review and comment.

14. Does your agency have a website or website link where the interested public can find out about this project and/or provide comments? Please provide relevant links:

https://www.sam.usace.army.mil/Missions/Planning-Environmental/Allatoona-Lake-Water-Supply-Storage-Reallocation-Study-and-Updates-to-Weiss-and-Logan-Martin-Reservoirs-Project-Water-Control-Manuals/

15. Is this undertaking considered a "major" or "covered" project listed on the Federal Infrastructure Projects Permitting Dashboard or other federal interagency project tracking system? If so, please provide the link or reference number:

The following are attached to this form (check all that apply):

_X_ Section 106 consultation correspondence

_X_ Maps, photographs, drawings, and/or plans

_X_ Additional historic property information

_X_ Other: A preliminary draft of the proposed PA.

From:	O"Day, Patrick M CIV USARMY CESAM (USA)
To:	e106@achp.gov
Subject:	USACE, Mobile District, Allatoona Reservoir Water Supply Reallocation Study and Logan Martin and Weiss and Water Control Manuals Update Project
Date:	Wednesday, February 26, 2020 12:33:00 PM
Attachments:	ACHP_e106_fom_ACR.doc Attached Documents.7z

To whom it may concern,

I have attached an e106 for the Allatoona Reservoir Water Supply Reallocation Study and Logan Martin and Weiss and Water Control Manuals Update Project along with attached documents. Please let me know if you require any additional information. Thank You,

Sincerely,

Patrick O'Day

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
(251)690-2326
Cell(251)604-2159

October 22, 2020

Dr. Partick O'Day, Archaeologist
United States Department of the Army
Corps of Engineers
Mobile District
Planning & Inland Environmental Division
Clifford Davis Federal Building
109 St. Joseph Street
Mobile, AL 36602

Dear Dr. O'Day:

Thank you for the letter of notification regarding the proposed Programmatic Agreement for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoir Water Control Manual in the states of Georgia and Alabama.

The proposed project is outside of our area of interest at this time. Therefore, we do not request government-to-government consultation with the United States Army Corps of Engineers. While the Chickasaw Nation has no objection to the programmatic agreement, we respectfully defer to the federally-recognized First American tribe(s) who have identified a connection to this project area.

Your efforts to preserve and protect significant historic properties are appreciated. If you have any questions, please contact Ms. Karen Brunso, tribal historic preservation officer, at karen.brunso@chickasaw.net.

Sincerely,

Lisa John, Secretary
Department of Culture and Humanities

cc: Patrick.M.O'Day@usace.army.mil

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, May 8, 2020 2:41 PM
To:	ammcvica@southernco.com; ammcvica@southernco.com
Subject:	Allatoona Reallocation and Weiss and Logan Martin WCM Updates
Attachments:	ACR_PA_DRAFT.docx; ACR plate 1.pdf; ACR project area map plate 2.pdf

Dear Ashley and William,

Thank you for calling in, It was great to talk to you this afternoon. I really regret not getting a hold of you earlier during the course of this project. I have attached a draft of the PA for you and look forward to your comments. I have sent this out to the Tribes, Alabama and Georgia SHPOs, and the ACHP. I am sure you will have some questions,

Please have a good weekend,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, June 10, 2020 10:12 AM
To: Gardner, William S.; McVicar, Ashley M
Subject: RE: PA - Coosa River Hydroelectric Project No. 2165-022
Attachments: ACR_PA_DRAFT_11_13_19.docx

Dear William and Ashley,

Thank you and I am sorry I have not got back to you yet. I have attached GA SHPO's comments on the PA which will have major revisions based our call last week.

I will get you a list of parameters for identifying sites for the study today.

Patrick

-----Original Message-----
From: Gardner, William S. [mailto:WSGARDNE@southernco.com]
Sent: Wednesday, June 10, 2020 8:30 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Cc: McVicar, Ashley M <AMMcVica@southernco.com>
Subject: [Non-DoD Source] PA - Coosa River Hydroelectric Project No. 2165-022

Patrick - Per your request, attached is the referenced PA. If you have questions, please contact me. The HPMP will be sent in a separate email.

Bill

Bill Gardner
Alabama Power Company
Environmental Affairs
205 288 0067
Wsgardne@southernco.com

Get Outlook for iOS <Blockedhttps://aka.ms/o0ukef> ________________________________

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Thursday, May 21, 2020 12:20:49 PM
To: McVicar, Ashley M <AMMcVica@southernco.com>
Subject: Fwd: Coosa PA

Here is the PA.
Get Outlook for iOS <Blockedhttps://aka.ms/o0ukef> ________________________________

From: Amanda Fleming <Amanda.Fleming@KleinschmidtGroup.com>
Sent: Tuesday, May 12, 2020 10:03:23 AM
To: Gardner, William S. <WSGARDNE@southernco.com>
Subject: Coosa PA

EXTERNAL MAIL: Caution Opening Links or Files

____

Amanda H. Fleming

Regulatory Coordinator

Office: 205-588-4612

Cell: 205-218-8133

Blockedwww.KleinschmidtGroup.com

Providing practical solutions for complex problems affecting energy, water, and the environment

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, June 10, 2020 10:40 AM
To: Dixon, Jennifer
Subject: RE: Allatoona Water Supply Storage Reallocation Study, Etowah and Coosa Rivers, Bartow Co, HP 190610-029

Good morning Jennifer,

I just wanted to give you an update on the PA for the ACR project. I am still working on a revision to the first draft that will address your comments and with comments provided by the Alabama Power Company Archaeologists. Could I call you to discuss this more. Please let me know of a good time and the best number to contact you.

Thanks,

Patrick

-----Original Message-----
From: Dixon, Jennifer [mailto:Jennifer.Dixon@dnr.ga.gov]
Sent: Friday, December 20, 2019 2:13 PM
To: O'Day, Patrick M CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Allatoona Water Supply Storage Reallocation Study, Etowah and Coosa Rivers, Bartow Co, HP 190610-029

Patrick,

Attached are our office's comments/recommended edits regarding the PA and APE for the subject project.

Please let us know if you have any questions. Thanks and Happy Holidays!

Jennifer Dixon, MHP, NCIDQ

LEED Green Associate

Program Manager

Environmental Review & Preservation Planning

Historic Preservation Division <Blockedhttp://georgiashpo.org/>

(770) 389-7851 | F: (770) 389-7878

2610 Georgia Highway 155 SW

Stockbridge, Georgia 30281

Facebook <Blockedhttps://www.facebook.com/georgiashpo> • Twitter <Blockedhttps://twitter.com/georgiashpo> •
Instagram <Blockedhttps://www.instagram.com/georgiahpd/>
Purchase your Historic Preservation license plate today! <Blockedhttp://georgiashpo.org/support>
——————————————————
A division of the
GEORGIA DEPARTMENT OF NATURAL RESOURCES

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:01 AM
To: Gardner, William S.; McVicar, Ashley M
Subject: Revised ACR PA
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx

Good morning Bill and Ashley,

I hope you Both had a great weekend!

I have attached the revised PA for ACR. Sorry I could not get it to you sooner, I had a few distractions pop up last week.

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual updates for Logan Martin and Weiss it is more limited in scope than a construction project and it will be extremely difficult to fund any cultural resources management work after the reallocation or WCMs are implemented. I think appending information to or eventually updating project HPMPs or ICRMPs to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of projects.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, 0Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:17 AM
To: Dixon, Jennifer
Subject: Revised ACR PA
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:19 AM
To: amanda.mcbride@ahc.alabama.gov
Subject: Revised ACR PA
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx

Good morning Amanda,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Georgia SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, July 10, 2020 2:07 PM
To:	106NAGPRA@astribe.com
Subject:	Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	Appendix A. Maps.docx; ACR_PA_DRAFT_revised.docx; Ms. Frazier_ACR_SIGNED LETTER_1_.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Ms. Devon Frazier,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Absentee-Shawnee Tribe of Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:45 PM
To: jlowe@alabama-quassarte.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Ms._Lowe_ACR_SIGNED LETTER.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Janice Lowe,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Alabama-Quassarte Tribal Town would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank You,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, July 10, 2020 2:48 PM
To:	Caddo Nation
Subject:	Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Mr_Cross_ACR_SIGNEd_LETTERpdf.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Mr. Cross,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Caddo Nation, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, July 10, 2020 2:51 PM
To:	Caitlin Rogers
Subject:	Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	Dr_Haire_ACR_SIGNED_LETTER.pdf; ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Ms. Rodgers,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Catawba Indian Nation would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:53 PM
To: elizabeth-toombs@cherokee.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Ms_Toombs_ACR_SIGNED LETTER.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Toombs,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Cherokee Nation, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, July 10, 2020 2:57 PM
To:	Karen Brunso; hpo@chickasaw.net
Subject:	Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Ms_Brunso_ACR_SIGNED_LETTER.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Ms. Brunso

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Chickasaw Nation would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company’s (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR’s HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project’s Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, July 10, 2020 3:01 PM
To:	thpo@chitimacha.gov
Subject:	Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Ms_Walden_ACR_SIGNED_LETTER.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Ms. Walden,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Chitimacha Tribe, Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, July 10, 2020 3:16 PM
To:	Ian Thompson; Lindsey Bilyeu
Subject:	Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Dr_Thompson_ACR_SIGNED_LETTER.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Dr. Thompson and Ms. Bilyeu,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Choctaw Nation of Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:19 PM
To: Linda Langley
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Ms_Langley_ACR_SIGNED_LETTER.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Langley,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Coushatta Tribe of Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:23 PM
To: Yerka, Stephen
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Mr_Townsend_ACR_SIGNED_LETTER.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Yerka,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Eastern Band of the Cherokee Nation would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:25 PM
To: Eastern Shawnee Tribe of Oklahoma
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Mr_Barnes_ACR_SIGNED_LETTERS.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Barnes,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Eastern Shawnee Tribe of Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, July 10, 2020 3:27 PM
To:	ashively@jenachoctaw.org
Subject:	Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Ms_Shively_ACR_SIGNED_LETTER.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Ms. Shively,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Jena Band of Choctaw Indians, Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, July 10, 2020 3:29 PM
To:	david.cook@kialegeetribe.net
Subject:	Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Mr_Cook_ACR_SIGNED_LETTER.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Mr. Cook,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Kialegee Tribal Town, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:35 PM
To: kcarleton@choctaw.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Mr_Carleton_ACR_SIGNED_LETTER.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Carleton,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Mississippi Band of Choctaw Indians would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, July 10, 2020 3:37 PM
To:	section106@mcn-nsn.gov
Subject:	Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Ms_Lowe-Zepeda_ACR_SIGNED_LETTER.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Ms. Lowe-Zepeda

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Muscogee (Creek) Nation would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:43 PM
To: lhaikey@pci-nsn.gov
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Mr_Haikey_ACR_SIGNED_LETTER.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Haikey,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Poarch Band of Creek Indians would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:46 PM
To: tonya@shawnee-tribe.com
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Ms_Tipton_ACR_SIGNED_LETTER.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Tipton,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Shawnee Tribe, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, July 10, 2020 3:49 PM
To:	thpo@tttown.org
Subject:	Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Mr_Cloud_ACR_SIGNED_LETTER.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Mr. Cloud,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Thlopthlocco Tribal Town would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Friday, July 10, 2020 3:51 PM
To:	earlii@tunic.org
Subject:	Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx; Mr_Barbry_ACR_SIGNED_LETTER.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Mr. Barbry,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Tunica-Biloxi Indian Tribe of Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD

Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, July 13, 2020 9:25 AM
To: Caitlin Rogers
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Good morning Caitlin,

I hope you are all well!

I would be happy to mail you a copy of the Updated Draft PA to you for review. I have been working on getting that PA executed as fast as possible and have been communicating with the Alabama and Georgia SHPO on iterations of the PA via email, however, I will make sure you receive each iteration via USPS. Thank you for providing me with your updated email addresses, I have added them to our contact list.

Sincerely,

Patrick

-----Original Message-----
From: Caitlin Rogers [mailto:caitlin.rogers@catawba.com]
Sent: Monday, July 13, 2020 9:00 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Re: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Hey Patrick,

If you could send this information via USPS. Also, both myself and Wenonah Haire's emails have changed to Caitlin.Rogers@catawba.com and Wenonah.Haire@catawba.com . If you could please update your records. If you have any other questions let me know. Thanks

Caitlin

____

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Friday, July 10, 2020 3:51 PM
To: Caitlin Rogers <caitlinh@ccppcrafts.com>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Rodgers,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Catawba Indian Nation would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

This email has been scanned for viruses and malware, and may have been automatically archived by Mimecast Ltd, an innovator in Software as a Service (SaaS) for business. Providing a safer and more useful place for your human generated data. Specializing in; Security, archiving and compliance. To find out more Click Here <Blockedhttp://www.mimecast.com/products/> .

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, July 22, 2020 9:01 AM
To: amanda.mcbride@ahc.alabama.gov
Subject: FW: Revised ACR PA
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx

Good morning Amanda,

I hope you are doing well?

I just wanted to check in with you on this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:19 AM
To: amanda.mcbride@ahc.alabama.gov
Subject: Revised ACR PA

Good morning Amanda,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Georgia SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, July 22, 2020 8:56 AM
To: Jennifer.Dixon@dnr.ga.gov
Subject: FW: Revised ACR PA
Attachments: ACR_PA_DRAFT_revised.docx; Appendix A. Maps.docx

Good morning Jennifer,

I hope all is well with you?

I just wanted to check-in regarding this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:17 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, July 22, 2020 9:01 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Revised ACR PA

Hello Patrick,

With our 30-day review period, we'll have comments back to you by 7/29 at the latest! Thanks and hope you're staying well as well!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 9:56 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: FW: Revised ACR PA

Good morning Jennifer,

I hope all is well with you?

I just wanted to check-in regarding this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:17 AM

To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, July 22, 2020 9:15 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Revised ACR PA

I just took a look yesterday, and it is currently going through archaeological review, but I'm not remembering any large edits, just some minor aspects on my end.

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

——————————————————
A division of the
GEORGIA DEPARTMENT OF NATURAL RESOURCES

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 10:11 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Revised ACR PA

Thanks Jennifer,

I appreciate the update. I am definitely interested in trying to expedite things on my end; is there any major issues I could start working to get a new draft turned around?

Patrick

-----Original Message-----
From: Dixon, Jennifer [mailto:Jennifer.Dixon@dnr.ga.gov]
Sent: Wednesday, July 22, 2020 9:01 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Hello Patrick,

With our 30-day review period, we'll have comments back to you by 7/29 at the latest! Thanks and hope you're staying well as well!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 9:56 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: FW: Revised ACR PA

Good morning Jennifer,

I hope all is well with you?

I just wanted to check-in regarding this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:17 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Sent: Wednesday, July 22, 2020 10:29 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Revised ACR PA

Patrick,

I should be completing my review next week.

Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
Blockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 9:01 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: FW: Revised ACR PA

Good morning Amanda,

I hope you are doing well?

I just wanted to check in with you on this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:19 AM
To: amanda.mcbride@ahc.alabama.gov
Subject: Revised ACR PA

Good morning Amanda,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Georgia SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Sent: Wednesday, July 22, 2020 11:16 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Revised ACR PA

No, not at this time.

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
Blockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 11:07 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Thanks Amanda,

I will be trying to turn around a the next draft fast; do you have any major issues I could get a jumpstart on?

Patrick

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Wednesday, July 22, 2020 10:29 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Patrick,

I should be completing my review next week.

Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division

Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 9:01 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: FW: Revised ACR PA

Good morning Amanda,

I hope you are doing well?

I just wanted to check in with you on this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:19 AM
To: amanda.mcbride@ahc.alabama.gov
Subject: Revised ACR PA

Good morning Amanda,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Georgia SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, July 22, 2020 9:11 AM
To: Dixon, Jennifer
Subject: RE: Revised ACR PA

Thanks Jennifer,

I appreciate the update. I am definitely interested in trying to expedite things on my end; is there any major issues I could start working to get a new draft turned around?

Patrick

-----Original Message-----
From: Dixon, Jennifer [mailto:Jennifer.Dixon@dnr.ga.gov]
Sent: Wednesday, July 22, 2020 9:01 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Hello Patrick,

With our 30-day review period, we'll have comments back to you by 7/29 at the latest! Thanks and hope you're staying well as well!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

Facebook • Twitter • Instagram
Purchase your Historic Preservation license plate today!
——————————————————
A division of the
GEORGIA DEPARTMENT OF NATURAL RESOURCES

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 9:56 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: FW: Revised ACR PA

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning Jennifer,

I hope all is well with you?

I just wanted to check-in regarding this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:17 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326

Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, July 22, 2020 11:07 AM
To: McBride, Amanda
Subject: RE: Revised ACR PA

Thanks Amanda,

I will be trying to turn around a the next draft fast; do you have any major issues I could get a jumpstart on?

Patrick

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Wednesday, July 22, 2020 10:29 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Patrick,

I should be completing my review next week.

Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
Blockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 9:01 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: FW: Revised ACR PA

Good morning Amanda,

I hope you are doing well?

I just wanted to check in with you on this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:19 AM
To: amanda.mcbride@ahc.alabama.gov
Subject: Revised ACR PA

Good morning Amanda,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Georgia SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, July 28, 2020 12:53 PM
To: Dixon, Jennifer
Subject: RE: Revised ACR PA

Thanks Jennifer,

Glad to hear that you and your loved ones are healthy. I can only image how rough it is having to go through quarantine. A few of my colleagues and friends have gotten sick and all have luckily recovered.

Also good news regarding the PA. I will turn around a new draft as soon as I can.

Take care,

Patrick

-----Original Message-----
From: Dixon, Jennifer [mailto:Jennifer.Dixon@dnr.ga.gov]
Sent: Tuesday, July 28, 2020 12:29 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Hello Patrick,

I hope this finds you well! I finally have been given the all clear to get out of quarantine (my boyfriend, his daughter, and her mother all tested positive), so I've been glad to get to a slightly more normal life!

Attached are our comments, recommended edits, etc. for the revised draft PA. It appears we are in the home stretch!

Let us know if you have any questions!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Monday, June 29, 2020 9:17 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, July 28, 2020 1:05 PM
To: McBride, Amanda
Subject: RE: Revised ACR PA

Dear Amanda,

Thank you, I will turn around another draft as soon as possible. I also just received comments from the GA SHPO as well.

Patrick

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Tuesday, July 28, 2020 11:40 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Cc: Sipes, Eric <Eric.Sipes@ahc.alabama.gov>
Subject: [Non-DoD Source] RE: Revised ACR PA

Patrick,

Attached is the PA with our comments. Please use the "Track Changes" feature to see our comments in the margin.

Best regards,
Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
Blockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 11:20 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Thanks again Amanda.

-----Original Message-----

From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Wednesday, July 22, 2020 11:16 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

No, not at this time.

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 11:07 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Thanks Amanda,

I will be trying to turn around a the next draft fast; do you have any major issues I could get a jumpstart on?

Patrick

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Wednesday, July 22, 2020 10:29 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Patrick,

I should be completing my review next week.

Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)

36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 9:01 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: FW: Revised ACR PA

Good morning Amanda,

I hope you are doing well?

I just wanted to check in with you on this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:19 AM
To: amanda.mcbride@ahc.alabama.gov
Subject: Revised ACR PA

Good morning Amanda,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Georgia SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Sent: Tuesday, July 28, 2020 11:40 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Cc: Sipes, Eric
Subject: [Non-DoD Source] RE: Revised ACR PA
Attachments: ACR_PA_EDS_REVIEW_Notes with comments.docx

Patrick,

Attached is the PA with our comments. Please use the "Track Changes" feature to see our comments in the margin.

Best regards,
Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
Blockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 11:20 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Thanks again Amanda.

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Wednesday, July 22, 2020 11:16 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

No, not at this time.

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission

468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 11:07 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Thanks Amanda,

I will be trying to turn around a the next draft fast; do you have any major issues I could get a jumpstart on?

Patrick

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Wednesday, July 22, 2020 10:29 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Patrick,

I should be completing my review next week.

Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 9:01 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>

Subject: FW: Revised ACR PA

Good morning Amanda,

I hope you are doing well?

I just wanted to check in with you on this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:19 AM
To: amanda.mcbride@ahc.alabama.gov
Subject: Revised ACR PA

Good morning Amanda,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Georgia SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326

Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Tuesday, July 28, 2020 12:29 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Revised ACR PA
Attachments: ACR PA DRAFT 062920 HPD Edits.docx

Hello Patrick,

I hope this finds you well! I finally have been given the all clear to get out of quarantine (my boyfriend, his daughter, and her mother all tested positive), so I've been glad to get to a slightly more normal life!

Attached are our comments, recommended edits, etc. for the revised draft PA. It appears we are in the home stretch!

Let us know if you have any questions!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Monday, June 29, 2020 9:17 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, September 1, 2020 4:29 PM
To: Dixon, Jennifer
Subject: RE: Revised ACR PA
Attachments: al-ga.coe-c.mobile district.allatoona lake water supply storage reallocation study.np.23jun20.pdf; Appendix A. Maps.docx; ACR PA DRAFT 8 27 20.docx

Hi Jennifer,

I hope you are doing well.

I have attached the latest draft of the ACR PA along with the ACHP letter declining to participate. Please let me know if you have any questions or need any additional information.

Thanks

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Tuesday, July 28, 2020 12:29 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Hello Patrick,

I hope this finds you well! I finally have been given the all clear to get out of quarantine (my boyfriend, his daughter, and her mother all tested positive), so I've been glad to get to a slightly more normal life!

Attached are our comments, recommended edits, etc. for the revised draft PA. It appears we are in the home stretch!

Let us know if you have any questions!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

GEORGIA DEPARTMENT OF NATURAL RESOURCES

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Monday, June 29, 2020 9:17 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, September 1, 2020 4:32 PM
To: McBride, Amanda
Subject: RE: Revised ACR PA
Attachments: al-ga.coe-c.mobile district.allatoona lake water supply storage reallocation study.np.23jun20.pdf; Appendix A. Maps.docx; ACR PA DRAFT 8 27 20.docx

Dear Amanda,

I hope you are doing well.

I have attached the latest draft of the ACR PA along with the ACHP letter declining to participate. Please let me know if you have any questions or need any additional information.

Thanks

-----Original Message-----
From: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Sent: Tuesday, July 28, 2020 1:10 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Great, we'll be looking for it.

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
Blockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Tuesday, July 28, 2020 1:05 PM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Dear Amanda,

Thank you, I will turn around another draft as soon as possible. I also just received comments from the GA SHPO as well.

Patrick

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Tuesday, July 28, 2020 11:40 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Cc: Sipes, Eric <Eric.Sipes@ahc.alabama.gov>
Subject: [Non-DoD Source] RE: Revised ACR PA

Patrick,

Attached is the PA with our comments. Please use the "Track Changes" feature to see our comments in the margin.

Best regards,
Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 11:20 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Thanks again Amanda.

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Wednesday, July 22, 2020 11:16 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

No, not at this time.

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama

36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 11:07 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Thanks Amanda,

I will be trying to turn around a the next draft fast; do you have any major issues I could get a jumpstart on?

Patrick

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Wednesday, July 22, 2020 10:29 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Patrick,

I should be completing my review next week.

Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedBlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 9:01 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: FW: Revised ACR PA

Good morning Amanda,

I hope you are doing well?

I just wanted to check in with you on this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:19 AM
To: amanda.mcbride@ahc.alabama.gov
Subject: Revised ACR PA

Good morning Amanda,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Georgia SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, September 2, 2020 9:27 AM
To: section.106@ahc.alabama.gov
Subject: ACR submittal of 9_2_2020 Draft of PA AHC tracking number 2020-0189
Attachments: ACR PA DRAFT 8 27 20.docx; Appendix A. Maps.docx

Please find the attached draft PA with most recent comments from the Alabama and Georgia SHPOs addressed. The AHC tracking number for this project is 2020-0189.

Thank you,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, September 2, 2020 9:37 AM
To: Dixon, Jennifer
Subject: RE: Revised ACR PA

No worries Jennifer,

I did rework a couple of things based on your last comments. I may also have a couple of minor changes regarding the Alabama portion of the project based on comments from the APC. I am working to have this executed by the end of this month.

Thanks again,

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 2, 2020 9:25 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Scratch that, just looked at it and didn't realize it had all the comments and such still there. We'll get you comments!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Tuesday, September 1, 2020 5:29 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Revised ACR PA

Hi Jennifer,

I hope you are doing well.

I have attached the latest draft of the ACR PA along with the ACHP letter declining to participate. Please let me know if you have any questions or need any additional information.

Thanks

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Tuesday, July 28, 2020 12:29 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Hello Patrick,

I hope this finds you well! I finally have been given the all clear to get out of quarantine (my boyfriend, his daughter, and her mother all tested positive), so I've been glad to get to a slightly more normal life!

Attached are our comments, recommended edits, etc. for the revised draft PA. It appears we are in the home stretch!

Let us know if you have any questions!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Monday, June 29, 2020 9:17 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, September 2, 2020 11:26 AM
To: Gardner, William S.
Subject: RE: FERC Filing: Holt HPMP
Attachments: Appendix A. Maps.docx; ACR PA DRAFT 8 27 20.docx

Hi William,

I hope you are doing well!

Sorry it has taken so long to get back to you on this. Do you need official correspondence on Army letterhead for this?

I have attached the latest draft of the ACR PA with AL and GA SHPOs comments. The have both indicated that they are close to signing.

Patrick

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Tuesday, August 18, 2020 2:15 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] FW: FERC Filing: Holt HPMP

Patrick – attached is the FERC filing for Alabama Power Company's Holt Historic Properties Management Plan (HPMP) in accordance with Article 409 of the Holt Project license (FERC Project No. 2203)

APC received your email stating that you had no comments regarding the HPMP.

Please provide a concurrence letter regarding the final HPMP for the Holt Project.

Thanks, Bill

Bill Gardner
Alabama Power Company
Environmental Affairs
205-288-0067
wsgardne@southernco.com

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 2, 2020 7:36 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] Re: Revised ACR PA

Thanks, Patrick! We are at or near the point of signing, correct? If this is good to go, do you want us to go ahead and sign?

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

Get Outlook for iOS

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Tuesday, September 1, 2020 5:28:37 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Revised ACR PA

Hi Jennifer,

I hope you are doing well.

I have attached the latest draft of the ACR PA along with the ACHP letter declining to participate. Please let me know if you have any questions or need any additional information.

Thanks

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Tuesday, July 28, 2020 12:29 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Hello Patrick,

I hope this finds you well! I finally have been given the all clear to get out of quarantine (my boyfriend, his daughter, and her mother all tested positive), so I've been glad to get to a slightly more normal life!

Attached are our comments, recommended edits, etc. for the revised draft PA. It appears we are in the home stretch!

Let us know if you have any questions!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Monday, June 29, 2020 9:17 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates

(WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Sent: Wednesday, September 2, 2020 8:36 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Cc: Sipes, Eric
Subject: [Non-DoD Source] RE: Revised ACR PA

Thanks, Patrick. Please send his submission to section.106@ahc.alabama.gov so that it can be logged into our system for review. Be sure to note that this project already has an AHC tracking number, which is 2020-0189.

Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
Blockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Tuesday, September 01, 2020 4:32 PM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Dear Amanda,

I hope you are doing well.

I have attached the latest draft of the ACR PA along with the ACHP letter declining to participate. Please let me know if you have any questions or need any additional information.

Thanks

-----Original Message-----
From: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Sent: Tuesday, July 28, 2020 1:10 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Great, we'll be looking for it.

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Tuesday, July 28, 2020 1:05 PM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Dear Amanda,

Thank you, I will turn around another draft as soon as possible. I also just received comments from the GA SHPO as well.

Patrick

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Tuesday, July 28, 2020 11:40 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Cc: Sipes, Eric <Eric.Sipes@ahc.alabama.gov>
Subject: [Non-DoD Source] RE: Revised ACR PA

Patrick,

Attached is the PA with our comments. Please use the "Track Changes" feature to see our comments in the margin.

Best regards,
Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 11:20 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Thanks again Amanda.

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Wednesday, July 22, 2020 11:16 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

No, not at this time.

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedBlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 11:07 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: RE: Revised ACR PA

Thanks Amanda,

I will be trying to turn around a the next draft fast; do you have any major issues I could get a jumpstart on?

Patrick

-----Original Message-----
From: McBride, Amanda [mailto:Amanda.McBride@ahc.alabama.gov]
Sent: Wednesday, July 22, 2020 10:29 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Patrick,

I should be completing my review next week.

Amanda

Amanda McBride
Environmental Review Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama
36130-0900 (US Post)
36104 (Courier)
334.230.2692
Amanda.McBride@ahc.alabama.gov
BlockedBlockedBlockedBlockedBlockedhttp://ahc.alabama.gov/

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, July 22, 2020 9:01 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>
Subject: FW: Revised ACR PA

Good morning Amanda,

I hope you are doing well?

I just wanted to check in with you on this project and see if you had a chance to look at the revised PA? Thanks,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, June 29, 2020 8:19 AM
To: amanda.mcbride@ahc.alabama.gov
Subject: Revised ACR PA

Good morning Amanda,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Georgia SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 2, 2020 9:25 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Revised ACR PA

Scratch that, just looked at it and didn't realize it had all the comments and such still there. We'll get you comments!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Tuesday, September 1, 2020 5:29 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Revised ACR PA

Hi Jennifer,

I hope you are doing well.

I have attached the latest draft of the ACR PA along with the ACHP letter declining to participate. Please let me know if you have any questions or need any additional information.

Thanks

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Tuesday, July 28, 2020 12:29 PM

To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Hello Patrick,

I hope this finds you well! I finally have been given the all clear to get out of quarantine (my boyfriend, his daughter, and her mother all tested positive), so I've been glad to get to a slightly more normal life!

Attached are our comments, recommended edits, etc. for the revised draft PA. It appears we are in the home stretch!

Let us know if you have any questions!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Monday, June 29, 2020 9:17 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: 106, Section <Section.106@ahc.alabama.gov>
Sent: Wednesday, September 2, 2020 11:20 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: ACR submittal of 9_2_2020 Draft of PA AHC tracking number 2020-0189

Thank you for your e-mail. Your draft PA for **AHC 20-0189** has been logged into our database.

Please reference this number in all correspondence regarding this project.

Best regards,

Alabama Historical Commission
Section 106/Regulatory Review Division

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 2, 2020 9:27 AM
To: 106, Section <Section.106@ahc.alabama.gov>
Subject: ACR submittal of 9_2_2020 Draft of PA AHC tracking number 2020-0189

Please find the attached draft PA with most recent comments from the Alabama and Georgia SHPOs addressed. The AHC tracking number for this project is 2020-0189.

Thank you,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Wednesday, September 2, 2020 4:59 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE ACR Draft PA

Patrick – APC is still reviewing the Draft PA. Please provide me the best number to reach you.

Thanks, Bill

Bill Gardner
Alabama Power Company

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 02, 2020 11:26 AM
To: Gardner, William S. <WSGARDNE@southernco.com>
Subject: RE: FERC Filing: Holt HPMP

EXTERNAL MAIL: Caution Opening Links or Files

Hi William,

I hope you are doing well!

Sorry it has taken so long to get back to you on this. Do you need official correspondence on Army letterhead for this?

I have attached the latest draft of the ACR PA with AL and GA SHPOs comments. The have both indicated that they are close to signing.

Patrick

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Tuesday, August 18, 2020 2:15 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] FW: FERC Filing: Holt HPMP

Patrick – attached is the FERC filing for Alabama Power Company's Holt Historic Properties Management Plan (HPMP) in accordance with Article 409 of the Holt Project license (FERC Project No. 2203)

APC received your email stating that you had no comments regarding the HPMP.

Please provide a concurrence letter regarding the final HPMP for the Holt Project.

Thanks, Bill

Bill Gardner
Alabama Power Company
Environmental Affairs
205-288-0067
wsgardne@southernco.com

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, September 16, 2020 3:19 PM
To: 'Dixon, Jennifer'
Subject: RE: Emailing: ACR PA DRAFT 8 27 20
Attachments: ACR PA DRAFT 8 27 20 changes accepted.docx

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 16, 2020 4:19 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>

Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, September 23, 2020 10:44 AM
To: Dixon, Jennifer
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

Good morning Jennifer,

Sorry for the Late response. This have just now gotten back to sort-of-normal since the storm. Our power was out for six days.

Yes, I had just accepted the changes in that most recent draft of the PA I sent to you. I am still waiting on comments from the Alabama Power Company which will be important as they own and operate Logan Martin and Weiss Reservoirs and will let you know as soon as that comes through.

I hope all is well.

Thanks,

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

A division of the
GEORGIA DEPARTMENT OF NATURAL RESOURCES

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 16, 2020 4:19 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Wednesday, September 23, 2020 11:03 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. I have reviewed it and am waiting on archaeology to review it, and we'll have a few updates for you. We are getting there!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 23, 2020 11:44 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

Good morning Jennifer,

Sorry for the Late response. This have just now gotten back to sort-of-normal since the storm. Our power was out for six days.

Yes, I had just accepted the changes in that most recent draft of the PA I sent to you. I am still waiting on comments from the Alabama Power Company which will be important as they own and operate Logan Martin and Weiss Reservoirs and will let you know as soon as that comes through.

I hope all is well.

Thanks,

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 16, 2020 4:19 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, September 29, 2020 5:31 PM
To: Gardner, William S.
Subject: RE: RE ACR Draft PA

Good morning Bill,

Hope all is well! We got through Hurricane Sally relatively unscathed, but, find myself trying to catch up on work! I am working on some recent comments from the GA SHPO and had a question for you. One of their comments suggested that APC be an invited signatory to the PA and I so I wanted to run that by you. I am really trying to limit APC's role to consultation and ensure there are no cost obligations on your part. However, If you guys would prefer being an invited signatory let me know.

Patrick

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Wednesday, September 2, 2020 4:59 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE ACR Draft PA

Patrick – APC is still reviewing the Draft PA. Please provide me the best number to reach you.

Thanks, Bill

Bill Gardner
Alabama Power Company

> **From:** O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
> **Sent:** Wednesday, September 02, 2020 11:26 AM
> **To:** Gardner, William S. <WSGARDNE@southernco.com>
> **Subject:** RE: FERC Filing: Holt HPMP
>
> **EXTERNAL MAIL: Caution Opening Links or Files**
>
> ---
>
> Hi William,
>
> I hope you are doing well!
>
> Sorry it has taken so long to get back to you on this. Do you need official correspondence on Army letterhead for this?
>
> I have attached the latest draft of the ACR PA with AL and GA SHPOs comments. The have both indicated that they are close to signing.
>
> Patrick

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Tuesday, August 18, 2020 2:15 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] FW: FERC Filing: Holt HPMP

Patrick – attached is the FERC filing for Alabama Power Company's Holt Historic Properties Management Plan (HPMP) in accordance with Article 409 of the Holt Project license (FERC Project No. 2203)

APC received your email stating that you had no comments regarding the HPMP.

Please provide a concurrence letter regarding the final HPMP for the Holt Project.

Thanks, Bill

Bill Gardner
Alabama Power Company
Environmental Affairs
205-288-0067
wsgardne@southernco.com

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Tuesday, September 29, 2020 9:04 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Revised ACR PA
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Hello Patrick,

Attached are our comments/recommended edits on the current draft. We are definitely getting closer!

For the next round, please accept any edits that you all agree with, delete any comments that are resolved, and mark as resolved any current comments that appear to be taken care of with existing or proposed edits. That way we have the cleanest document possible and we can clearly focus on changes moving forward rather than all of them!

Please let us know if you have any questions. Thanks!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook • Twitter • Instagram
Purchase your Historic Preservation license plate today!
——————————————————
A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Tuesday, September 1, 2020 5:29 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Revised ACR PA

Hi Jennifer,

I hope you are doing well.

I have attached the latest draft of the ACR PA along with the ACHP letter declining to participate. Please let me know if you have any questions or need any additional information.

Thanks

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Tuesday, July 28, 2020 12:29 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Hello Patrick,

I hope this finds you well! I finally have been given the all clear to get out of quarantine (my boyfriend, his daughter, and her mother all tested positive), so I've been glad to get to a slightly more normal life!

Attached are our comments, recommended edits, etc. for the revised draft PA. It appears we are in the home stretch!

Let us know if you have any questions!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Monday, June 29, 2020 9:17 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Thursday, October 1, 2020 4:26 PM
To: Gardner, William S.
Subject: RE: RE ACR Draft PA
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Dear Bill,

Good to talk to you today. Attached is the PA with the latest comments from GA SHPO addressed. I have accepted all changes and close out previous comments. Please let me know if any immediate questions come up and I look forward to talking to you next week.

Patrick

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Wednesday, September 30, 2020 10:03 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Fwd: RE ACR Draft PA

Patrick. Good Morning. Please give me a call at 205 288 0067. Thanks. Bill

Bill Gardner
Alabama Power
wsgardne@southernco.com
Get Outlook for iOS

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Tuesday, September 29, 2020 5:31:29 PM
To: Gardner, William S. <WSGARDNE@southernco.com>
Subject: RE: RE ACR Draft PA

EXTERNAL MAIL: Caution Opening Links or Files

Good morning Bill,

Hope all is well! We got through Hurricane Sally relatively unscathed, but, find myself trying to catch up on work! I am working on some recent comments from the GA SHPO and had a question for you. One of their comments suggested that APC be an invited signatory to the PA and I so I wanted to run that by you. I am really trying to limit APC's role to consultation and ensure there are no cost obligations on your part. However, If you guys would prefer being an invited signatory let me know.

Patrick

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Wednesday, September 2, 2020 4:59 PM

To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE ACR Draft PA

Patrick – APC is still reviewing the Draft PA. Please provide me the best number to reach you.

Thanks, Bill

Bill Gardner
Alabama Power Company

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 02, 2020 11:26 AM
To: Gardner, William S. <WSGARDNE@southernco.com>
Subject: RE: FERC Filing: Holt HPMP

EXTERNAL MAIL: Caution Opening Links or Files

Hi William,

I hope you are doing well!

Sorry it has taken so long to get back to you on this. Do you need official correspondence on Army letterhead for this?

I have attached the latest draft of the ACR PA with AL and GA SHPOs comments. The have both indicated that they are close to signing.

Patrick

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Tuesday, August 18, 2020 2:15 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] FW: FERC Filing: Holt HPMP

Patrick – attached is the FERC filing for Alabama Power Company's Holt Historic Properties Management Plan (HPMP) in accordance with Article 409 of the Holt Project license (FERC Project No. 2203)

APC received your email stating that you had no comments regarding the HPMP.

Please provide a concurrence letter regarding the final HPMP for the Holt Project.

Thanks, Bill

Bill Gardner
Alabama Power Company
Environmental Affairs
205-288-0067
wsgardne@southernco.com

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Thursday, October 1, 2020 4:34 PM
To: Jennifer Dixon
Subject: RE: Revised ACR PA
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Hi Jennifer,

Attached is the PA with the latest round of your comments addressed. I am working with APC on their comments and should have that wrapped up early next week. I expect some small changes from that consultation and will let you know. I have had no additional comments from the Tribes or AL SHPO and will provide them with the most recent draft as well. Thanks,

Patrick

-----Original Message-----
From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Tuesday, September 29, 2020 9:04 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Hello Patrick,

Attached are our comments/recommended edits on the current draft. We are definitely getting closer!

For the next round, please accept any edits that you all agree with, delete any comments that are resolved, and mark as resolved any current comments that appear to be taken care of with existing or proposed edits. That way we have the cleanest document possible and we can clearly focus on changes moving forward rather than all of them!

Please let us know if you have any questions. Thanks!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>

Sent: Tuesday, September 1, 2020 5:29 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Revised ACR PA

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Jennifer,

I hope you are doing well.

I have attached the latest draft of the ACR PA along with the ACHP letter declining to participate. Please let me know if you have any questions or need any additional information.

Thanks

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Tuesday, July 28, 2020 12:29 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised ACR PA

Hello Patrick,

I hope this finds you well! I finally have been given the all clear to get out of quarantine (my boyfriend, his daughter, and her mother all tested positive), so I've been glad to get to a slightly more normal life!

Attached are our comments, recommended edits, etc. for the revised draft PA. It appears we are in the home stretch!

Let us know if you have any questions!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Monday, June 29, 2020 9:17 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: Revised ACR PA

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning Jennifer,

I hope you had a great weekend!

At long last I have revised the PA for ACR based on your comments and those I received from the Alabama SHPO and Alabama Power Company (APC).

My goals with this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of APC's HPMP and shoreline monitoring program and the Corps ICRMP for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing the necessary elements that could enable us to discern the undertaking's impacts and will provide data or information and recommendations for future shoreline monitoring and site inspections and could also provide information to potentially recommend future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and Water Control Manual Updates (WCM) for Logan Martin and Weiss, it is more limited in scope than a construction project. I think appending information to or eventually updating project HPMPs or ICRMPs regarding these types of projects, where effects may not be clearly discernable, is the best way to approach cultural resources concerns and will provide a way to continue to monitor these effects after the reallocation and WCM updates have been initiated.

While I am trying to appropriately consider the effects of the project I am also trying to appropriately scale cultural resource management efforts to the Undertaking. This is because project represents operational changes to reservoirs utilizing existing facilities precluding any construction related ground disturbance, the project will result in the same type of impacts under current operations that may not be distinguishable from each other, and the project APE is extremely large. Please let me know if you need any additional information and thank you for your help with this! I really appreciate it.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, October 5, 2020 10:48 AM
To: Lindsey Bilyeu
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx; ACR Project Area Shapefiles.zip

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Lindsey,

I should have gotten back to you ages ago on this. I have attached the shapefiles for the project and a recent draft pf the PA with comments I have addressed from GA SHPO. I have not received any additional comments from AL SHPO and am currently awaiting comments from the Alabama Power Company. This PA has been in the works since January/February 2020. Please let me know if you have any immediate questions.

Thanks,

Patrick

-----Original Message-----
From: Lindsey Bilyeu <lbilyeu@choctawnation.com>
Sent: Wednesday, August 12, 2020 3:23 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dr. O'Day,

The Choctaw Nation of Oklahoma thanks the USACE, Mobile District, for the correspondence regarding the above referenced project. Could you please send me the GIS shapefiles of the project area so that I can determine if this project lies in our area of historic interest.

If you have any questions, please contact me.

Thank you,

Lindsey D Bilyeu, MS
Senior Compliance Review Officer
Historic Preservation Department
Choctaw Nation of Oklahoma
P.O. Box 1210, Durant, OK 74702
Desk Phone: 580-924-8280 ext. 2631
Cell Phone: 580-740-9624

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>

Sent: Friday, July 10, 2020 3:16 PM
To: Ian Thompson <ithompson@choctawnation.com>; Lindsey Bilyeu <lbilyeu@choctawnation.com>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Halito: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Dr. Thompson and Ms. Bilyeu,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Choctaw Nation of Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602

☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:04 PM
To: section.106@ahc.alabama.gov; McBride, Amanda; Sipes, Eric
Subject: Allatoona Reallocation Logan Martin and Weiss WCM updates PA
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Please fine the attached draft of the Allatoona Reallocation and Logan Martin and Weiss WCM Updates PA that has been updated based on recent comments provided by the Georgia SHPO. We are currently working with the Alabama Power Company on addressing a few comments they have. We will also send out the attached draft PA to the consulting Tribes as well.

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:16 PM
To: 'tonya@shawnee-tribe.com'
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Tipton,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:46 PM
To: tonya@shawnee-tribe.com
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Tipton,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Shawnee Tribe, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:17 PM
To: earlii@tunic.org
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Barbry,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:51 PM
To: earlii@tunic.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Barbry,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Tunica-Biloxi Indian Tribe of Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:17 PM
To: thpo@tttown.org
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Cloud,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:49 PM
To: thpo@tttown.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Cloud,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Thlopthlocco Tribal Town would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:18 PM
To: lhaikey@pci-nsn.gov
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Haikey,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:43 PM
To: lhaikey@pci-nsn.gov
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Haikey,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Poarch Band of Creek Indians would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:19 PM
To: section106@mcn-nsn.gov
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Lowe-Zepeda,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:37 PM
To: section106@mcn-nsn.gov
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Lowe-Zepeda

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Muscogee (Creek) Nation would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:22 PM
To: Carleton, Ken
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Carleton,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:35 PM
To: kcarleton@choctaw.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Carleton,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Mississippi Band of Choctaw Indians would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:23 PM
To: david.cook@kialegeetribe.net
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Cook,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:29 PM
To: david.cook@kialegeetribe.net
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Cook,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Kialegee Tribal Town, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:24 PM
To: ashively@jenachoctaw.org
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Shively,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:27 PM
To: ashively@jenachoctaw.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Shively,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Jena Band of Choctaw Indians, Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:25 PM
To: Eastern Shawnee Tribe of Oklahoma
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Barnes,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:25 PM
To: Eastern Shawnee Tribe of Oklahoma <bbarnes@estoo.net>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Barnes,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Eastern Shawnee Tribe of Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:26 PM
To: Yerka, Stephen
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Yerka,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:23 PM
To: Yerka, Stephen <syerka@nc-cherokee.com>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Yerka,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Eastern Band of the Cherokee Nation would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:32 PM
To: Linda Langley
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Langley,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:19 PM
To: Linda Langley <LLangley@coushatta.org>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Langley,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Coushatta Tribe of Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:37 PM
To: 'ithompson@choctawnation.com'; 'lbilyeu@choctawnation.com'
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Dr. Thompson and Ms. Bilyeu,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:16 PM
To: Ian Thompson <ithompson@choctawnation.com>; Lindsey Bilyeu <lbilyeu@choctawnation.com>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Dr. Thompson and Ms. Bilyeu,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Choctaw Nation of Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:38 PM
To: 'thpo@chitimacha.gov'
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Walden,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:01 PM
To: thpo@chitimacha.gov
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Walden,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Chitimacha Tribe, Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:39 PM
To: 'Karen.Brunso@chickasaw.net'; hpo@chickasaw.net
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Brunso,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:57 PM
To: Karen Brunso <Karen.Brunso@chickasaw.net>; hpo@chickasaw.net
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Brunso

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Chickasaw Nation would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:41 PM
To: Elizabeth Toombs
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Toombs,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:53 PM
To: elizabeth-toombs@cherokee.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Toombs,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Cherokee Nation, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:44 PM
To: Caddo Nation
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Cross,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:48 PM
To: Caddo Nation <pcross@caddonation.org>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Cross,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Caddo Nation, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:48 PM
To: jlowe@alabama-quassarte.org
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Janice Lowe,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:45 PM
To: jlowe@alabama-quassarte.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Janice Lowe,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Alabama-Quassarte Tribal Town would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank You,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:50 PM
To: 'celestine.byrant@actribe.org'; 'histpres@actribe.org'
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Mr. Bryant J. Celestine,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:41 PM
To: celestine.byrant@actribe.org; histpres@actribe.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Mr. Bryant J. Celestine

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Alabama-Coushatta Tribes of Texas would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank You,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:52 PM
To: '106NAGPRA@astribe.com'
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 8 27 20 HPD Edits.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Devon Frazier,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:07 PM
To: 106NAGPRA@astribe.com
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Devon Frazier,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Absentee-Shawnee Tribe of Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the

undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 7, 2020 9:06 AM
To: Gardner, William S.
Subject: RE: RE ACR Draft PA

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning Bill,

I just wanted to check in with you. I am planning to take Friday off if you wanted to have a call this week regarding the ACR PA.

Patrick

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Wednesday, September 30, 2020 10:03 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Fwd: RE ACR Draft PA

Patrick. Good Morning. Please give me a call at 205 288 0067. Thanks. Bill

Bill Gardner
Alabama Power
wsgardne@southernco.com
Get Outlook for iOS

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Tuesday, September 29, 2020 5:31:29 PM
To: Gardner, William S. <WSGARDNE@southernco.com>
Subject: RE: RE ACR Draft PA

EXTERNAL MAIL: Caution Opening Links or Files

Good morning Bill,

Hope all is well! We got through Hurricane Sally relatively unscathed, but, find myself trying to catch up on work! I am working on some recent comments from the GA SHPO and had a question for you. One of their comments suggested that APC be an invited signatory to the PA and I so I wanted to run that by you. I am really trying to limit APC's role to consultation and ensure there are no cost obligations on your part. However, If you guys would prefer being an invited signatory let me know.

Patrick

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Wednesday, September 2, 2020 4:59 PM

To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE ACR Draft PA

Patrick – APC is still reviewing the Draft PA. Please provide me the best number to reach you.

Thanks, Bill

Bill Gardner
Alabama Power Company

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 02, 2020 11:26 AM
To: Gardner, William S. <WSGARDNE@southernco.com>
Subject: RE: FERC Filing: Holt HPMP

EXTERNAL MAIL: Caution Opening Links or Files

Hi William,

I hope you are doing well!

Sorry it has taken so long to get back to you on this. Do you need official correspondence on Army letterhead for this?

I have attached the latest draft of the ACR PA with AL and GA SHPOs comments. The have both indicated that they are close to signing.

Patrick

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Tuesday, August 18, 2020 2:15 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] FW: FERC Filing: Holt HPMP

Patrick – attached is the FERC filing for Alabama Power Company's Holt Historic Properties Management Plan (HPMP) in accordance with Article 409 of the Holt Project license (FERC Project No. 2203)

APC received your email stating that you had no comments regarding the HPMP.

Please provide a concurrence letter regarding the final HPMP for the Holt Project.

Thanks, Bill

Bill Gardner
Alabama Power Company
Environmental Affairs
205-288-0067
wsgardne@southernco.com

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 7, 2020 9:24 AM
To: McBride, Amanda; Sipes, Eric
Subject: Allatoona, Weiss, and Logan Martin PA

Follow Up Flag: Follow up
Flag Status: Flagged

Good morning Amanda and Eric,

I hope all as well,

I submitted an updated draft ACR PA to you yesterday and just wanted to check in and see if you expected to have any additional comments forthcoming. The most recent draft had a couple of comments from the GA SHPO and they have indicated that they are close to signing. I have also been coordinating with Alabama Power and trying to get their final comments this week and I know everyone will want to see any resulting changes from that consultation. I have also provided the recent draft to the Tribes as well, but, have not received any comments. I am trying to get a better idea from all of the consulting parties and outline a timeline for execution. Thank you,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Sipes, Eric <Eric.Sipes@ahc.alabama.gov>
Sent: Wednesday, October 7, 2020 10:33 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA); McBride, Amanda
Subject: [Non-DoD Source] RE: Allatoona, Weiss, and Logan Martin PA

Patrick,

Unless there are any significant changes, I think that we are close.

Thanks,
Eric

Eric D. Sipes
Assistant State Archaeologist
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, AL
36130-0900 (US Post)
36104 (Courier)
Ph 334.230.2667, Fax 334.262.1083
Eric.Sipes@ahc.alabama.gov
Blockedhttp://ahc.alabama.gov

ALABAMA HISTORICAL COMMISSION
THE STATE HISTORIC PRESERVATION OFFICE

Find out about AHC's newest mapping initiative here: Blockedhttps://ahc.alabama.gov/historicpreservationmap.aspx

---

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, October 07, 2020 9:24 AM
To: McBride, Amanda <Amanda.McBride@ahc.alabama.gov>; Sipes, Eric <Eric.Sipes@ahc.alabama.gov>
Subject: Allatoona, Weiss, and Logan Martin PA

Good morning Amanda and Eric,

I hope all as well,

I submitted an updated draft ACR PA to you yesterday and just wanted to check in and see if you expected to have any additional comments forthcoming. The most recent draft had a couple of comments from the GA SHPO and they have indicated that they are close to signing. I have also been coordinating with Alabama Power and trying to get their final comments this week and I know everyone will want to see any resulting changes from that consultation. I have also provided the recent draft to the Tribes as well, but, have not received any comments. I am trying to get a better idea from all of the consulting parties and outline a timeline for execution. Thank you,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Monday, October 19, 2020 8:09 AM
To: Dixon, Jennifer
Subject: RE: Emailing: ACR PA DRAFT 10 19 2020
Attachments: APC Edits ACR PA DRAFT no maps 10 14 20.docx

Good morning Jennifer,

Hope you had a good weekend,

I have attached the latest draft of the ACR PA with comments form the Alabama Power Co. addressed. There were minor changes in the text of the agreement and Appendix B was added. App. B summary tables of site data collected during the background research. The maps have not changed and are not included with this draft. I have not received any additional comments from the Tribes and Alabama SHPO will not be providing any more comments.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>

Sent: Wednesday, September 16, 2020 4:19 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Tuesday, October 20, 2020 7:36 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 10 19 2020

Thanks, Patrick. We'll do one last review and let you know.

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Monday, October 19, 2020 9:09 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 10 19 2020

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning Jennifer,

Hope you had a good weekend,

I have attached the latest draft of the ACR PA with comments form the Alabama Power Co. addressed. There were minor changes in the text of the agreement and Appendix B was added. App. B summary tables of site data collected during the background research. The maps have not changed and are not included with this draft. I have not received any additional comments from the Tribes and Alabama SHPO will not be providing any more comments.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 16, 2020 4:19 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 10:29 AM
To: Jennifer Dixon
Subject: RE: Emailing: ACR PA DRAFT 10 19 2020
Attachments: ACR PA DRAFT 10 21 2020.docx

Hi Jennifer,

Attached is draft of the PA that went through an internal USACE review. I has very minor editorial changes from the last version I sent to you. These include changing Corps to USACE and ft to feet. I just want to make sure there are no surprises for anyone. Thanks,

Patrick

-----Original Message-----
From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Tuesday, October 20, 2020 7:36 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 10 19 2020

Thanks, Patrick. We'll do one last review and let you know.

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Monday, October 19, 2020 9:09 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 10 19 2020

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning Jennifer,

Hope you had a good weekend,

I have attached the latest draft of the ACR PA with comments form the Alabama Power Co. addressed. There were minor changes in the text of the agreement and Appendix B was added. App. B summary tables of site data collected during the background research. The maps have not changed and are not included with this draft. I have not received any additional comments from the Tribes and Alabama SHPO will not be providing any more comments.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 16, 2020 4:19 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Wednesday, October 21, 2020 12:05 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 10 19 2020

Appreciate that! We'll put it with the recent submittal.

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, October 21, 2020 11:29 AM
To: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 10 19 2020

Hi Jennifer,

Attached is draft of the PA that went through an internal USACE review. I has very minor editorial changes from the last version I sent to you. These include changing Corps to USACE and ft to feet. I just want to make sure there are no surprises for anyone. Thanks,

Patrick

-----Original Message-----
From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Tuesday, October 20, 2020 7:36 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 10 19 2020

Thanks, Patrick. We'll do one last review and let you know.

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager

Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Monday, October 19, 2020 9:09 AM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 10 19 2020

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning Jennifer,

Hope you had a good weekend,

I have attached the latest draft of the ACR PA with comments form the Alabama Power Co. addressed. There were minor changes in the text of the agreement and Appendix B was added. App. B summary tables of site data collected during the background research. The maps have not changed and are not included with this draft. I have not received any additional comments from the Tribes and Alabama SHPO will not be providing any more comments.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 16, 2020 4:19 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 10:32 AM
To: Sipes, Eric
Cc: McBride, Amanda
Subject: ACR PA
Attachments: ACR PA DRAFT 10 21 2020.docx

Hi Eric,

I have attached the latest draft of the Allatoona Reallocation, Logan Martin and Weiss WCM Updates PA that includes Alabama Power Co's (APC) review. APC and Georgia SHPO have indicated that they will not have any additional comments and I have provided the attached draft to them for back-check. I have also dent it out to the Tribes. I believe we are very close to signing and will let you know once I hear from Georgia SHPO. Please let me know if you have any questions. Thank you,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 12:19 PM
To: 106NAGPRA@astribe.com
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR project area map plate 2.pdf; ACR plate 1 revised.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Devon Frazier,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:52 PM
To: '106NAGPRA@astribe.com' <106NAGPRA@astribe.com>
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Devon Frazier,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:07 PM

To: 106NAGPRA@astribe.com
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Devon Frazier,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Absentee-Shawnee Tribe of Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 12:22 PM
To: celestine.byrant@actribe.org; histpres@actribe.org
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR plate 1 revised.pdf; ACR project area map plate 2.pdf; ACR PA DRAFT 10 21 2020.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Bryant J. Celestine,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:50 PM
To: 'celestine.byrant@actribe.org' <celestine.byrant@actribe.org>; 'histpres@actribe.org' <histpres@actribe.org>
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Mr. Bryant J. Celestine,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)

Sent: Friday, July 10, 2020 2:41 PM
To: celestine.byrant@actribe.org; histpres@actribe.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Mr. Bryant J. Celestine

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Alabama-Coushatta Tribes of Texas would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank You,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 12:26 PM
To: jlowe@alabama-quassarte.org
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR plate 1 revised.pdf; ACR project area map plate 2.pdf; ACR PA DRAFT 10 21 2020.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Janice Lowe,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:48 PM
To: jlowe@alabama-quassarte.org
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Janice Lowe,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:45 PM

To: jlowe@alabama-quassarte.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Janice Lowe,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Alabama-Quassarte Tribal Town would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank You,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 12:29 PM
To: pcross@caddonation.org
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR plate 1 revised.pdf; ACR project area map plate 2.pdf; ACR PA DRAFT 10 21 2020.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Cross,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:44 PM
To: Caddo Nation <pcross@caddonation.org>
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Cross,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:48 PM

To: Caddo Nation <pcross@caddonation.org>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Cross,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Caddo Nation, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 12:54 PM
To: elizabeth-toombs@cherokee.org
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Toombs,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:41 PM
To: Elizabeth Toombs <elizabeth-toombs@cherokee.org>
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Toombs,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:53 PM

To: elizabeth-toombs@cherokee.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Toombs,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Cherokee Nation, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 12:58 PM
To: Karen.Brunso@chickasaw.net
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Brunso,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:39 PM
To: 'Karen.Brunso@chickasaw.net' <Karen.Brunso@chickasaw.net>; hpo@chickasaw.net
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Brunso,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 2:57 PM

To: Karen Brunso <Karen.Brunso@chickasaw.net>; hpo@chickasaw.net
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Brunso

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Chickasaw Nation would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 1:01 PM
To: thpo@chitimacha.gov
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Walden,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:38 PM
To: 'thpo@chitimacha.gov' <thpo@chitimacha.gov>
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Walden,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:01 PM

To: thpo@chitimacha.gov
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Walden,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Chitimacha Tribe, Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 1:10 PM
To: Ian Thompson; Lindsey Bilyeu
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Dr. Thompson and Ms. Bilyeu,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:37 PM
To: 'ithompson@choctawnation.com' <ithompson@choctawnation.com>; 'lbilyeu@choctawnation.com' <lbilyeu@choctawnation.com>
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Dr. Thompson and Ms. Bilyeu,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)

Sent: Friday, July 10, 2020 3:16 PM
To: Ian Thompson <ithompson@choctawnation.com>; Lindsey Bilyeu <lbilyeu@choctawnation.com>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Dr. Thompson and Ms. Bilyeu,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Choctaw Nation of Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 1:13 PM
To: Linda Langley
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Langley,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:32 PM
To: Linda Langley <LLangley@coushatta.org>
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Langley,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:19 PM

To: Linda Langley <LLangley@coushatta.org>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Langley,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Coushatta Tribe of Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 1:17 PM
To: Yerka, Stephen
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Yerka,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:26 PM
To: Yerka, Stephen <syerka@nc-cherokee.com>
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Yerka,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:23 PM

To: Yerka, Stephen <syerka@nc-cherokee.com>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Yerka,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Eastern Band of the Cherokee Nation would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Wednesday, October 21, 2020 1:20 PM
To:	'Eastern Shawnee Tribe of Oklahoma'
Subject:	FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Mr. Barnes,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:25 PM
To: Eastern Shawnee Tribe of Oklahoma <bbarnes@estoo.net>
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Barnes,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:25 PM

To: Eastern Shawnee Tribe of Oklahoma <bbarnes@estoo.net>
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Barnes,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Eastern Shawnee Tribe of Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Wednesday, October 21, 2020 1:24 PM
To:	ashively@jenachoctaw.org
Subject:	FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Ms. Shively,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:24 PM
To: ashively@jenachoctaw.org
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Shively,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:27 PM

To: ashively@jenachoctaw.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Shively,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Jena Band of Choctaw Indians, Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 1:24 PM
To: ashively@jenachoctaw.org
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Shively,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:24 PM
To: ashively@jenachoctaw.org
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Shively,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:27 PM

To: ashively@jenachoctaw.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Shively,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Jena Band of Choctaw Indians, Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 1:27 PM
To: david.cook@kialegeetribe.net
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Cook,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:23 PM
To: david.cook@kialegeetribe.net
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Cook,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:29 PM

To: david.cook@kialegeetribe.net
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Cook,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Kialegee Tribal Town, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Wednesday, October 21, 2020 1:30 PM
To:	KCarleton@choctaw.org
Subject:	FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Mr. Carleton,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:22 PM
To: Carleton, Ken <KCarleton@choctaw.org>
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Carleton,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:35 PM

To: kcarleton@choctaw.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Carleton,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Mississippi Band of Choctaw Indians would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Wednesday, October 21, 2020 1:34 PM
To:	section106@mcn-nsn.gov
Subject:	FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Ms. Lowe-Zepeda,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:19 PM
To: section106@mcn-nsn.gov
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Lowe-Zepeda,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:37 PM

To: section106@mcn-nsn.gov
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Lowe-Zepeda

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Muscogee (Creek) Nation would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 1:37 PM
To: lhaikey@pci-nsn.gov
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Haikey,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:18 PM
To: lhaikey@pci-nsn.gov
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Haikey,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:43 PM

To: lhaikey@pci-nsn.gov
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Haikey,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Poarch Band of Creek Indians would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 1:40 PM
To: thpo@tttown.org
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Cloud,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:17 PM
To: thpo@tttown.org
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Cloud,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:49 PM

To: thpo@tttown.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Cloud,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Thlopthlocco Tribal Town would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Wednesday, October 21, 2020 1:44 PM
To: earlii@tunic.org
Subject: FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments: ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Barbry,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:17 PM
To: earlii@tunic.org
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Barbry,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:51 PM

To: earlii@tunic.org
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Mr. Barbry,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Tunica-Biloxi Indian Tribe of Louisiana would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From:	O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent:	Wednesday, October 21, 2020 1:47 PM
To:	tonya@shawnee-tribe.com
Subject:	FW: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project
Attachments:	ACR PA DRAFT 10 21 2020.docx; ACR plate 1 revised.pdf; ACR project area map plate 2.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Ms. Tipton,

I am writing to you provide the most recent draft of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual Update Project. The revisions in this iteration of the PA are based on recent comments provided by the Alabama Power Company APC and Georgia SHPO. The Alabama and Georgia SHPOs and the APC have indicated that they will likely not have any additional comments and are currently back checking the attached version of the PA to ensure all comments have been adequately addressed. I expect that the PA will be finalized for signature soon. Please feel free to contact me if you have any comments, concerns, or need any additional information. Thank you,

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Tuesday, October 6, 2020 2:16 PM
To: 'tonya@shawnee-tribe.com' <tonya@shawnee-tribe.com>
Subject: RE: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Tipton,

I hope this email finds you well!

I am writing to provide you with the most recent version of the Programmatic Agreement (PA) for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The Georgia SHPO has indicated that they are close to signing the agreement based on the revisions in the attached draft. I am also coordinating with the Alabama Power Company and the Alabama SHPO to execute this agreement as soon as possible. Please let me know if you have any questions or need any additional information.

Sincerely,

Patrick

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Friday, July 10, 2020 3:46 PM

To: tonya@shawnee-tribe.com
Subject: Revised Programmatic Agreement, Allatoona Reallocation and Logan Martin and Weiss Reservoir WCM Updates Project

Dear Ms. Tipton,

I am writing to provide you with a revised copy of the Programmatic Agreement (PA) the Army Corps, Mobile District is seeking to execute with the Alabama and Georgia SHPOs for the Allatoona Reservoir Reallocation and Logan Martin and Weiss Reservoirs Water Control Manual (WCM) Update Project (Project). The initial draft of the PA was mailed to the SHPOs, Federally Recognized Tribes, and other interested parties on November 18, 2019 (Attached for your convenience). The attached version of the PA has been revised based on comments provided from interested consulting parties. I have attached a word copy of the PA that include comments from the SHPOs and how I addressed them in track changes for your review and respectfully request any comments or concerns you may have. Also, I hope the Shawnee Tribe, Oklahoma would consider being a concurring party to this agreement.

The primary goals of this agreement are to adequately consider the effects of this project through initiating a study of a subsample of sites in order to differentiate the potential effects of the project from the ongoing impacts of current operations (if possible) and resolve any adverse effects through the use of Alabama Power Company's (APC) Historic Properties Management Plan (HPMP) and shoreline monitoring program for Logan Martin and Weiss reservoirs and the Army Corps, Mobile Districts Integrated Cultural Resources Management Plan (ICRMP) for Allatoona Lake and our yearly site inspection program. The study would identify sites possessing various elements that could enable us to discern the undertaking's impacts, that will provide data or information and recommendations for future shoreline monitoring and site inspections, and that could also provide useful information for recommending future mitigation strategies for Historic Properties. Since this project is a study that will potentially result in the reallocation of Allatoona Reservoir's water storage and WCM updates for Logan Martin and Weiss reservoirs, it is much more limited in scope than a construction project and it will be extremely difficult to conduct any cultural resources management work for the Project after the reallocation or WCMs are implemented. We think appending information to or eventually updating ACR's HPMP or the Corps ICRMP to address these sort of actions, where effects may not be clearly discernable, is the best way to approach cultural resources concerns for these types of Projects.

While we are trying to appropriately consider the effects of the project, we are also concerned with appropriately scaling the cultural resource management efforts to the Undertaking. This is because the project represents operational changes to reservoirs utilizing existing facilities and precludes any construction related ground disturbance, because the project will result in the same type of impacts as current operations that may not be distinguishable from each other, and the project's Area of Potential Effect is extremely large. Please let me know if you need any additional information regarding this project. Thank you,

Sincerely,

Patrick

Patrick O'Day, PhD
Archaeologist
US Army Corps of Engineers
Planning & Inland Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
☎(251)690-2326
Cell(251)604-2159

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Thursday, October 29, 2020 12:09 PM
To: Jennifer Dixon
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

Follow Up Flag: Follow up
Flag Status: Flagged

Thanks Jennifer,

Are we looking at another 30 days? My command is hoping to certify the project by the end of November.

Thanks

Patrick

-----Original Message-----
From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Thursday, October 29, 2020 11:37 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

With that updated one, our system pushed our due date back a bit. It is currently out for review, just waiting on archaeology to finish!

Thanks!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Thursday, October 29, 2020 12:28 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>

Subject: RE: Emailing: ACR PA DRAFT 8 27 20

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Jennifer,

I hope all is well!

I just wanted to check in and see if you have had a chance to look at the last draft of the PA.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 16, 2020 4:19 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Sent: Thursday, October 29, 2020 1:25 PM
To: Jennifer Dixon
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Again Jennifer,

Thanks for the update and sorry to bug you with this. Is there potential for another 30 review period after mid-November? Thanks again,

Patrick

-----Original Message-----
From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Thursday, October 29, 2020 1:05 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

30 days from that last one you sent, which I think puts us at mid-November? Like I said, one of the reviews is done already, so it's just waiting on the other. It may be earlier than that, depending on when that one is done.

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Thursday, October 29, 2020 1:09 PM
To: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

Thanks Jennifer,

Are we looking at another 30 days? My command is hoping to certify the project by the end of November.

Thanks

Patrick

-----Original Message-----
From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Thursday, October 29, 2020 11:37 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

With that updated one, our system pushed our due date back a bit. It is currently out for review, just waiting on archaeology to finish!

Thanks!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Thursday, October 29, 2020 12:28 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Jennifer,

I hope all is well!

I just wanted to check in and see if you have had a chance to look at the last draft of the PA.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 16, 2020 4:19 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Thursday, October 29, 2020 11:37 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

With that updated one, our system pushed our due date back a bit. It is currently out for review, just waiting on archaeology to finish!

Thanks!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Thursday, October 29, 2020 12:28 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Jennifer,

I hope all is well!

I just wanted to check in and see if you have had a chance to look at the last draft of the PA.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM

To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 16, 2020 4:19 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Thursday, October 29, 2020 1:05 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

30 days from that last one you sent, which I think puts us at mid-November? Like I said, one of the reviews is done already, so it's just waiting on the other. It may be earlier than that, depending on when that one is done.

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Thursday, October 29, 2020 1:09 PM
To: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

Thanks Jennifer,

Are we looking at another 30 days? My command is hoping to certify the project by the end of November.

Thanks

Patrick

-----Original Message-----
From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Thursday, October 29, 2020 11:37 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

With that updated one, our system pushed our due date back a bit. It is currently out for review, just waiting on archaeology to finish!

Thanks!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Thursday, October 29, 2020 12:28 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Jennifer,

I hope all is well!

I just wanted to check in and see if you have had a chance to look at the last draft of the PA.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 16, 2020 4:19 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Thursday, October 29, 2020 1:40 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

I think we're very close. If anything, should be some easy changes and ready to sign at that point

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Thursday, October 29, 2020 2:25 PM
To: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

Hi Again Jennifer,

Thanks for the update and sorry to bug you with this. Is there potential for another 30 review period after mid-November? Thanks again,

Patrick

-----Original Message-----
From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Thursday, October 29, 2020 1:05 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

30 days from that last one you sent, which I think puts us at mid-November? Like I said, one of the reviews is done already, so it's just waiting on the other. It may be earlier than that, depending on when that one is done.

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Thursday, October 29, 2020 1:09 PM
To: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

Thanks Jennifer,

Are we looking at another 30 days? My command is hoping to certify the project by the end of November.

Thanks

Patrick

-----Original Message-----
From: Jennifer Dixon <Jennifer.Dixon@dca.ga.gov>
Sent: Thursday, October 29, 2020 11:37 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

With that updated one, our system pushed our due date back a bit. It is currently out for review, just waiting on archaeology to finish!

Thanks!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Thursday, October 29, 2020 12:28 PM
To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Jennifer,

I hope all is well!

I just wanted to check in and see if you have had a chance to look at the last draft of the PA.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Wednesday, September 16, 2020 3:26 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] RE: Emailing: ACR PA DRAFT 8 27 20

Thanks, Patrick. So just to make sure I understand. Since we sent that last set of comments, nothing has changed with the document, it was simply accepting the changes and cleaning it up? For some reason I was thinking there were a few changes between then and now, but maybe not.

Thanks again!

Jennifer Dixon, MHP, NCIDQ
LEED Green Associate

Program Manager
Environmental Review & Preservation Planning

Historic Preservation Division
(770) 389-7851 | F: (770) 389-7878
2610 Georgia Highway 155 SW
Stockbridge, Georgia 30281

Facebook . Twitter . Instagram
Purchase your Historic Preservation license plate today!

A division of the
GEORGIA DEPARTMENT OF NATURAL RESOURCES

-----Original Message-----
From: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Sent: Wednesday, September 16, 2020 4:19 PM

To: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Subject: RE: Emailing: ACR PA DRAFT 8 27 20

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

HI Jennifer,

I hope the attached is ok. My email has been hit or miss this week.

Patrick

-----Original Message-----
From: Dixon, Jennifer <Jennifer.Dixon@dnr.ga.gov>
Sent: Monday, September 14, 2020 10:55 AM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA) <Patrick.M.O'Day@usace.army.mil>
Subject: [Non-DoD Source] Emailing: ACR PA DRAFT 8 27 20

Hey Patrick,

We started to go over this, but with all the edits still showing from previous reviews, it is starting to get really confusing. Is it possible to get a version that has accepted all past edits and only shows the recent edits so that we know what we are looking at?

Any help would be appreciated. And if you have any questions, let me know! Thanks!

Jenn

Your message is ready to be sent with the following file or link attachments:

ACR PA DRAFT 8 27 20

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

O'DAY, Patrick Michael CIV USARMY CESAM (USA)

From: Gardner, William S. <WSGARDNE@southernco.com>
Sent: Sunday, November 1, 2020 4:41 PM
To: O'DAY, Patrick Michael CIV USARMY CESAM (USA)
Cc: McVicar, Ashley M; Samuels, Mary (Balch)
Subject: [Non-DoD Source] FW: ACR PA Latest Edits
Attachments: APC Edits ACR PA DRAFT no maps 10 22 20.docx

Patrick – I have attached an edited version of the Draft ACR PA you forwarded to Alabama Power to review and provide comments. Please review the comments provided and if you have any questions, please contact me.

Alabama Power is looking forward to continue working with you to finalize the respective ACR PA.

Bill

Bill Gardner – Senior Engineer
Alabama Power Company
Environmental Affairs
205-257-4082 office
205-288-0067 cell
wsgardne@southernco.com

Page intentionally blank

Attachment 5. Correspondence with USFWS Pursuant to Compliance with Section 7 of the Endangered Species Act

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

REPLY TO
ATTENTION OF:

November 25, 2019

Inland Environment Team
Planning and Environment Division

Mr. William Pearson
Field Supervisor
U.S. Fish and Wildlife Service
Alabama Ecological Services Field Office
1208-B Main Street
Daphne, Alabama 36526

Dear Mr. Pearson:

The U.S. Army Corps of Engineers (USACE), Mobile District submits this letter pursuant to consultation procedures of Section 7 of the Endangered Species Act for the Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Project Water Control Manuals.

In 2015, USACE, Mobile District completed an update to the Master Water Control Manual including a supporting Environmental Impact Statement for the Alabama-Coosa-Tallapoosa (ACT) River Basin. Informal Section 7 consultation was also conducted at that time with a "*no effect*" or a "*may affect, not likely to adversely affect*" determination. Two actions, however, were deferred from the 2015 effort pending completion of additional detailed studies. Those actions were: 1) evaluation of a request from the State of Georgia to reallocate water supply storage in Allatoona Lake, and 2) evaluation of proposed revisions to flood operations at Alabama Power Company projects: Weiss and Logan Martin. Those requests are evaluated as the proposed action in the current study.

As discussed in the enclosed Biological Assessment (BA), we believe that for the listed species and/or designated critical habitat occurring within the Region of Influence (ROI) of the ACT Basin for the current study, implementation of the proposed action will result in either a "*no effect*" or a "*may affect, not likely to adversely affect*" determination for listed species and a "*may affect, not likely to adversely modify or destroy*" determination for designated critical habitat. We request your concurrence with each of these determinations through informal consultation; the BA is being provided due to complexity of the study and large number of listed species within the ROI.

If you have any questions regarding the BA or wish to discuss the proposed action in more detail, please contact Ms. Tonya Dunn at (251) 690-2040 or email at tonya.n.dunn@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental Division

Enclosure

Biological Assessment

Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Project Water Control Manuals

November 2019

Prepared For:
USACE, Mobile District
109 Saint Joseph Street
Mobile, AL 36602

Prepared By:
Tetra Tech, Inc.
1899 Powers Ferry Rd SE, Suite 400
Atlanta, Georgia 30339

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

This purpose of this biological assessment (BA) is to assess the effects of two specific actions that were deferred from consideration during the update of the Alabama-Coosa-Tallapoosa (ACT) River Basin Master Water Control Manual, which was completed in 2015. These actions, which were deferred pending completion of additional detailed studies are (1) a request from the State of Georgia to reallocate additional reservoir storage in Allatoona Lake to municipal and industrial (M&I) water supply and (2) an Alabama Power Company (APC) request to modify federally authorized flood operations at the APC Weiss and Logan Martin projects. These requests are evaluated in the *Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Project Water Control Manuals — Draft Feasibility Report and Integrated Supplemental Environmental Impact Statement* (FR/SEIS).

The overall study area for the Draft FR/SEIS is the Alabama-Coosa-Tallapoosa (ACT) River Basin. The ACT River Basin comprises the Alabama, Coosa, and Tallapoosa rivers and all areas within the basin boundaries. It stretches from the headwaters of the Coosa and Tallapoosa rivers downstream to the mouth of the Alabama River, where that river joins the Tombigbee River to form the Mobile River. At the ACT River Basin's confluence with the Tombigbee River, it has a drainage area of 22,739 square miles (sq mi) and covers portions of the states of Alabama, Georgia, and Tennessee. ***Figure 1-1*** shows the ACT River Basin and identifies reservoir projects in the basin.

The United States Army Corps of Engineers (USACE) operates the following five multipurpose reservoir projects in the ACT River Basin:

- Allatoona Dam and Lake, GA (Etowah River)
- Carters Dam and Lake/Carters Reregulation Dam, GA (Coosawattee River) (functions as a single system).
- Robert F. Henry Lock and Dam (L&D) and R.E. "Bob" Woodruff Lake, AL (Alabama River)
- Millers Ferry L&D and William "Bill" Dannelly Lake, AL (Alabama River)
- Claiborne L&D and Lake, AL (Alabama River).

In addition, USACE is responsible for navigation channel maintenance for the portion of the Alabama River from river mile (RM) 0 to Claiborne L&D at RM 72 and within the three L&D pools upstream to the head of navigation at Montgomery, AL.

APC operates 11 reservoir projects in the ACT River Basin for the primary purpose of generating hydroelectric power (hydropower), although those projects provide other public benefits as well. Under Public Law (P.L.) 83-436 (June 28, 1954), USACE is responsible for operational oversight of flood risk management (formerly referred to as flood control) and commercial navigation support for four of the APC reservoir projects in the ACT River Basin:

- Weiss Dam and Lake, AL (Coosa River)
- H. Neely Henry Dam and Lake, AL (Coosa River)
- Logan Martin Dam and Lake (Coosa River)
- R.L. Harris Dam and Lake (Tallapoosa River).

The USACE Master Water Control Manual (Master Manual) for the ACT River Basin and individual project Water Control Manuals (WCMs) guide operations at the five USACE reservoir projects and the four APC reservoir projects with federally authorized flood risk management and navigation support purposes.

The update of the ACT River Basin Master Manual and project WCMs, supported by an Environmental Impact Statement (EIS), was completed in May 2015. The USACE Mobile District submitted a BA to the U.S. Fish and Wildlife Service for the proposed Master Manual update on February 18, 2014 (**Appendix A**), as well as an addendum to the BA on March 19, 2014 (**Appendix B**). USFWS completed informal consultation under Section 7 of the Endangered Species Act (ESA) by letter dated March 20, 2014, concurring with the BA as amended (**Appendix C**). The deferred actions described above were not addressed in the 2014 BA or in the USFWS March 20, 2014 concurrence letter.

The Draft FR/SEIS addresses the benefits, costs, and environmental effects associated with a Tentatively Selected Plan (TSP) and alternatives to address the two actions deferred from the 2015 ACT River Basin Master Manual update. The Draft FR/SEIS describes the entire ACT River Basin as the overall study area, consistent with the previous WCM update process, and maintains a basin-wide focus in considering the environmental effects of the proposed actions. However, the specific federal actions considered in the Draft FR/SEIS will affect only a portion of the overall ACT River Basin, referred to as the Region of Influence (ROI). This ROI is synonymous with the action area. It is defined later in this section and is fully described in Section 4.0 and shown in ***Figure 4-1***.

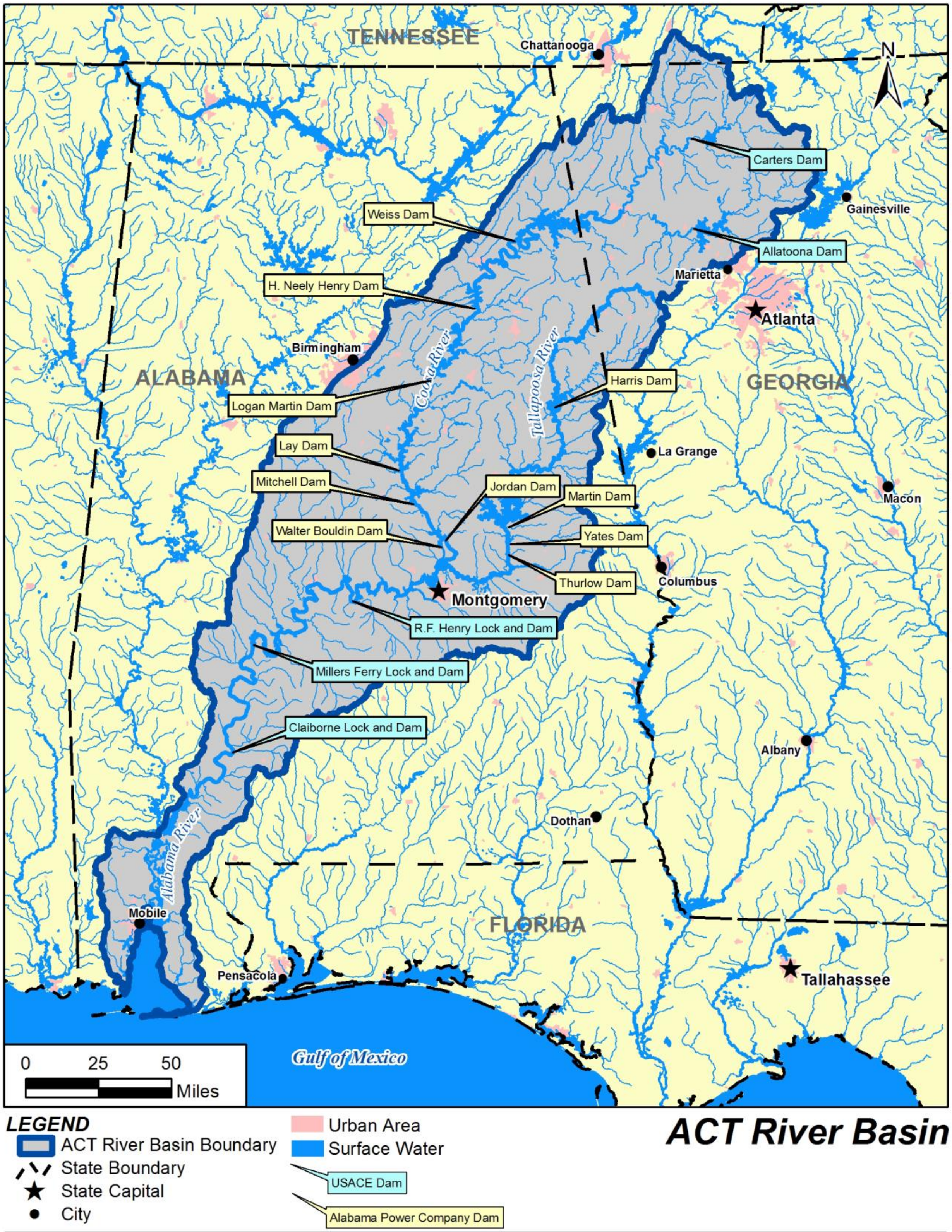


Figure 1-1. Map of ACT River Basin and Project Locations.

The ACT River Basin supports a wide variety of wildlife and is home to approximately 230 species that are protected by the federal government and the states according to the 1998 draft EIS and the 2003 Biological Assessment addressing project operations in the ACT River Basin (USACE Mobile District, 1998) (USACE Mobile District, 2003). The Draft FR/SEIS and this BA focus on the Coosa River and Etowah River basins, which includes the ROI. According to recent USFWS Official Species Lists, there are 57 federally protected species associated with these river basins, which have the greatest potential to be affected by changes in water management operations in the basin. These species are listed in ***Table 1-1***, with their state status. It should be noted that ***Table 1-1*** has been updated from the corresponding table in the main report and in Appendix E of the Draft FR/SEIS based on corrections and updated species lists. Of the 57 potentially affected species, 20 are endemic to the ACT River Basin. Critical habitat for all federally protected species in the ACT River Basin is shown in ***Figure 5-1***.

Table 1-1. Listed Species Potentially Affected by USACE Proposed Action

Scientific name	Common name[a]	Endemic[b]	Federal status[c]	Alabama status[c]	Tennessee status[c]	Georgia status[c]
Mammals						
Myotis grisescens	**Gray Bat*	—	E	SP	—	E
Myotis sodalis	**Indiana Bat*	—	E	SP	—	E
Myotis septentrionalis	**Northern Long-Eared Bat*	—	T	SP	—	T
Birds						
Picoides borealis	**Red-Cockaded Woodpecker*	—	E	SP	—	—
Mycteria americana	**Wood Stork*	—	T	SP	—	—
Reptiles						
Clemmys muhlenbergii	*Bog Turtle*	—	SAT	—	—	E
Sternotherus depressus	*Flattened Musk Turtle*	Y	T	SP	—	—
Amphibians						
Necturus alabamensis	*Black Warrior (=sipsey Fork) Waterdog*	—	E	SP	—	—
Fish						
Percina antesella	*Amber Darter*	—	E	—	—	E
Cyprinella caerulea	**Blue Shiner*	Y	T	SP	—	E
Notropis cahabae	*Cahaba Shiner*	—	E	SP	—	—
Etheostoma scotti	**Cherokee Darter*	Y	T	—	—	T
Percina jenkinsi	*Conasauga Logperch*	Y	E	—	—	E

Scientific name	Common name[a]	Endemic[b]	Federal status[c]	Alabama status[c]	Tennessee status[c]	Georgia status[c]
Etheostoma etowahae	**Etowah Darter*	*Y*	*E*	—	—	*E*
Percina aurolineata	*Goldline Darter*	*Y*	*T*	*SP*	—	*E*
Cottus paulus	*Pygmy Sculpin*	*Y*	*T*	*SP*		
Etheostoma phytophilum	*Rush Darter*	—	*E*	*SP*	—	—
Percina tanasi	*Snail Darter*	—	*T*	*SP*	—	*E*
Etheostoma trisella	*Trispot Darter*	*Y*	*T*	*SP*	*T*	*E*
Etheostoma chermocki	*Vermilion Darter*	—	*E*	*SP*	—	—
Mussels (Clams)						
Medionidus acutissimus	**Alabama Moccasinshell*	—	*T*	*SP*	—	*T*
Medionidus parvulus	**Coosa Moccasinshell*	*Y*	*E*	*SP*	—	*E*
Villosa trabalis	*Cumberland Bean*	*N*	*E*	—	—	—
Pleurobema furvum	*Dark Pigtoe*	—	*E*	—	—	—
Lampsilis altilis	**Finelined Pocketbook*	—	*T*	—	—	—
Pleurobema hanleyianum	**Georgia Pigtoe*	*Y*	*E*	*SP*	—	*E*
Lampsilis perovalis	*Orangenacre Mucket*	—	*T*	—	—	—
Pleurobema perovatum	**Ovate Clubshell*	—	*E*	*SP*	—	—
Epioblasma othcaloogensis	**Southern Acornshell*	*Y*	*E*	*SP*	—	—
Pleurobema decisum	**Southern Clubshell*	—	*E*	*SP*	—	*E*
Pleurobema georgianum	**Southern Pigtoe*	*Y*	*E*	*SP*	—	*E*
Ptychobranchus greenii	**Triangular Kidneyshell*	—	*E*	*SP*	—	*E*
Epioblasma metastriata	**Upland Combshell*	—	*E*	*SP*	—	—
Snails						
Lioplax cyclostomaformis	*Cylindrical Lioplax (snail)*	*Y*	*E*	*SP*	—	—
Leptoxis foremani	**Interrupted (=georgia) Rocksnail*	*Y*	*E*	*SP*	—	*E*
Elimia crenatella	*Lacy Elimia (snail)*	*Y*	*T*	*SP*	—	—
Leptoxis taeniata	**Painted Rocksnail*	*Y*	*T*	*SP*	—	—
Leptoxis plicata	*Plicate Rocksnail*	—	*E*	*SP*	—	—

Scientific name	*Common name[a]*	*Endemic[b]*	*Federal status[c]*	*Alabama status[c]*	*Tennessee status[c]*	*Georgia status[c]*
Pleurocera foremani	**Rough Hornsnail*	*Y*	*E*	*SP*	—	—
Tulotoma magnifica	**Tulotoma Snail*	*Y*	*T*	*SP*	—	—
Flowering Plants						
Sarracenia rubra ssp. alabamensis	*Alabama Canebrake Pitcher-Plant*	*Y*	*E*	—	—	—
Clematis socialis	**Alabama Leather Flower*	*Y*	*E*	—	—	*E*
Spigelia gentianoides	*Gentian Pinkroot*	—	*E*	—	—	—
Arabis georgiana	**Georgia Rockcress*	—	*T*	—	—	*T*
Sarracenia oreophila	**Green Pitcher-Plant*	—	*E*	—	—	*E*
Ptilimnium nodosum	**Harperella*	—	*E*	—	—	—
Sagittaria secundifolia	*Kral's Water-Plantain*	—	*T*	—	—	*T*
Scutellaria montana	**Large-Flowered Skullcap*	—	*T*	—	—	*T*
Rhus michauxii	*Michaux's Sumac*	—	*E*	—	—	*E*
Marshallia mohrii	**Mohr's Barbara's Buttons*	—	*T*	—	—	*T*
Isotria medeoloides	*Small Whorled Pogonia*	—	*T*	—	—	*T*
Helonias bullata	*Swamp Pink*	—	*T*	—	—	*T*
Pityopsis ruthii	*Ruth's Golden Aster*	—	*E*	—	—	—
Xyris tennesseensis	**Tennessee Yellow-Eyed Grass*	—	*E*	—	—	*E*
Spiraea virginiana	*Virginia Spiraea*	—	*T*	—	—	*T*
Platanthera integrilabia	**White Fringeless Orchid*	—	*T*	—	—	*T*
Helianthus verticillatus	**Whorled Sunflower*	—	*E*	—	—	*E*

Sources: (USFWS, 2019b) (USFWS, 2019c) (USFWS, 2019d) (USFWS, 2019a) (ANHP, 2017) (ADCNR, 2019a) (GADNR, 2019) (TWRA, 2019) (Tennessee Department of State, 2016).
Notes:
a. * = Species range includes part of the ROI and the species is discussed further in Section 5.0.
b . Y = endemic to ACT River Basin.
c. Status. E = listed as endangered; SAT = similarity of appearance, threatened; SP = state protected; T = threatened.

Seven species listed in ***Table 1-1*** have been determined to have no notable range within the Coosa River or Etowah River Basins - the flattened musk turtle, black warrior waterdog, rush darter, vermilion darter, dark pigtoe, and plicate rocksnail are mainly found in the Black Warrior River Basin and the snail darter is found only in the Tennessee River Basin. These species appear in the USFWS Official Species Lists (USFWS, 2019b) (USFWS, 2019c), likely due to a slight overlap in the GIS shapefile of the ACT River Basin and the ranges of these species, however, they are not believed to inhabit the affected environment.

The rest of the species listed in ***Table 1-1*** have a dependence on the aquatic environment or occur in geographic proximity to the aquatic environments of the ACT River Basin. However, the only areas that show any water quality or water quantity effect under the proposed federal actions are the main stem of the Etowah River downstream of its confluence with Hickory Log Creek at Canton, GA; the main stem of the Coosa River downstream to its confluence with the Tallapoosa River near Montgomery, AL; and the reservoirs along those rivers. These areas comprise the ROI. Species outside of this ROI (i.e. those restricted to upland areas and tributaries to the affected rivers) will have negligible or no effect from flow regime or water quality changes and these species are not addressed in detail in this BA. For example, the pygmy sculpin is found only in Coldwater Spring and the spring run, well above the Coosa River by several tributary watersheds; and the trispot darter only inhabits tributaries and small streams. Species ranges were confirmed from maps on the U.S. Fish and Wildlife Service Environmental Conservation Online System (ECOS) website (USFWS, 2019a).

The mammals, birds, fish, mussels, snails, and plants with a current range that includes part of the ROI are identified with an asterisk in ***Table 1-1***. Details about the habitat requirements of each of these species are provided in Section 5.0 (Status of the Species/Critical Habitat). The effects analysis, detailed in Section 7.0 of this report, documents the extent and degree of water quality and quantity changes that could affect these species.

2.0 PURPOSE AND NEED

In May 2015, USACE completed a long-term effort to update the Master Manual for the ACT River Basin, including updating WCMs for all five USACE projects described in Section 1.0 and two of the four APC projects with navigation support and flood risk management purposes (H. Neely Henry Dam and Lake, and R.L. Harris Dam and Lake). WCMs for the other two APC projects, Logan Martin Dam and Lake (or Reservoir) and Weiss Dam and Lake (or Reservoir), were not updated at that time. A pending, January 24, 2013, request from the State of Georgia for additional water supply storage in Allatoona Lake was also not included within the scope of the 2015 WCM update and EIS effort.

On January 9, 2018, the U.S. District Court for the Northern District of Georgia issued a judgment in *Georgia et al. v. U.S. Army Corps of Engineers,* Civil Action No. 1:14-cv-03593, holding that USACE had unreasonably delayed taking action on Georgia’s water supply request, and directing USACE to take final action responding to that request by March 1, 2021. The Georgia Environmental Protection Division (GAEPD), representing the State of Georgia, submitted an updated request to USACE on March 30, 2018, on behalf of the Cobb County-Marietta Water Authority (CCMWA) and the City of Cartersville, GA. GAEPD requested that USACE reallocate additional reservoir storage, above the current water supply storage contract at Allatoona Lake to meet a total projected average daily water supply withdrawal demand of 94 million gallons per day (mgd) through the year 2050. Further, GAEPD maintained its request from January 2013 that USACE consider revising its storage accounting practices to provide credit for “made inflows”—returns from two water reclamation facilities in Cobb County, GA, and releases by CCMWA from the Hickory Log Creek Reservoir to the Etowah River and, subsequently, into Allatoona Lake for water supply withdrawal. The Draft FR/SEIS considers and evaluates actions necessary to respond to Georgia’s request, including reasonable alternatives.

USACE did not include updates to the WCMs for the APC Weiss and Logan Martin reservoir projects in the 2015 ACT River Basin Master Manual update because changes to flood operations proposed by APC required further detailed study of flood risk at both projects. The Draft FR/SEIS evaluates the flood risk and other impacts associated with APC’s proposal to raise the winter pool level for recreation and lower the maximum induced surcharge elevation at both the Weiss and Logan Martin projects. The results of this evaluation will provide the basis for appropriate updates to the WCMs for the APC Weiss and Logan Martin projects.

USACE has prepared documentation in compliance with the National Environmental Policy Act (NEPA) (Title 42 of the *United States Code* [U.S.C.] § 4321 *et seq.*); the Council on Environmental Quality (CEQ) regulations for implementing NEPA (Title 40 of the *Code of Federal Regulations* [CFR] Parts 1500–1508); and USACE Engineer Regulation (ER) 200-2-2, *Procedures for Implementing NEPA*, to address the environmental effects associated with the proposed actions described above. Because USACE is concurrently considering proposals to modify operations and update WCMs at three different ACT River Basin projects, USACE has evaluated the effects of those proposals through a single SEIS to supplement the Final EIS for the ACT River Basin WCM update completed in May 2015. As part of this analysis, USACE considered the effects of the proposed changes on operations of the ACT River Basin system of projects for all purposes and has revised the ACT River Basin Master Manual to incorporate the updated Allatoona Dam and Lake, Weiss Dam and Lake, and Logan Martin Dam and Lake WCMs and to reflect changes in overall system operations. Appendix A of the Draft FR/SEIS provides the three revised WCMs.

3.0 PROPOSED ACTION

The Tentatively Selected Plan (TSP) is identified as Alternative 11 in the Draft FR/SEIS. The TSP involves Allatoona Lake storage reallocation to enable withdrawals up to 94 mgd from a combination of flood storage and conservation storage, using USACE current storage accounting methodology, and modified flood operations at the APC Weiss and Logan Martin projects. An overview of the proposed changes to water supply storage at Allatoona Lake and proposed changes to flood operations at APC Weiss and Logan Martin projects are provided in Sections 3.1 and 3.2. Details on effects regarding water quantity (such as lake levels) and water quality are provided in Sections 7.5 and 7.6. Conservation measures are not proposed as part of the proposed action. Any current conservation measures that are being used in the system (fish spawning practices at Allatoona Dam and Lake, measures to promote fish passage through Claiborne Lock and Dam, etc.) are expected to continue, but will not affect protected species in the ROI with respect to the proposed action.

3.1 PROPOSED CHANGES TO WATER SUPPLY STORAGE AT ALLATOONA LAKE

In its revised water supply request to USACE on March 30, 2018, GAEPD requested that USACE enter into a storage contract providing enough storage in Allatoona Lake to enable Georgia users to sustain annual average withdrawals from the reservoir of 94 mgd through year 2050. That amount is substantially lower than the range of 124–148 mgd through year 2040 presented in the state's 2013 water supply request. This change was based on revised population estimates and dramatically lower per capita water-use values directly associated with implementing multiple water conservation and efficiency measures within the Metropolitan North Georgia Water Planning District (MNGWPD) since 2010. GAEPD also requested that USACE specify how much storage it can reallocate and explain in detail its reasoning, if it determines not to grant the entire storage capacity requested to support the stated water supply demand.

The State of Georgia recognized that the storage capacity required to support average annual withdrawals of 94 mgd will depend upon the assumptions USACE makes about the relationship between storage capacity and yield. They include assumptions about the total natural inflow to Allatoona Lake; the extent to which natural inflows are augmented by made inflows (consisting of releases from the Hickory Log Creek Reservoir and return flows to Allatoona Lake); the manner in which made inflows are allocated to users; the rule used to determine when storage space allocated to water supply users is full; and the rule used to determine each user's share of conservation storage for purposes of allocating natural inflows to the project. USACE's assumptions, which the state's request separated into two categories—made inflows and other storage accounting issues—are reflected in the storage accounting practices USACE applies at Allatoona Lake and other reservoir projects. The state disagrees with those assumptions and has requested that USACE resolve all storage accounting issues consistent with the state's position.

The state's January 2013 request sought changes to the USACE storage accounting practice and included a specific request to credit the made inflows from the Hickory Log Creek Reservoir and return flows to Allatoona Lake. Subsequent to the State of Georgia's 2013 request, the Georgia Department of Natural Resources (GADNR) promulgated rules clarifying GAEPD's authority and procedures for allocating made inflows to particular users (Georgia Compiled Rules and Regulations [Ga. Comp. R. & Regs.] 391-3-6-.07(2)(o) and (16)(a)). Pursuant to that authority, the State of Georgia has allocated certain made inflows to CCMWA, which is reflected in GAEPD Permit No. 008-1491-05 (modified Nov. 7, 2014) ("CCMWA's permit"). The State of Georgia requested that USACE honor CCMWA's permit (and any subsequent renewal), which grants CCMWA the exclusive right to impound water released from Hickory Log Creek Reservoir and certain return flows in CCMWA's existing storage space in Allatoona Lake, subject to available space in CCMWA's storage. Further, the state requested that USACE credit made inflows in accordance with any future allocations by the GAEPD.

In addition, CCMWA and the state also have other outstanding issues with USACE storage accounting practices at Allatoona Lake that are the subject of ongoing litigation between CCMWA and USACE (*Cobb County-Marietta Water Authority v. U.S. Army Corps of Engineers,* Civil Action No. 1:17-cv-400-RWS [N.D. Ga.]) (the "Storage Accounting Litigation"). The State of Georgia has requested that USACE determine that water supply storage accounts in Allatoona Lake must be full whenever conservation storage, as defined by the project's guide curve, is full. The state asserts that USACE's current storage accounting practices improperly allocate natural inflows (all inflows that are not *made inflows*) using a fixed percentage of conservation storage, even though CCMWA's *pro rata* share of conservation storage increases in the winter when the volume of conservation storage is reduced. The state has requested USACE to allocate natural inflows to users in proportion to the percentage of conservation storage held by a user at the time the inflow occurs, as defined by the top-of-conservation guide curve.

The reallocation of reservoir storage for water supply purposes could come from the conservation storage only, from a combination of conservation storage and flood storage, or from flood storage only.

3.2 PROPOSED CHANGES TO FLOOD OPERATIONS AT APC WEISS AND LOGAN MARTIN PROJECTS

APC proposes revisions to flood operation plans for the Weiss and Logan Martin projects, which include raising the winter guide curve elevation at each project, lowering the upper limit of the induced surcharge operation at each reservoir, and making some adjustments to the operating rules during flood events. Current water control plans for the Weiss and Logan Martin projects include induced surcharge curves with elevations higher than the flood easements acquired by APC at each project. APC variance requests, evaluated and approved by USACE, have been necessary to avoid/minimize exceedances of APC flood easements at these reservoirs during major flood events. USACE evaluation of, and concurrence with, the APC-proposed modifications to the Weiss and Logan Martin flood operation plans should preclude the need for such variance requests in the future.

In May 2018, USACE and APC established a Hydrologic Engineering Management Plan (HEMP) to address the long-standing issues related to flood operations at the APC Weiss and Logan Martin projects. The HEMP outlines historic events used to evaluate the higher winter pools and revised surcharge curves using the USACE Hydrologic Engineering Center Reservoir System Simulation (HEC-ResSim) model.

3.2.1 Weiss Dam and Lake

APC proposes to increase the project guide curve level during the winter months (December–February) at Weiss Dam and Lake from elevation 558 ft to elevation 561 ft and to reduce the maximum surcharge elevation (top of flood pool) from elevation 574 ft to elevation 572 ft. In addition, APC has proposed to extend the summer guide curve elevation of 564 ft from September 1 to October 1. The current maximum surcharge elevation is 2 ft higher than the APC flood easement elevation of 572 ft for Weiss Lake. The proposed changes would result in a 30-percent reduction in flood storage during the winter months and a 24-percent reduction in flood storage in the summer months. In conjunction with these elevation changes, APC proposes to modify the current Flood Regulation Schedule for Weiss Dam in order to operate with no appreciable increase in flood risk. ***Figure 3-1*** depicts the proposed changes to the project guide curve and maximum surcharge elevation, and ***Table 3-1*** summarizes the proposed changes to flood operations.

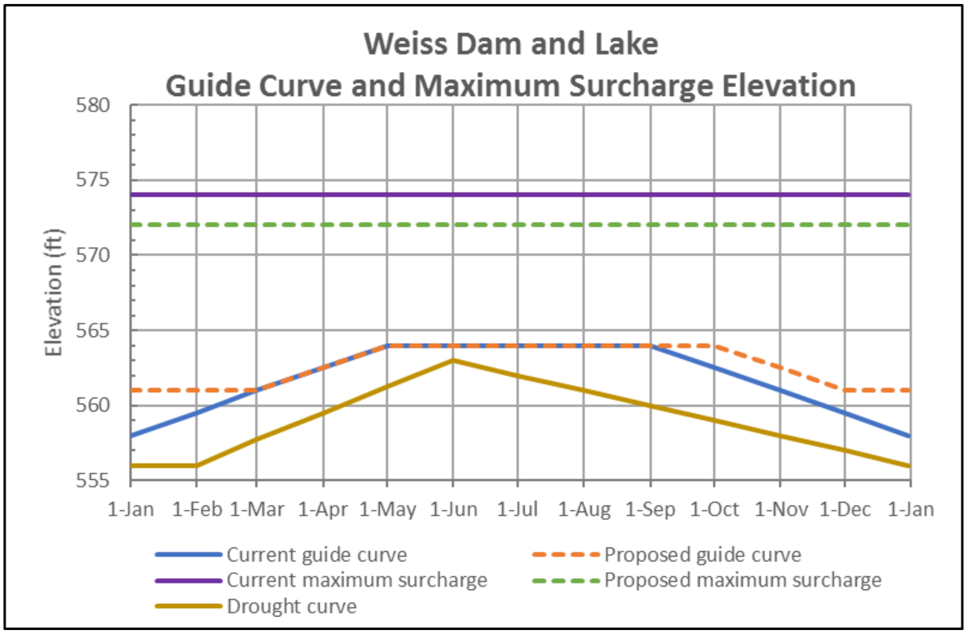


Figure 3-1. Weiss Dam and Lake—Proposed Changes to Guide Curve and Maximum Surcharge Elevation.

Table 3-1. Weiss Dam—Proposed Flood Regulation Schedule.

Rule	Condition	Outflow	Proposed Operation	Proposed change
1	Below project guide curve	Ranging up to full discharge capacity of power plant	Operate power plant as required to satisfy normal system load requirements.	None
2	At project guide curve and below elevation 564.0 ft	Ranging up to full discharge capacity of power plant	Releases shall be made through power plant at rates up to continuous operation at plant capacity (3 units at full gate) as required to keep reservoir stage at or below the project guide curve as long as the pool level is below elevation 564.0 ft.	None
3	Above project guide curve and below elevation 564.0 ft	Full discharge capacity of power plant	Releases shall be made through the power plant operating continuously at plant capacity (3 units at full gate) until reservoir stage: • Recedes to project guide curve, after which rule 2 applies, or • Reaches elevation 564.0 ft, after which rule 4 applies.	None
4	At elevation 564.0 ft	Ranging up to 40,000 cfs	Maintain reservoir stage at elevation 564.0 ft by passing the inflow up to 40,000 cfs. Releases will be made through the power plant operating continuously at plant capacity (3 units at full gate) supplemented by spillway discharge as required.	None

Rule	Condition	Outflow	Proposed Operation	Proposed change
5	Rising above elevation 564.0 ft	40,000 cfs unless higher rate is specified by induced surcharge schedule	Maintain total discharge of 40,000 cfs by discharging through the power plant operating continuously at plant capacity (3 units at full gate) supplemented by spillway discharge as required. Continue this operation until: • Reservoir stage recedes to elevation 564.0 ft, after which rule 4 applies, or • Reservoir stage and rate of inflow are such that a higher rate of outflow is required by induced surcharge schedule, in which case rule 6 applies.	None
6	Rising above elevation 564.0 ft with releases above 40,000 cfs as specified by induced surcharge schedule	As specified by induced surcharge schedule	Operate according to induced surcharge schedule, passing the required outflow through the power plant and spillway.	New surcharge curves
7	Stages downstream of Weiss exceed or are expected to exceed flood stage due to local inflows	Reduce up to 50% of surcharge schedule	Temporarily reduce the release prescribed by the plan, provided that the release will not be reduced below 50% of the amount required by the surcharge schedule and that the total addition of floodwaters stored in Weiss Lake will not exceed a volume of 22,500 cfs-days.	Entirely new rule
8	Above elevation 564.0 ft and falling	As specified by induced surcharge schedule	When the reservoir level begins to fall, maintain the gate openings in effect at the time of peak reservoir stage and continue power plant discharge in effect at that time until the reservoir level recedes to elevation 564.0 ft. When the pool recedes to elevation 564.0 ft, rule 4 applies.	None

3.2.2 Logan Martin Dam and Lake

APC proposes to increase the project guide curve level during the winter months (December–March) at Logan Martin Dam and Lake from elevation 460 ft to elevation 462 ft and to reduce the maximum surcharge elevation (top of flood pool) from elevation 477 ft to elevation 473.5 ft. The current maximum surcharge elevation is 3.5 ft higher than the APC flood easement elevation of 473.5 ft for Logan Martin Lake. The proposed changes would result in a 35-percent reduction in flood storage during the winter months and a 35-percent reduction in flood storage in the summer months. In conjunction with the elevation changes, APC proposes to modify the current Flood Regulation Schedule for Logan Martin Dam in order to operate with no appreciable increase in flood risk. ***Figure 3-2*** depicts the proposed changes to the project guide curve and maximum surcharge elevation, and ***Table 3-2*** summarizes the proposed changes to flood operations.

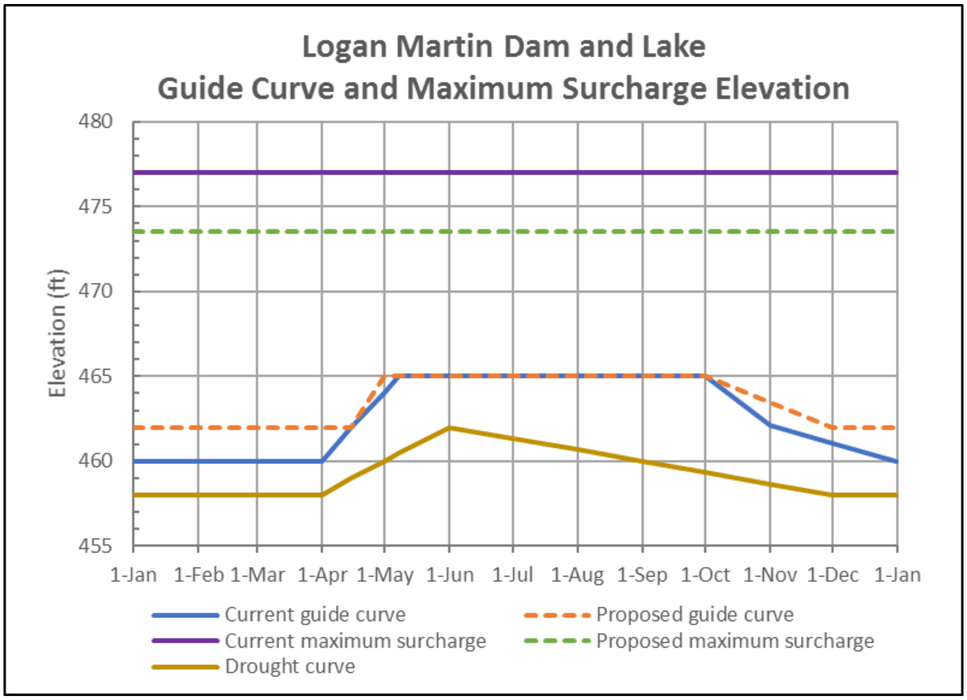


Figure 3-2. Logan Martin Dam and Lake—Proposed Changes to Guide Curve and Maximum Surcharge Elevation.

Table 3-2. Logan Martin Dam—Proposed Flood Regulation Schedule.

Rule	Condition	Outflow	Operation	Proposed change
1	Below project guide curve	Up to plant capacity.	Operate power plant as required to satisfy normal system load requirements.	None
2	Below project guide curve, Weiss Lake above elevation 564.0 ft, and inflow into Logan Martin and Weiss lakes at plant capacity and increasing	70,000 cfs	Pull Logan Martin Lake to elevation 460.0 ft by discharging 70,000 cfs. Once it is at elevation 460.0 ft, hold the elevation by passing the hourly inflow.	Entirely new rule
3	At the project guide curve elevation	Ranging up to 70,000 cfs	Maintain reservoir stage at top-of-power pool elevation by passing the inflow up to 70,000 cfs.	Maximum release increased from 50,000 cfs to 70,000 cfs
4	Above the project guide curve elevation and rising	Rate specified by induced surcharge schedule	Operate according to induced surcharge schedule passing the required outflow through the power plant and spillway.	New surcharge curves
5	Above the project guide curve elevation with downstream control in place	Reduce up to 50% of surcharge schedule	Operation dictated by high downstream stages. Reduction in release not to exceed 11,000 cfs-days in added storage.	Entirely new rule

Rule	Condition	Outflow	Operation	Proposed change
6	Above the project guide curve elevation and falling		When the reservoir level begins to fall, maintain the gate openings in effect at the time of peak reservoir stage and continue power plant discharge in effect at that time until the reservoir level recedes to flood control guide elevation.	None

4.0 ACTION AREA

USFWS regulations define “action area” as all areas affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR §402.02). The specific federal actions considered in the Draft FR/SEIS will affect only a portion of the overall ACT River Basin. HEC-ResSim and HEC-5Q model simulation results demonstrated that the effects of the proposed actions, including those of the TSP, would be limited to an ROI defined as the Etowah River at its confluence with Hickory Log Creek at Canton, GA, downstream to its confluence with the Oostanaula River at Rome, GA, including Allatoona Dam and Lake; and the Coosa River at Rome downstream to its confluence with the Tallapoosa River near Montgomery, AL (including Weiss Dam and Lake, Logan Martin Dam and Lake, and other APC reservoirs). The ROI is shown in ***Figure 4-1***.

The proposed federal actions would affect neither the Oostanaula River Basin nor the Tallapoosa River Basin. Accordingly, the action area is limited to the narrowed ROI, which is the area most likely to be affected by the proposed actions. The HEC-ResSim and HEC-5Q models also demonstrated that the proposed federal actions would have no discernable effect on hydrologic conditions, including water quality, in the Alabama River downstream of the confluence of the Coosa and Tallapoosa rivers and further downstream into the Mobile River and Bay. Accordingly, other environmental resources of interest in this portion of the ACT River Basin would not be affected by the proposed federal actions.

Along the river and lake segments in the ROI, the lateral extent of expected effects would generally include the extent of fee or easement interest in adjacent lands by USACE and APC or the base flood plain along the rivers where no fee or easement interests exist.

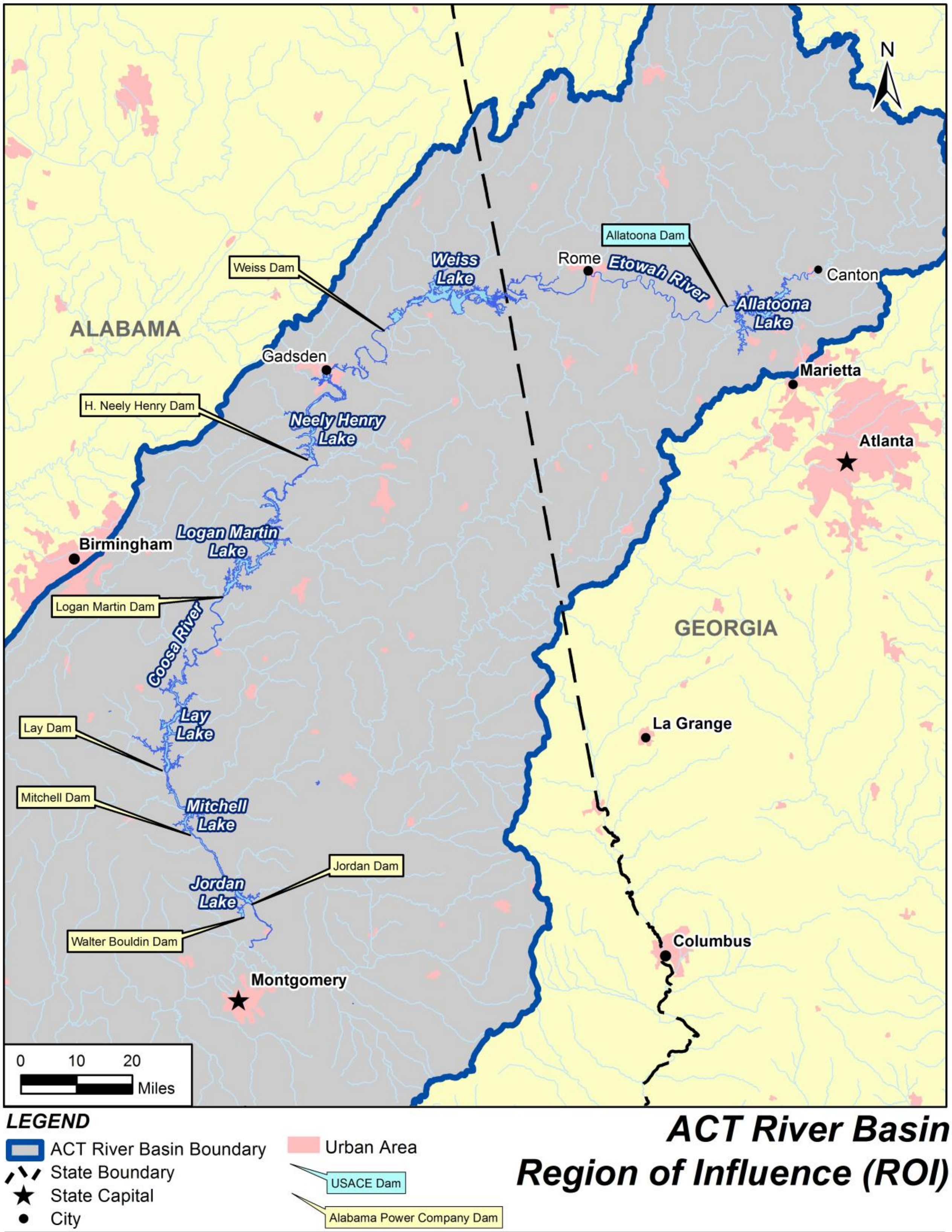


Figure 4-1. Region of Influence for Allatoona-Coosa Reallocation Study Tentatively Selected Plan***.***

5.0 STATUS OF THE SPECIES/CRITICAL HABITAT

Reservoir operations can influence two types of direct or indirect actions that could affect the habitats of federally protected species:

- Alteration of flow regimes in reservoirs and downstream of dams
- Water quality degradation

USACE is responsible for determining project-specific effects on protected species because the effects depend largely on where and how the actions occur. USACE also is responsible for pursuing consultation with USFWS in accordance with Section 7 of the ESA regarding any expected effects on those species.

Little information is available on linkages between flow regime characteristics and the life histories of protected species occurring in the basin. While that is beyond the scope of the current effort, it might be possible to quantify optimal flow regimes for some of or all the riverine-dependent species or even minimum flow regimes that would ensure each species' survival and persistence in the basin. Such an effort would show that some species do best in wet years and others do best in dry years. However, overall biological diversity and ecosystem function benefit from interannual variations in species success (Tilman, Downing, & Wedin, 1994). Previous efforts at riverine ecosystem restoration have demonstrated that it is impossible to simultaneously optimize conditions for all species (Sparks, 1992) (Sparks, 1995) (Toth, 1995). Therefore, the best strategy for protecting the ecology and biodiversity of the basin, including its protected species, is to maintain or restore to some extent the natural patterns of variability of flow regimes throughout the basin.

Riverine communities generally require clean water with sufficiently high dissolved oxygen concentration and appropriate temperatures. Although water quality has improved in the ACT River Basin since the 1970s because of controls on point source pollutant discharges under the Clean Water Act, water quality problems related largely to nonpoint source sedimentation and other contaminants continue in many river reaches. Biological conditions in the ACT River Basin are most severely degraded in the urbanized reaches of the basin (Frick, et al., 1998). Water quality degradation is a frequently cited concern for the riverine-dependent species included in the 1997 report published by Fish and Wildlife Service, *Comprehensive Study's Protected Species Inventory and Identification in the ACT and ACF River Basins—Volume 1* (Ziewitz, Luprek, & Kasbohm, 1997). It is quite likely that water quality is a limiting factor for several of the species, including many of the federally listed mussels listed in ***Table 1-1***. Any actions that could alter water quality must address effects on the protected species.

A complete description of endangered and threatened species in the Coosa River and Etowah River basins (***Table 1-1***) is provided in Section E.1.6.4 of Appendix E of the Draft FR/SEIS. This BA will focus on species that may be found in the action area, as identified from maps of the species' current range on the U.S. Fish and Wildlife Service Environmental Conservation Online System (ECOS) website (USFWS, 2019a).

5.1 PROTECTED MAMMAL SPECIES

5.1.1 Gray Bat (*Myotis grisescens*)

The gray bat roosts and hibernates exclusively in suitable caves in the southeastern US. Less than 5 percent of available caves in the region have the right properties of temperature, humidity, and structure to make them suitable for gray bat occupation. Most foraging occurs within 16 ft of the surface over open water near a forested shoreline. The bats will forage 12 mi or more from the roost sites and seem to prefer traveling within forested areas.

In Georgia, gray bats are known to occupy only three caves regularly during the summer in Catoosa, Chattooga, and Walker counties. The most important caves to gray bats, those that house large populations, are found in Alabama, Arkansas, Kentucky, Missouri, and Tennessee (GADNR, 2009a). Gray bats are known from approximately 40 cave systems in 11 counties in northern Alabama (USACE ERDC, 2007). Shelby County is the only one of these counties that borders the Coosa River.

5.1.2 Indiana Bat (*Myotis sodalis*)

The Indiana bat is known to occur throughout much of the midwestern and eastern United States. The species has been virtually eliminated from much of its former range. Indiana bats gather in large groups in suitable caves to hibernate, with more than 85 percent of the population in just nine caves in Indiana, Kentucky, and Missouri. There are very few records of this species in Georgia, and no known occupied habitat. It has been documented in Georgia in only two caves in Dade County in the northwestern part of the state. The Georgia records are from fall and winter collections. During the summer, Indiana bats roost in trees, usually under loose, exfoliating bark as found on shagbark hickories and dead hardwoods, or in hollow trees. The roost sites are typically at a woodland edge where the trees are warmed by the sun. The bats forage in the surrounding riparian, floodplain, and upland forest, and sometimes over open areas and water as well. There are no known significant hibernacula (that is, with large numbers of bats) in Georgia for this species. The Georgia records are from fall and winter collections; the nearest known maternity colonies are in southern Kentucky (GADNR, 2009b). A 2017 USFWS Indiana bat population status update estimates the Indiana Bat population in Georgia to be 1 based on winter surveys of conducted in January and February of 2017 at known Priority 1 and 2 hibernacula (USFWS, 2017).

5.1.3 Northern Long-Eared Bat *(Myotis septentrionalis)*

The northern long-eared bat is known to occur throughout southern Canada and the central and eastern United States. It is more common in the northern part of its range and has only been documented in northern and western Georgia. Populations of northern long-eared bats in Georgia are small and widely distributed. Most summer roosts occur in tree cavities and under exfoliating bark, but they have also been found in buildings and behind shutters. During winter, northern long-eared bats hibernate in tight crevices in caves and mines. They tend to forage in the canopy of floodplain forests and wooded hillsides (GADNR, 2015).

5.2 PROTECTED BIRD SPECIES

5.2.1 Wood Stork (*Mycteria americana*)

Historically, the breeding range of the wood stork (federally listed as threatened) spanned the southeastern US, extending from South Carolina to Texas (USFWS, 1997). Today, breeding is limited to coastal areas of Florida, Georgia, and South Carolina. Post-breeding storks generally disperse, occasionally occurring as far north as North Carolina and as far west as Alabama and Mississippi (USFWS, 1997). In Alabama, the species is known to forage during summer and early fall in the western Inland Coastal Plain near the Tombigbee River and lakes in Hale, Marengo, and Perry counties; at ponds near Montgomery, AL; and at Eufaula National Wildlife Refuge (ADCNR, 2019b).

5.2.2 Red-Cockaded Woodpecker (*Picoides borealis*)

The red-cockaded woodpecker (federally listed as endangered) historically inhabited open pine forest from Maryland, New Jersey, and Virginia to Florida. Their range also extended west to Texas and north to parts of Kentucky, Missouri, Oklahoma, and Tennessee. Due to the drastic decline of the longleaf pine ecosystem, the red-cockaded woodpecker has disappeared from much of its original range. The current range extends from Florida to Virginia and west to Oklahoma and eastern Texas. In Alabama, most of the red-cockaded woodpeckers are found in the Conecuh, Oakmulgee, and Talladega National Forests (ADCNR, 2014b).

5.3 PROTECTED FISH SPECIES

Table 1-1 lists 12 federally protected fish species within the Coosa River and Etowah River basins; however, just three of the species inhabit the main stem of the rivers and their associated reservoirs: the blue shiner, which occurs in the Coosa River near Weiss Lake; and the Cherokee darter and the Etowah darter, which inhabit the Etowah River and Allatoona Lake (USFWS, 2019b) (USFWS, 2019c).

5.3.1 Blue Shiner (*Cyprinella caerulea*)

The blue shiner (federally listed as threatened) is endemic to the Mobile River drainage basin and was historically known from the Coosa and Cahaba river systems of Alabama, Georgia, and Tennessee (USFWS, 1992). Water quality and habitat degradation, primarily because of dam construction, are the primary threat to the species (USFWS, 1995). It is restricted to the lower reaches of Little River, Weogufka Creek, and Choccolocco Creek in Alabama (ADCNR, 2014a) and the upper Conasauga River system above the junction with Holly Creek in Georgia (USFWS, 1995). Blue shiners prefer clear, medium or large streams and are found in shallow pools with slow currents or in backwaters over sand and gravel substrates. Spawning in the upper Coosa River system occurs from late April to late July (Mettee, O'Neil, & Pierson, 1996). The blue shiner is a fluvial specialist, being found only in flowing water. It prefers low to moderate velocity current, and a depth of about 0.15 to 1 meter (0.5 to 3 feet) (USFWS, 1995).

5.3.2 Cherokee Darter (*Etheostoma scotti*)

The Cherokee darter (federally listed as threatened) is endemic to upper portions of the middle Etowah River system in Georgia, upstream of Allatoona Lake. Cherokee darters are found in the Blue Ridge and Piedmont physiographic sections in this area with most populations occurring in the Northern Piedmont Upland. The Cherokee darter inhabits small-to-medium-sized creeks with moderate gradient, in low current areas with large gravel, cobble, and small boulder substrates. It occurs in runs above and below riffles, typically in waters 1–2 ft deep over large gravel, cobble, and small boulders. Little is known about the life history of this species, although it is assumed to be similar to the Coosa darter, which eats aquatic insects and spawns in the spring (Mettee, O'Neil, & Pierson, 1996) (USFWS, 2000).

5.3.3 Etowah Darter (*Etheostoma etowahae*)

The Etowah darter (federally listed as endangered) is restricted to the Etowah River system of the upper Coosa River of Georgia, above and below Allatoona Dam, including the mainstem and seven tributaries: Amicalola Creek, Shoal Creek in Dawson County, Long Swamp Creek, Yellow Creek, Smithwick Creek, Stamp Creek, and Raccoon Creek. Adults occur in small-to-medium-sized streams with cobble and gravel riffles and moderate-to-swift current. Because this species is newly described, little is known of its life history. Based on what is known of other species, spawning probably occurs from late April to early June, peaking in May (Mettee, O'Neil, & Pierson, 1996) (USFWS, 2000) (NatureServe, 2019a).

5.4 PROTECTED MUSSEL SPECIES

Table 1-1 lists 13 federally protected mussel species within the Coosa and Etowah river basins; however, just 10 of those species inhabit the main stem of the rivers and their associated reservoirs: the Alabama moccasinshell, Coosa moccasinshell, finelined pocketbook, Georgia pigtoe, ovate clubshell, southern acornshell, triangular kidneyshell, and upland combshell inhabit parts of the Coosa River; and the southern clubshell and southern pigtoe inhabit parts of both the Coosa and Etowah rivers.

5.4.1 Alabama Moccasinshell (*Medionidus acutissimus*)

The Alabama moccasinshell (federally listed as threatened) historically occurred in the Mobile River Basin in Alabama, Mississippi, Georgia, and Tennessee. It prefers moderate-to-strong currents in streams and small rivers and is often associated with shoal habitat and sand, gravel, or cobble substrate (USFWS, 2000). In the ACT River Basin, the Alabama moccasinshell is generally found in small, localized populations in the upper Conasauga River in Georgia and Tennessee and in portions of the Cahaba River system in Alabama. Critical habitat has been designated in four units, including portions of the Cahaba, Lower Coosa, and Oostanuala rivers as well as in Bogue Chitto Creek (***Figure 5-1***) (USFWS, 2019e).

5.4.2 Coosa Moccasinshell (*Medionidus parvulus*)

Historically, the Coosa moccasinshell (federally listed as endangered) was known from tributaries of the middle and upper Coosa River drainage, including Choccolocco Creek, Chattooga River, Little River, Conasauga River, Cahaba River, and Sipsey Fork in the Black Warrior River (USACE Mobile District, 2003). The species prefers sand, gravel, and cobble substrate in moderate-to-strong current along shoals of streams and small rivers (USFWS, 2000). Recent collections have been made from the Little River in Alabama and the upper Conasauga in Georgia and Tennessee (USFWS, 1993). Nine critical habitat units have been designated, only one (the Oostanaula complex) of which supports the species (***Figure 5-1***) (USFWS, 2019e).

5.4.3 Finelined Pocketbook (*Lampsilis altilis*)

The historical distribution of the finelined pocketbook (federally listed as threatened) included most of the Mobile River Basin, to which the species is endemic (USFWS, 2000). Within the ACT River Basin, it occurs in the Little Cahaba River, the Tallapoosa River drainage, three tributaries of the middle Coosa River, and the Conasauga River (USACE Mobile District, 2003) (Williams & Hughes, 1998). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. It has been found in stable sand and in gravel in small streams above the Fall Line (NatureServe, 2019b). Twelve critical habitat units, all within the ACT River Basin, have been established on approximately 546 mi of rivers and streams (***Figure 5-1***) (USFWS, 2019e).

5.4.4 Georgia Pigtoe (*Pleurobema hanleyianum*)

The Georgia pigtoe (federally listed as endangered) was historically present in large creeks and rivers of the Coosa River drainage of Alabama, Georgia, and Tennessee. It is found in shallow runs and riffles with strong-to-moderate current and coarse sand-gravel-cobble bottoms. The Georgia pigtoe is currently known from a few isolated shoals in the Upper Conasauga River in Murray and Whitfield counties, GA, and in Polk County, TN. In November 2010, the Georgia pigtoe was listed as endangered, and critical habitat for the species was designated for the following three areas: 52 mi of the upper Conasauga River upstream of US Route 76 in Murray and Whitfield counties; 15 mi of Terrapin Creek upstream of its confluence with the Coosa River and 11 mi of the Coosa River immediately below Weiss Dam (old channel and tributary) in Cherokee County, AL; and 41 mi of Hatchet Creek in Clay and Coosa counties, AL (***Figure 5-1***) (USFWS, 2010a).

5.4.5 Ovate Clubshell (*Pleurobema perovatum*)

The ovate clubshell (federally listed as endangered) was historically found throughout the Mobile River Basin tributaries, including inhabiting large creeks and small-to-large rivers such as the Tombigbee, Black Warrior, Alabama, Cahaba, lower Tallapoosa, and Coosa river systems (USFWS, 2000). Within the ACT River Basin, recent surveys indicate the species is only known from Chewacla Creek in the Uphapee Creek system in the lower Tallapoosa River drainage, AL, and from the upper Coosa River mainstem (bypass reach) near Weiss Lake in Alabama (USACE Mobile District, 2003). Habitat in Tennessee includes a sand and fine gravel substrate in stretches of river with moderate current and typically at a depth of less than three feet (NatureServe, 2019c). Approximately 494 mi of critical habitat have been designated for the ovate clubshell, comprising eight distinct units (***Figure 5-1***) (USFWS, 2019e).

5.4.6 Southern Acornshell (*Epioblasma othcaloogensis*)

The range of the southern acornshell (federally listed as endangered) historically spanned the Coosa and Cahaba river systems above the fall line in Alabama, Georgia, and Tennessee (USFWS, 2000). The species is presumed to be extirpated from the Tennessee portion of the Conasuaga River and appears restricted to the Coosa River drainage in Alabama and Georgia (Parmalee & Bogan, 1998). Species of this genus have typically been found in strong currents and coarse particle substrates (NatureServe, 2019d). Critical habitat has been designated in seven units comprising 341 mi of streams in the Southern acornshell’s former range (***Figure 5-1***) (USFWS, 2019e).

5.4.7 Southern Clubshell (*Pleurobema decisum*)

Historically, the southern clubshell (federally listed as endangered) was found throughout the Mobile River Basin, inhabiting sand, gravel, or cobble shoals in highly oxygenated large streams and small rivers (USFWS, 2000) (NatureServe, 2019e). Its current distribution in the ACT River Basin includes Bogue Chitto Creek in the Alabama River, the mainstem Alabama River, and Chewacla Creek in the lower Tallapoosa River (USACE Mobile District, 2003). It has been previously found in the lower Coosa River mainstem in the bypass reach downstream of Weiss Lake, but recent surveys failed to collect any live specimens. In 2004 critical habitat was designated as 19 units in Alabama, Georgia, Mississippi, and Tennessee (USFWS, 2004). Within the ACT River Basin, critical habitat has been designated in10 units, encompassing approximately 467 mi of habitat (***Figure 5-1***) (USFWS, 2019e).

5.4.8 Southern Pigtoe (*Pleurobema georgianum*)

The southern pigtoe (federally listed as endangered) is endemic to the ACT River Basin, historically occurring in the Coosa River in Alabama, Georgia, and Tennessee (USFWS, 2000). It is generally found in small, restricted populations in high-quality large streams and small rivers. The species prefers coarse substrate (sandy-gravel and gravel) in moderate flows and depths of less than 60 cm (Parmalee & Bogan, 1998). Its current distribution is restricted to the upper Conasauga River of Georgia and Tennessee and along the lower Coosawattee River mainstem, but only the Oostanaula complex supports a population (USFWS, 2004). Critical habitat has been designated in nine units, comprising 393 mi of habitat in the ACT River Basin (***Figure 5-1***) (USFWS, 2019e).

5.4.9 Triangular Kidneyshell (*Ptychobranchus greenii*)

The triangular kidneyshell (federally listed as endangered) is endemic to the Mobile River Basin. This species appears most prevalent in sections of river three feet in depth and having a good current and a firm substrate as opposed to coarse gravel and sand in shoals and runs of small rivers and large streams (USFWS, 2000) (NatureServe, 2019f). In the ACT River Basin, the species is known to exist in the Upper Conasauga River, the Oostanaula River, and the Coosawattee River downstream of Carters Dam in Georgia (USACE Mobile District, 2003). In 2004 critical habitat was established in 13 units in Alabama, Georgia, and Tennessee (USFWS, 2004). Critical habitat has been designated in ten units, comprising 400 mi, in the ACT River Basin (***Figure 5-1***) (USFWS, 2019e).

5.4.10 Upland Combshell (*Epioblasma metastriata*)

The upland combshell (federally listed as endangered) is endemic to the Mobile River Basin and historically occurred in portions of the Black Warrior, Cahaba, middle Coosa and upper Coosa rivers and their tributaries (USACE Mobile District, 2003). It is generally found in high-quality habitat in small-to-medium-sized rivers, where it is found on sand and gravel substrate in riffles in moderate to swift currents (USACE Mobile District, 2003) (NatureServe, 2019g). Today, its range is drastically diminished. Surveys have failed to relocate the species, except in the Conasauga River in Georgia (USFWS, 2000). Despite the absence of live specimens, critical habitat has been designated in seven units of the upland combshell's former range (***Figure 5-1***) (USFWS, 2019e).

5.5 PROTECTED SNAIL SPECIES

Table 1-1 lists seven federally protected snail species within the Coosa River and Etowah River basins; however, just four of those species inhabit the main stem of the rivers and their associated reservoirs: the interrupted rocksnail, painted rocksnail, rough hornsnail, and tulotoma snail inhabit parts of the Coosa River.

5.5.1 Interrupted Rocksnail (*Leptoxis foremani*)

The interrupted rocksnail was listed as an endangered species in November 2010 (USFWS, 2010a). Historically, it occurred in the Coosa River drainage in Alabama and Georgia. Surveys of the Oostanaula, Coosa, Coosawattee, Etowah, and Conasauga rivers since 1999, however, have documented the species in only about 7.5 mi of the

Oostanaula River upstream of the Gordon-Floyd county line. Rocksnails live in shoals, riffles, and reefs of small to large rivers. Their habitats are generally subject to moderate currents during low flows and strong currents during high flows. These snails live attached to bedrock, boulders, cobble, and gravel, and tend to move little, except in response to changes in water level. Interrupted rocksnails are currently found in shoal habitats with sand-boulder substrate, at depths less than 50 cm (20 in), and in currents less than 40 cm/sec (16 in/sec) (NatureServe, 2019h). Critical habitat was designated in November 2010 for the following three areas: 7 mi of the Coosa River below Weiss Dam (old channel and tributary); 8 mi of the Coosa River below Jordan Dam; and 48 mi of the Oostanaula River downstream of its origin at the confluence of the Conasauga and Coosawattee rivers (USFWS, 2010a) (USFWS, 2019e).

5.5.2 Painted Rocksnail (*Leptoxis taeniata*)

The painted rocksnail (federally listed as threatened) historically maintained the largest range of any rocksnail in the Mobile River Basin drainage, ranging from the Coosa River and its tributaries in St. Clair County, AL, downstream into the mainstem of the Alabama River to Claiborne, Monroe County, AL, and the Cahaba River downstream of the fall line in Perry and Dallas counties, AL (USFWS, 2005). Populations exist in only three Coosa River tributaries—Choccolocco Creek, Talladega County; Buxahatchee Creek, Shelby County; and Ohatchee Creek, Calhoun County, AL. Two of these systems, Choccolocco Creek and Buxahatchee Creek, have recently been identified on Alabama's draft listing of 303d impaired waterbodies for organic pollution and excessive nutrients, respectively (USFWS, 2006). This species is found in the shoals and riffles and strong currents of rivers on substrates of gravel and cobble (NatureServe, 2019i).

5.5.3 Rough Hornsnail (*Pleurocera foremani*)

The rough hornsnail (federally listed as endangered) is endemic to the Coosa River and its tributaries in Alabama and is generally found on gravel, cobble, and bedrock substrate in areas of moderate currents. It is known to occur at only two locations: Lower Yellowleaf Creek in Shelby County, AL; and the Lower Coosa River downstream of Wetumpka Shoals in Elmore County, AL. In November 2010, the rough hornsnail was listed as endangered, and critical habitat for the species was designated for the following areas: 13 mi of the Coosa River from Jordan Dam to the confluence with the Tallapoosa River and 4 mi of Yellowleaf Creek in Shelby County, AL (USFWS, 2010a) (USFWS, 2019e).

5.5.4 Tulotoma Snail (*Tulotoma magnifica*)

The tulotoma snail (federally listed as threatened) inhabits cool, well-oxygenated, free-flowing waters in mainstem rivers and major tributaries. The habitat is riffles and shoals on the undersides of large rocks, with current velocities sufficient to prevent silt accumulation (NatureServe, 2019j). Historically, it occurred throughout the Coosa River drainage to the Alabama River (USFWS, 2000). Recent studies suggest an increase in the abundance and distribution of the species, as it now occurs in eight populations in more than 10 percent of its former range (USFWS, 2007). Minimum flow criteria established by APC have expanded the populations downstream of Jordan Dam and Lake. In 2006 a 5-year review recommended downlisting the tulotoma snail to threatened status (USFWS, 2007).

5.6 PROTECTED FLOWERING PLANT SPECIES

Table 1-1 lists 17 federally protected flowering plant species within the Coosa River and Etowah River basins; however, just nine of those species have a range that overlaps with the main stem of the rivers and their associated reservoirs: the Alabama leather flower, Georgia rockcress, green pitcher-plant, harperella, large-flowered skullcap, Mohr's Barbara's buttons, Tennessee yellow-eyed grass, white fringeless orchid, and whorled sunflower.

5.6.1 Alabama Leather Flower (*Clematis socialis*)

The Alabama leather flower (federally listed as endangered) is only known from three locations in northeast Alabama with one population occurring in St. Clair County and two in Cherokee County (USFWS, 1989). It is found in herbaceous wetland, riparian, upland forest, and upland grassland/herbaceous habitats (NatureServe, 2019k).

5.6.2 Georgia Rockcress (*Arabis georgiana*)

The Georgia rockcress (federally listed as threatened) grows in various dry situations, including shallow soil accumulations on rocky bluffs, in ecotones of gently sloping rock outcrops, and in sandy loam along eroding riverbanks. Currently, 19 populations are known from four counties in Alabama (Bibb, Elmore, Russell, and Wilcox) and six counties in Georgia (Clay, Chattahoochee, Floyd, Gordon, Harris, and Muscogee). Critical habitat has been designated in four units in the ACT basin, including the Oostanaula complex, the Cahaba River drainage, the Cahaba River, and the Alabama River (***Figure 5-1***) (USFWS, 2019e).

5.6.3 Green Pitcher-Plant (*Sarracenia oreophilia*)

The green pitcher-plant (federally listed as endangered) occurs in a relatively wide variety of habitats, including mixed oak or pine flatwoods, seepage bogs, and stream banks. It is found near seepage bogs in sandy clays or loams that contain abundant organic matter. On the basis of historic records, the species is most likely to occur in the ACT River Basin in DeKalb, Etowah, and Cherokee counties, AL (USFWS, 1994).

5.6.4 Harperella (*Ptilimnium nodosum*)

Harperella (federally listed as endangered) typically grows in two habitat types: (1) rocky or gravel shoals and margins of clear, swift-flowing stream sections and (2) edges of intermittent pineland ponds in the Coastal Plain. Two extant populations occur in Alabama. One consisting of several thousand individuals occurs along the Little River on the border of Cherokee and DeKalb counties (USFWS, 1990). The other population has less than 100 plants and is on Town Creek in DeKalb County. More recent data for the species within the basin are unavailable, but a 5-year review is underway (USFWS, 2008).

5.6.5 Large-Flowered Skullcap (*Scutellaria montana*)

Large-flowered skullcap (federally listed as threatened) is a terrestrial species that inhabits moist hardwood and hardwood-pine forests with few shrubs. The range of this species includes the Ridge and Valley physiographic province of northwest Georgia and southeast Tennessee. Populations are concentrated on Lookout and Signal mountains in Tennessee and in Floyd County, GA. In Georgia, 53 populations are known, including 12 on conservation land (GADNR, 2008a).

5.6.6 Mohr’s Barbara’s Buttons (*Marshalla mohrii*)

Mohr’s Barbara’s buttons (federally listed as threatened) typically occurs in moist, prairie-like openings in woodlands and along shale-bedded streams (USACE Mobile District, 2003). At the time of its listing, it was known to exist at 15 sites in Alabama, all of which are within the ACT River Basin (one population in Bibb County, four in Etowah County, and 10 in Cherokee County) (USFWS, 1991). The species is also known from Floyd County, GA (within the ACT River Basin). In 2010 the USFWS initiated a 5-year status review of Mohr’s Barbara’s buttons (USFWS, 2010b).

5.6.7 Tennessee Yellow-Eyed Grass (*Xyris tennesseensis*)

At the time of its listing as endangered, the Tennessee yellow-eyed grass occurred in extant populations at 14 sites in five areas: (1) northwest Georgia (Bartow and Whitfield counties - one population each; (2) northeast Alabama (Calhoun County - two populations); (3) central Alabama (Bibb County - five populations); (4) northwest Alabama (Franklin County - one population); and (5) southcentral Tennessee (Lewis County - four populations). Conditions of the sites generally feature nearly permanent (all-year) moisture regimes; open, sunny conditions; and calcareous bedrock (shale, limestone, dolomite) or thin calcareous soils (USACE Mobile District, 2003). This species is found in forested wetland, herbaceous wetland, riparian, and upland grassland/herbaceous habitat (NatureServe, 2019l).

5.6.8 White Fringeless Orchid (*Platanthera integrilabia*)

White fringeless orchid (federally listed as threatened) is documented from 53 extant locations within six states: Alabama, Georgia, Kentucky, Mississippi, South Carolina, and Tennessee. In the ACT River Basin, it is found in the Etowah, Upper Coosa, Lower Coosa, and Upper Tallapoosa watersheds. This species is generally found in wet, flat, boggy areas at the head of streams or seepage slopes (NatureServe, 2014a).

5.6.9 Whorled Sunflower (*Helianthus verticillatus*)

The whorled sunflower (federally listed as endangered) is known only from Alabama (Cherokee County), Georgia (Floyd County), and Tennessee (Madison and McNairy counties). This species is a narrow habitat specialist occurring in remnant wet prairie areas and calcareous barrens, in moist, prairie-like openings in woodlands, and along adjacent creeks (NatureServe, 2014b). Critical habitat has been designated in the Mud Creek/Coosa Valley Prairie (***Figure 5-1***) (USFWS, 2019e).

5.7 CRITICAL HABITAT

Critical habitat for all federally protected species in the ACT River Basin, as designated based on the USFWS Threatened & Endangered Species Active Critical Habitat Report, is shown in ***Figure 5-1*** (USFWS, 2019e). Critical habitat has been designated for 17 species in the Coosa River and Etowah River basins based on the USFWS Official Species Lists (USFWS, 2019b) (USFWS, 2019c) (USFWS, 2019d). Alabama moccasinshell, Amber darter, Conasauga logperch, Coosa moccasinshell, Finelined pocketbook, Georgia pigtoe, Georgia rockcress, Interrupted rocksnail, Ovate clubshell, Rough hornsnail, Southern acornshell, Southern clubshell, Southern pigtoe, Triangular kidneyshell, Trispot darter (proposed), Upland combshell, and Whorled sunflower.

Six of these species do not have critical habitat within the ROI, including the Amber darter, Conasauga logperch, Georgia pigtoe, and Georgia rockcress, Trispot darter, and Whorled sunflower.

The remaining eleven species do have critical habitat within the ROI. The following mussel and snail species species have critical habitat within an 11-mile reach of the Coosa River immediately below Weiss Dam (old channel and tributary): Alabama moccasinshell, Coosa moccasinshell, Finelined pocketbook, Interrupted rocksnail, Ovate clubshell, Rough hornsnail, Southern acornshell, Southern clubshell, Southern pigtoe, Triangular kidneyshell, and Upland combshell. Primary constituent elements for each of these species are specified in **Appendix A**.

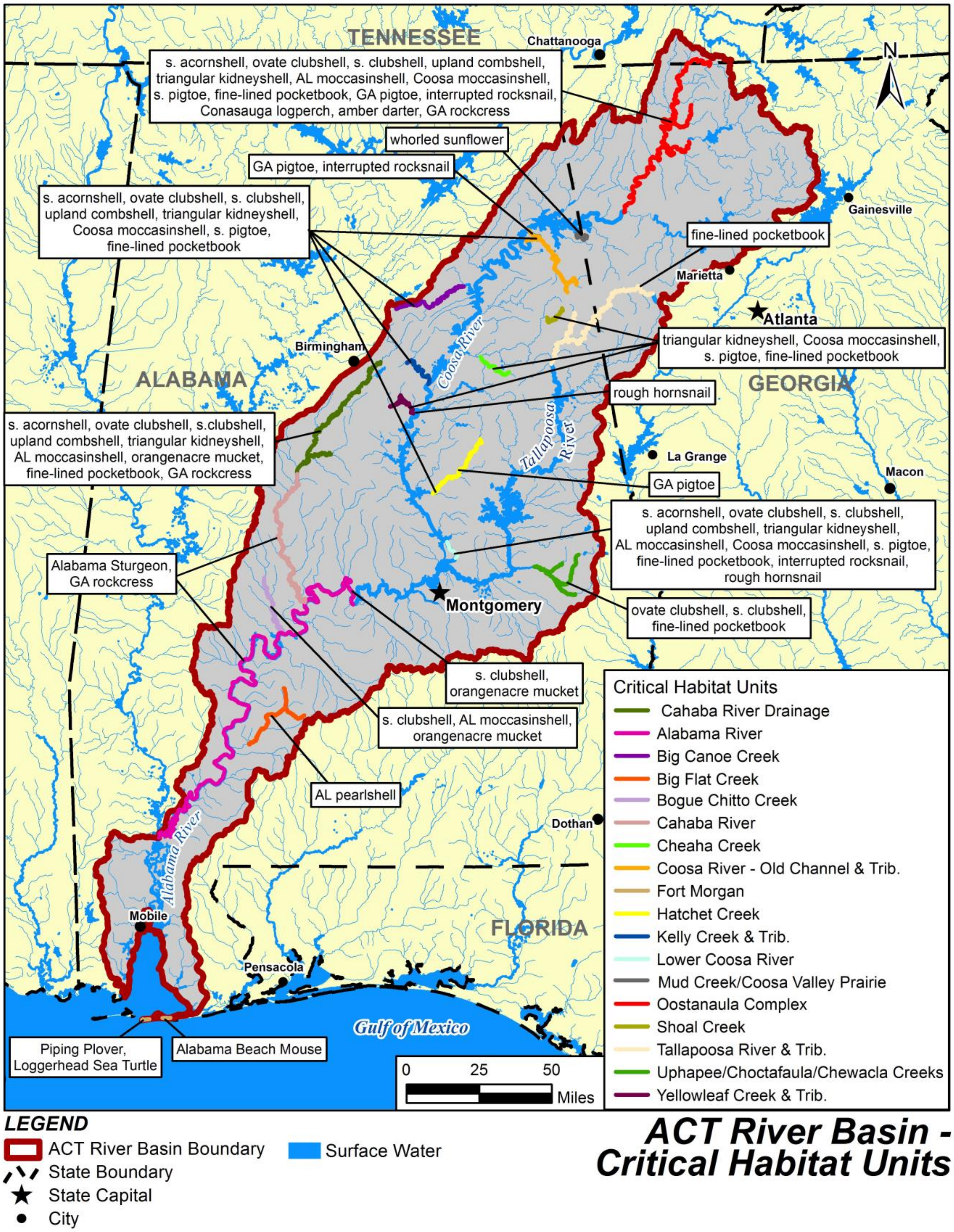


Figure 5-1. Critical Habitat Units in the Coosa River Basin.

6.0 ENVIRONMENTAL BASELINE

As described in the Section 7 Consultation Handbook, the environmental baseline is a "snapshot" of a species' health at a specified point in time. It does not include the effects of the proposed action, but rather provides an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat (including designated critical habitat), and ecosystem, within the action area. The baseline includes anticipated effects of all proposed Federal projects in the action area that have already undergone formal or early Section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The actions under review are the proposed reallocation of storage in USACE's Allatoona Lake from multipurpose use to municipal and industrial water supply and proposed modifications to federally authorized flood operations at APC's Weiss and Logan Martin dams, all of which will necessitate updates to the ACT River Basin Master Manual and the Water Control Manuals for these three projects. In the case of ongoing water resource projects, such as the reservoir projects in the ACT River Basin, the total effects of all past activities, including the effects of construction and past operation, current non-federal activities, and federal projects with completed Section 7 consultations, form the environmental baseline. Based on the description given above, the environmental baseline also includes effects of the currently approved dredging operations and other navigation maintenance activities. The environmental baseline considers the effects of operating the basin-wide system of dams and reservoirs, regardless of owner, since completion of the last project in the ACT River Basin.

There is a total of 16 USACE and APC dams on the mainstems of the Alabama, Coosa, and Tallapoosa Rivers, including those shown in ***Figure 1-1***. APC's Jordan and Bouldin dams share a single reservoir (Jordan Lake). USACE's Carters Dam and Carters Reregulation Dam operate together as a single project. The Thomson-Weinman Dam, a low head dam located on the Etowah River approximately 10 miles downstream of Allatoona Dam, was previously used as a hydropower facility by the City of Cartersville and is now abandoned. APC's R.L. Harris Dam, located on the Tallapoosa River and completed in 1983, was the last dam constructed on the mainstem rivers of the ACT River Basin. The Affected Environment Section (Section E.1) of the Draft FR/SEIS provides a detailed description of the actions influencing the condition of the environmental baseline and that information is incorporated by reference. The affected environment, as described in the Draft FR/SEIS, for the proposed action includes the Alabama, Coosa and Tallapoosa Rivers and all areas in the basin from the headwaters downstream to the mouth of the Alabama River at its confluence with the Tombigbee River where it forms the Mobile River, and downstream to include the Mobile Bay. However, this BA focuses on the ROI within the ACT River Basin, where model simulation results indicated potential effects on water quality and water quantity.

6.1 WATER QUANTITY

6.1.1 Current Water Supply Contracts at Allatoona Lake

USACE currently has water supply agreements at Allatoona Lake with two local water providers, CCMWA and the City of Cartersville, GA. The Final EIS for the 2015 ACT River Basin WCM update stated that the agreements, when executed, contemplated the use of the following amounts of reservoir storage: 6,371 ac-ft for the City of Cartersville and 13,140 ac-ft for CCMWA. The amounts of storage stated in those contracts were estimated at the time the contracts were executed to yield 16.76 mgd and 34.5 mgd, respectively, during the critical drought (i.e., the worst drought on record at the time the agreements were executed) (USACE Mobile District, 2014).

The severity and frequency of droughts change over time, however, and more recent storage-yield analyses by USACE have indicated that the estimated yield of ACT River Basin reservoir storage has decreased. Area-capacity curves for Allatoona Lake have been updated using hydrography and topography data collected in 2009. The previous area-capacity curves for Allatoona Lake were published in the revised August 1962 Reservoir Regulation Manual for the project (USACE Mobile District, 1962) and subsequently in the revised December 1993 WCM for the project (USACE Mobile District, 1993). The updated area-capacity curves indicate that sedimentation has caused about a 5-percent reduction in reservoir storage capacity since the previous area-capacity curves were developed (Tetra Tech, Inc., 2012). Accordingly, the reservoir storage allocated to water supply per the existing contracts has likewise been proportionately reduced to 6,054 ac-ft for the City of Cartersville and to 12,485 ac-ft for CCMWA. The 2006–2008 drought has been established as the critical drought period for the more recent storage-yield analyses by USACE. Based upon the revised water supply storage values, the estimated yield from the current contracts with the City of Cartersville and CCMWA have been reduced to 12.2 mgd and 24.9 mgd, respectively (USACE Mobile District, 2018). ***Figure 6-1*** shows the current water supply storage as a share of the conservation storage in Allatoona Lake.

To manage storage in Allatoona Lake and other USACE reservoirs in the Mobile District, the District has employed a storage accounting methodology that tracks multiple storage accounts, applying to each account a proportion of inflows and losses, as well as direct withdrawals by specific users. Storage limitations indicated by storage accounting are not intended to identify maximum amounts that can be withdrawn on a daily basis or on an average daily basis under the respective water supply agreements. Nor do these figures represent any guarantee by USACE that these amounts will be available for withdrawal at all times. Rather, these figures reflect the estimated maximum water supply demand that can reasonably be expected to exist, based on past use and the extent to which existing water supply storage would support those withdrawals. The actual amount of water withdrawn is ultimately dependent on the amount of water available in storage, which will naturally change over time.

USACE recognizes that, according to its present method of accounting for storage use at Allatoona Lake, the current and projected future water supply needs of the City of Cartersville and CCMWA exceed the average daily withdrawals contemplated under the original contracts and the amount of storage currently allocated to water supply under those contracts.

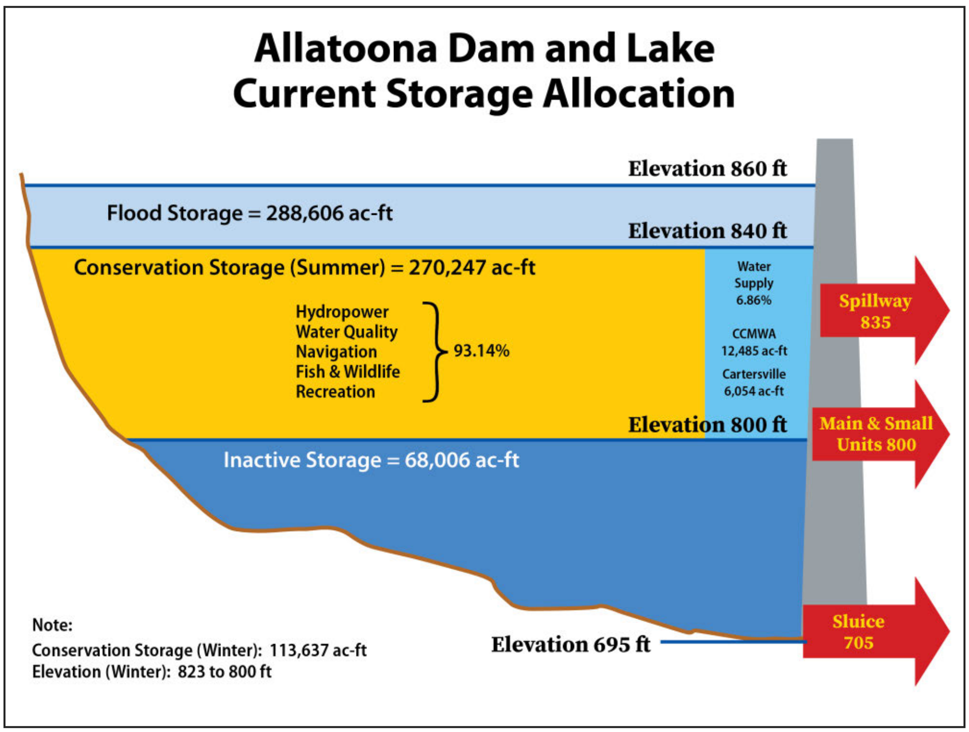


Figure 6-1. Allatoona Lake – Current Storage Allocation.

6.1.2 Weiss Lake and Logan Martin Lake

Baseline flood operations at Weiss Lake and Logan Martin Lake are defined in current WCMs for those projects (2004). Also, baseline conditions for minimum releases at the Weiss Spillway into the Weiss bypass channel were established during the 2013 Federal Energy Regulatory Commission (FERC) relicense process. APC implements a variable minimum flow in the bypassed section of the Coosa River from the Weiss Dam spillway during normal (non-flood) operations, which ranges from 4 to 9 percent of the flow in the Coosa River at the USGS gage at Mayo's Bar, near Rome, GA (USGS 02397000), depending on the month of the year.

6.2 WATER QUALITY

Results of HEC-5Q model simulation for the modeled period of 2001–2008 indicate that there are some existing quality impairments within the ROI. Water quality figures referenced in this section are provided in **Appendix D**. In these figures, A0-BASE2018 represents the baseline condition.

Water Temperature

Water temperatures in the Etowah River and Coosa River never exceed the water quality standard for temperature - a limit of 90 degrees Fahrenheit (°F) with no more than a 5-°F variation from discharge and no more than a 1.5-°F increase during June–September. As shown in ***Figure D-1*** and ***Figure D-2***, temperatures in the Etowah River and Coosa River, respectively, remain below that temperature limit for the NAA.

Dissolved Oxygen

Alabama and Georgia both enforce minimum dissolved oxygen (DO) concentrations in waterbodies designated for recreation with a standard of no less than 5 mg/L at all times in Alabama and a standard of no less than 4 mg/L at all times in Georgia. APC has added aeration blower systems to their projects at Logan Martin, Weiss, and H. Neely Henry. The blower systems are operated to achieve a DO concentration of 4 mg/L at the downstream compliance point for each facility. The operation of the blower systems to maintain the 4 mg/L DO concentration was included in the HEC-5Q model simulations.

On the Etowah River, upstream of Allatoona Lake, HEC-5Q simulations show that DO concentrations remain consistently high at all levels of occurrence. At the 5-percent occurrence, the lowest DO levels are modeled around 5.5 mg/L upstream of the lake but drop to almost 2 mg/L in the lake (***Figure D-3***). For APC Coosa River reservoir projects (including Weiss and Logan Martin lakes), DO concentrations remain above 5 mg/L upstream of all dams, even at the 5-percent occurrence, except for a drop to approximately 4 mg/L at Logan Martin Lake (***Figure D-4***).

Total Phosphorus

Total Phosphorus (TP) concentrations meet the site-specific water quality standard for Allatoona Lake, but most reaches of the Etowah River fail to meet USEPA's recommended 10 µg/L to 40 µg/L range at any occurrence level. The Coosa River has a site-specific water quality standard for TP of 0.7 mg/L (700 µg/L). Along the Coosa River, TP concentrations are about 0.25 mg/L (250 µg/L) at the 95-percent occurrence upstream of Weiss Lake, but then decreases to approximately 0.13 mg/L (130 µg/L) downstream of H. Neely Henry Lake (***Figure D-5***). At the 5-percent occurrence, the model predicts the Weiss Lake TP concentration to be approximately 0.06 mg/L (60 µg/L) and the concentration downstream of Logan Martin Dam to be approximately 0.04 mg/L (40 µg/L). While the 5-percent occurrence level meets the site-specific water quality standard at Weiss Lake as well as the USEPA recommended TP concentrations downstream of Logan Martin Lake, any higher occurrence level fails to meet the standard and recommended range.

Total Nitrogen

Allatoona Lake has a site-specific water quality standard for Total Nitrogen (TN), set at a growing season average of less than 4 mg/L in the photic zone. USEPA recommends maintaining a range of 2–6 mg/L of TN in waterbodies (USEPA, n.d.). Along the Etowah River, TN concentrations simulated in the HEC-5Q model fall well below the 4 mg/L site-specific standard and even below the acceptable range suggested by USEPA, with peak TN concentrations of about 1.2 mg/L at the 95-percent occurrence downstream of Rome-Coosa (***Figure D-6***). Similar to concentrations on the Etowah River, the Coosa River TN concentrations in the HEC-5Q simulations fall below the acceptable range suggested by USEPA, with peak TN concentrations of about 1.2 mg/L at the 95-percent occurrence upstream of Weiss Lake (***Figure D-7***).

Chlorophyll *a*

In Georgia, Allatoona Lake has a site-specific chlorophyll *a* standard that requires an upstream concentration below 10 µg/L from April to October. In Alabama, site-specific standards include chlorophyll *a* exceedance limits from April to October of 20 µg/L at Weiss Lake, 18 µg/L at H. Neely Henry Lake, 17 µg/L at Logan Martin Lake and Lay Lake, and 14 µg/L at Mitchell Lake and Jordan Lake.

Results from the HEC-5Q simulations indicate that, on the Etowah River in Allatoona Lake, the 50-percent occurrence falls significantly below the 10 µg/L limit; however, the 95-percent occurrence exceeds 20 µg/L upstream of the lake (***Figure D-8***). Along the Coosa River, chlorophyll *a* concentrations would be expected to exceed their respective site-specific standards at the 95-percent occurrence level (***Figure D-9***).

7.0 EFFECTS ANALYSIS

This section is an analysis of the effects of the proposed action on the species and critical habitat. The previous “Environmental Baseline” section considers the effects of the past and current operations. This section addresses the future direct and indirect effects of implementing the proposed action. Water quantity and quality figures referenced in this section are provided in **Appendix D**.

7.1 FACTORS CONSIDERED

For the purposes of this BA, the analysis considers three principal components of the species’ environment in the action area: channel morphology, flow regime, and water quality. Physical habitat conditions for the listed species in the action area are largely determined by flow regime, and channel morphology sets the context for the flow regime. Although channel morphology has changed relative to the pre-dam period in the river sections below the USACE projects, it is likely that the rate of change has decreased, and the channel appears to have entered a dynamic equilibrium condition based on the maintenance needs of the navigation channel portions of the action area. It is not possible at this time to predict specific effects on channel morphology due to the influence of the proposed action on the flow regime. The proposed action relates to water management at federal projects in the ACT River Basin and includes limits on the extent to which the USACE alters basin inflow into the downstream river segments via operations of the ACT dams and reservoirs; therefore, the primary focus of this analysis is the flow regime of the rivers with and without the proposed action. This analysis of flow regime and water quality alteration relative to the listed species and critical habitats considers the following factors based on the 1998 Consultation Handbook (USFWS, 1998).

Proximity of the action: The proposed action may affect habitat occupied by all life stages of the listed species described in Section 5 in the rivers below USACE projects. Portions of these rivers are also designated as critical habitat. The proposed action includes releases from USACE dams and may affect some of the species’ life history stages and habitat features from as close as immediately below the dam to many miles downstream.

Distribution: The proposed action could alter flows in the rivers downstream of the USACE dams. The distribution of the various species considered is described in Section 5 (Status of the Species). This analysis examines how the proposed action may variously affect different portions of the action area according to the distribution of the species and important habitat features in the action area.

Timing: The proposed action could alter flows in the rivers downstream of the USACE dams at all times of the year. It will reduce flows when increasing conservation storage in the ACT reservoirs and increase flows when decreasing conservation storage. Therefore, we examine how the proposed action may alter the seasonal timing of biologically relevant flow regime features in our analysis.

Nature of the effect: Baseline reservoir operations under the approved 2015 ACT River Basin WCM update will reduce flows when increasing, or maintaining (during dry periods), conservation storage in the ACT reservoirs and will increase flows when decreasing conservation storage. The proposed action will result in incremental changes to established baseline reservoir operations at Allatoona, Weiss, and Logan Martin dams, but they do not represent radical departures from those daily and seasonal operations that were initially established to meet specific project purposes (e.g., peak hydropower generation). Flow regime and water quality may be incrementally affected by the operational changes included in the proposed action. Therefore, the analysis will address how the proposed action may affect the listed species and critical habitat elements through flow regime and water quality analyses focused on key locations in the basin.

Duration: This proposed action is a modification to the current operations at the USACE projects in the ACT River Basin and the operations described under the proposed action are applicable until revised or until another updated Water Control Plan is adopted. Although the duration of the proposed action is indefinite, the nature of its effects is such that none are permanent. The USACE can alter its reservoir operations at any time; therefore, flow alterations that may result from the proposed action will not result in permanent impacts to the habitat of any of the listed species. Therefore, we examine how implementation of the proposed action may alter the duration of high flows and low flows that are relevant to the listed species and critical habitats.

Disturbance frequency: The proposed action is applicable year-round; therefore, changes to the flow regime and water quality parameters may occur at any time and/or continuously until such time as the proposed action is revised or until another updated Water Control Plan is adopted. Therefore, we examine how implementation of the proposed action may alter the frequency of high flows and low flows that are relevant to the listed species and critical habitats.

Disturbance intensity and severity: The proposed action may variously affect the flow regime depending on time of year, basin inflow, and conservation storage levels. Therefore, we examine how the proposed action affects the magnitude of high and low flow events relative to the baseline. However, for the species considered, the most relevant adverse effects are likely those that occur during low flow conditions due to exposure of aquatic habitat and organisms, desiccation of individuals, spawning areas and food sources, increased access by predators and associated changes in water quality.

7.2 ANALYSIS FOR EFFECTS OF THE ACTION

The Effects Analysis for the proposed action uses the HEC-ResSim Model to simulate flow operations in the ACT Basin. The Effects Analysis includes HEC-5Q model simulations to evaluate the impacts of the proposed action on system-wide, stream and reservoir water quality. Details about the ResSim model and HEC-5Q model are provided in Section 7.3 (Model Description).

We determine the future effect of project operations by comparing the environmental conditions expected to occur under the proposed action, represented by the Alternative 11/TSP model simulation, to environmental conditions expected to occur if the proposed action is not implemented, represented by the No Action Alternative (NAA) model simulation.

The principal factor examined in determining effects for the proposed action is the flow regime in the rivers below Allatoona, Weiss, and Logan Martin dams and how the flow regime affects habitat conditions for the listed species. Differences between the Baseline (observed flows) and proposed action simulated flow regimes are generally attributable to the USACE discretionary operations. However, it should be noted that some of the differences are also attributable to the conservative demand set utilized in the proposed action simulations. In many years, this represents a higher consumptive demand than actually occurred in the observed Baseline flow regime. The observed Baseline flow regime also includes incremental changes in operation that have occurred at both federal and non-federal reservoirs over time due to maintenance at hydropower facilities, operations for public health and safety, and other discretionary operations.

7.3 MODEL DESCRIPTION

<u>HEC-ResSim</u>

The water quantity effects associated with the water management alternatives and water supply storage options in the ACT River Basin were analyzed using the HEC-ResSim model. Analysis included the effects on lake levels and reservoir storage conditions, as well as streamflow conditions. HEC-ResSim is a state-of-the-art tool for simulating flow operations in managed systems. The USACE Hydrologic Engineering Center (HEC) developed this software, which has become the standard for USACE reservoir operations modeling. The analysis for the Draft FR/SEIS was performed using HEC-ResSim Version 3.4.1, Build 32 (May 2018). HEC-ResSim replaced its predecessor, HEC-5, as the next generation graphical user interface-based reservoir operations simulation software.

HEC-ResSim provides a realistic view of the physical river/reservoir system using a map-based schematic. The program's user interface allows the user to draw the network schematic as a stick figure or as an overlay on one or more georeferenced maps of the watershed. HEC-ResSim represents a system of reservoirs as a network composed of four types of physical elements: junctions, routing reaches, diversions, and reservoirs. By combining those elements, the modeler can build a network capable of representing as simple a model as a single reservoir on a single stream or as complex a model as a highly developed and interconnected system like the ACT River Basin. A reservoir is the most complex element of the reservoir network and is composed of a pool and a dam. HEC-ResSim assumes that the pool is level (i.e., it has no routing behavior), and its hydraulic behavior is completely defined by an elevation-storage-area table. The real complexity of HEC-ResSim's reservoir network begins with the dam. The HEC-ResSim modeling report, which is provided in Appendix C of the Draft FR/SEIS, describes the model's development and its application to the proposed actions in ACT River Basin.

HEC-5Q

The water quality effects associated with the water management alternatives and water supply storage options in the ACT River Basin were analyzed using the HEC-5Q model developed by the USACE Hydrologic Engineering Center (HEC). USACE selected HEC-5Q as the tool most capable of faithfully representing river-reservoir temperature and water quality at the culmination of a 3-year model development and verification process. A principal benefit of the HEC-5Q model is its ability to simulate the entire riverine and reservoir system in a single model. It can perform a holistic examination of the basin from top to bottom and simulate the watershed inflows, reservoirs, and river segments. The modeled output allows for a clear, longitudinal presentation of conditions to facilitate comparisons between alternative operations scenarios. In accordance with Engineering and Construction Bulletin 2007-6, Model Certification Issues for Engineering Software in Planning Studies, issued April 10, 2007, HEC-5Q falls under the category of "engineering models used in planning studies," leaving certification to the Science & Engineering Technology initiative associated with the USACE's Technical Excellence Network (TEN). As of January 2010, the TEN guidance listed HEC-5Q as "allowed for use" for water quality modeling.

7.4 MODEL SIMULATIONS

7.4.1 HEC-ResSim

USACE determined that the 73-year hydrologic period of record (1939–2011) would provide a reasonable range of future hydrologic conditions to use to simulate the effects of the alternative plans to current project operations and the NAA. For the NAA, net diversions for municipal and industrial (M&I) water supply (withdrawals minus returns of treated wastewater) and agricultural diversions for irrigation (assuming no returns) throughout the ACT River Basin were simulated by using 2006 values and applying them over the entire hydrologic period of record. All water-use data to support this analysis were provided by the state agencies responsible for regulating and tracking water withdrawals and returns in the respective states. Net diversion values in the ACT River Basin in 2006 represent the greatest annual amount of net water diversion in the basin during the period of simulation and, consequently, the year of greatest stress on the system from water withdrawals. Starting with average monthly values for each diversion, average daily values were calculated for each month (by dividing by the number of days), resulting in a year of daily values. The HEC-ResSim simulation applied those 2006 diversion values to hydrologic conditions for each year in the period of record.

Withdrawals and returns for the alternatives that include future water supply storage reallocation at Allatoona Lake were simulated using the estimated 2050 demands consistent with the State of Georgia's updated 2018 request. For the balance of the ACT River Basin, exclusive of CCMWA and City of Cartersville, year 2006 M&I net withdrawals, as well as agricultural withdrawal estimates, were simulated in the same manner as described for the NAA. The HEC-ResSim modeling report in Appendix C to the Draft FR/SEIS provides more information on how diversions were addressed.

The HEC-ResSim model simulations over the 73-year hydrologic period of record include the following assumptions: (1) the current USACE and APC projects in the ACT River Basin would be in place and operational over the entire period of record, and (2) the USACE and APC projects in the basin would be operated over the entire period of record either as they are currently operated (for the NAA) or as they would be operated under each of the alternatives developed for detailed consideration.

Based on those assumptions, observed or historic values for parameters such as lake levels or flows during the hydrologic period of record would be expected to vary from computed values in the simulations for the NAA. While observed values might track closely with model results in some cases, there are likely to be many cases in which the differences are more substantial because the model is not intended to replicate historic operating conditions.

Several alternatives were modeled, but this BA focuses on expected effects of the NAA and Alternative 11 (the TSP) relative to water quantity considerations. The HEC-ResSim model evaluates the extent of physical change in water resource parameters in the ACT River Basin that would likely result from implementation of the TSP and provides the principal basis for assessment of other natural resource impacts. Appendix E of the Draft FR/SEIS, Section E.3, includes a detailed analysis of the water quantity-related effects of the NAA and Alternative 11.

Table 7-1 summarizes the NAA and Alternative 11, including the names of the alternatives as modeled in HEC-ResSim and a brief description of the key features of each alternative. The alternative name in model corresponds to the data series in **Appendix D** figures. More details on the HEC-ResSim modeling for this Draft FR/SEIS may be found in the modeling report in Appendix C to the Draft FR/SEIS.

Table 7-1. Summary of Alternative Numbers and Model Names from HEC-ResSim.

Alternative Number	Alternative Name in Model	Description
1	A0-BASE2018	No Action Alternative
11 (TSP)	A11_WS6MF	Allatoona storage reallocation to enable withdrawals up to 94 mgd from combination of flood storage and conservation storage, using USACE current storage accounting methodology, and modified flood operations at APC Weiss and Logan Martin projects

7.4.2 HEC-5Q

To simulate water quality conditions under the various alternatives, HEC-5Q inputs included in-stream flows, tributary flows, water quality data, withdrawals, reservoir operations, and other point and nonpoint source flows and quality loads to the system. The HEC-5Q model was linked with the HEC-ResSim model through an input of flows by reach. In addition to the BASINS (Better Assessment Science Integrating point and Nonpoint Sources) model loadings developed in previous modeling efforts, observed data were used to represent the nonpoint inputs to the HEC-5Q model for the period of record from 2001 through 2008. The model also included nontributary inflows, wastewater treatment discharges, and cooling water returns. Inputs for wastewater treatment discharges were based on discharge monitoring reports (DMRs). When DMRs were not available, permitted limits, concentrations representative of the type of discharge, or an average of DMRs was used. The point source inputs considered only dischargers that contributed more than 1 mgd. The HEC-5Q modeling report, which is provided in Appendix C to the Draft FR/SEIS, includes model inputs, assumptions, and calibration for application of HEC-5Q to the proposed actions.

The model results provide the 5th, 50th (or median), and 95th percent occurrences. The median values reflect the points at which 50 percent of the calculated values are higher and 50 percent are lower. The 95th percent occurrence and 5th percent occurrence bracket the range of high and low calculated values that rarely occur. The results from the alternatives were analyzed along reaches and reservoirs within the ROI addressed by the Draft FR/SEIS (Coosa River and Etowah River upstream to Canton, Georgia) to determine the magnitude of any negative changes to water quality from the NAA and whether those changes would result in exceedances or additional exceedances of water quality standards.

7.5 GENERAL EFFECTS ON THE WATER QUANTITY

7.5.1.1 Lake Levels and Reservoir Storage Conditions

No Action Alternative

Allatoona Lake. Lake level and storage conditions in Allatoona Lake, including its seasonal pool level variations, would be consistent with baseline conditions. Median lake levels would generally align with the current project guide curve from January through mid-July, subsequently declining gradually from about 840 ft to 832 ft by the end of November, and thereafter aligning with the guide curve down to elevation 823 ft by the end of December (***Figure D-10***). At the 90 percent exceedance level (dry conditions), the pool level would not reach to the project guide curve at any time of the year. Pool levels would be slightly below the winter guide curve elevation of 823 ft in January to a peak elevation of about 838 ft in May, thereafter declining at a steady rate to an elevation around 823 ft by the end of December (***Figure D-11***). Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be elevation 818.4 ft, about 4.6 ft below the winter guide curve level of 823 ft. Under current operations, the Allatoona Lake surface area decreases dramatically as the lake level drops during seasonal drawdown and periods of basin inflow. At the normal summer pool elevation of 840 ft, the lake's surface area is 11,164 ac. The lake's surface area drops to 6,962 acres at the winter drawdown level of 823 ft, almost a 38 percent reduction in surface area.

Weiss Lake. Lake level and storage conditions in Weiss Lake, including its seasonal variations, would be consistent with baseline conditions. Median lake levels would align with the current project guide curve from January through mid-July, decline slightly below the guide curve (up to 1 ft) from mid-July through mid-November, and align with the guide curve from mid-November through December (***Figure D-12***). At the 90 percent exceedance level, the pool levels would align with the project guide curve from January through mid-April, decline slightly below the guide curve to a peak level of 563.6 ft by the end of May, decline gradually to about 558.2 ft by the end of November, and remain there through December (***Figure D-13***). Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be elevation 556 ft, about 2 ft below the current minimum winter guide curve level of 558 ft. Under current operations, the Weiss Lake surface area decreases appreciably as the lake level drops during seasonal drawdown and periods of low basin inflow. At the normal summer pool elevation of 564 ft, the lake's surface area is 30,028 ac, but the surface area drops to 19,603 ac at the current winter drawdown level of 558 ft, almost a 35 percent reduction in surface area.

H. Neely Henry Lake. Lake level and storage conditions in H. Neely Henry Lake, including its seasonal variations, would be consistent with baseline conditions. Over the modeled period of record, median lake levels would align with the current project guide curve level of 507 ft from December through March and would subsequently increase to the guide curve level of 508 ft through the end of June. The median pool levels would decline slightly (up to 0.5 ft) below the guide curve from July through mid-November. At the 90 percent exceedance level, the pool levels would be 1 to 3 ft lower than the project guide curve level of 507 ft from January through March and guide curve level of 508 ft through May. Thereafter, the pool levels would remain consistently about 1 ft below the guide curve for the balance of the year. Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be elevation 502.5 ft, about 4.5 ft below the winter guide curve level of 507 ft.

Logan Martin Lake. Lake level and storage conditions in Logan Martin Lake, including its seasonal variations, would be consistent with baseline conditions. Over the modeled period of record, median lake levels would align with the current project guide curve from January through June, decline slightly below the guide curve (up to 1 ft) from July through mid-November, and align with the guide curve from mid-November through December (***Figure D-14***). At the 90 percent exceedance level, the pool levels would align with the guide curve from January through mid-April, decline slightly below the guide curve to a peak level of 464.3 ft by mid-May, and then decline gradually to about elevation 460 ft by the end of December (***Figure D-15***).

Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be elevation 458 ft, about 2 ft below the current minimum winter guide curve level of 460 ft. Under current operations, the lake's surface area decreases appreciably as the pool level drops during seasonal drawdown and periods of low basin inflow. At the normal summer pool elevation of 465 ft, the lake's surface area is 15,270 ac, and the surface area drops to 11,894 ac at the current winter drawdown level of 460 ft, about a 22 percent reduction.

Lay, Mitchell, and Jordan Lakes. These lakes, in descending order (upstream to downstream), lie between Logan Martin Dam and the mouth of the Coosa River, just upstream from Montgomery, AL. APC would continue to operate the three reservoirs as run-of-river hydropower projects under the NAA.

R.F. Henry Lock and Dam/R.E. "Bob" Woodruff Lake. This project is the most upstream of three USACE reservoirs on the Alabama River, with a stable pool elevation of 126 ft under normal conditions from the lock and dam upstream to the Montgomery, AL area, near the confluence of the Coosa and Tallapoosa rivers. USACE would continue to operate the project for federally authorized purposes under the NAA.

<u>Tentatively Selected Plan (Alternative 11)</u>

Allatoona Lake. Under Alternative 11, USACE would reallocate an additional 33,872 ac-ft of reservoir storage at Allatoona Lake from a combination of flood storage (11,670 ac-ft) and conservation storage (22,202 ac-ft) to M&I water supply. The summer guide curve elevation would be raised from 840 ft to 841 ft and the winter guide curve elevation would be raised from 823 ft to 824.5 ft. Thus, the pool level in Allatoona Lake would be maintained at a slightly higher level throughout the year compared to current operations under the NAA.

Over the simulated 73-year period of hydrologic record, median pool levels in Allatoona Lake would be between about 1 to 1.5 ft higher than the NAA from January through July and from 0 to 1 ft higher from August through December (***Figure D-10***). At the 90 percent exceedance level (dry conditions), the pool levels would be about 1 to 1.5 ft higher than the NAA from mid-December through May and 0 to 1 ft higher from June to mid-December (***Figure D-11***). Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be elevation 817.3 ft, about 1.1 ft lower than the NAA and about 5.7 ft below the current winter guide curve level of 823 ft.

Weiss Lake. Under Alternative 11, flood operations at Weiss Dam and Lake would be revised as described in Section 3.2.1. The maximum surcharge level at the project would be lowered from 574 ft to 572 ft, and the winter guide curve level would be raised from 558 ft to 561 ft. Compared to the NAA, pool levels at Weiss Lake would be expected to be higher from September through February each year.

Over the period of hydrologic record, median pool levels in Weiss Lake would range from a few inches up to about 3 ft higher than the NAA from September through February and would be the same level as the NAA from March through August (***Figure D-12***). At the 90 percent exceedance level, pool levels would range from a few inches higher up to about 2 ft higher than the NAA from September through February and would be the same level as the NAA from March through August (***Figure D-13***). Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be 556 ft, about the same minimum level as the NAA and 2 ft below the current winter guide curve level. Under Alternative 11, the Weiss Lake pool level would likely drop below the current winter pool level of 558 ft in 3 years over the 73-year period of record analyzed compared to 24 years for the NAA. The Weiss Lake surface area at the proposed winter guide curve level (561 ft) under Alternative 11 would be 24,693 ac compared to 19,603 ac at the current winter guide curve level under the NAA (558 ft).

H. Neely Henry Lake. No changes to project operations are proposed at H. Neely Henry Dam, but proposed changes in flood operations upstream at Weiss Dam and Lake under Alternative 11 may affect pools levels in H. Neely Henry Lake.

Over the period of hydrologic record, median pool levels in H. Neely Henry Lake would about the same as the NAA from mid-November through August and slightly lower (up to about 0.2 ft) than the NAA from September through mid-November. At the 90 percent exceedance level (dry conditions), the plotted values for Alternative 11 and the NAA are essentially the same. Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be 502.5 ft, about the same minimum level as the NAA and 4.5 ft below the current winter guide curve level. The H. Neely Henry Lake pool level would likely drop below the current winter pool level of 507 ft in all 73 years over the modeled period of record for both Alternative 11 and the NAA.

Logan Martin Lake. Under Alternative 11, flood operations would be revised as described in Section 3.2.2. The maximum surcharge level at the project would be lowered from 477 ft to 473.5 ft, and the winter guide curve level would be raised from 460 ft to 462 ft. Compared to the NAA, pool levels at Weiss Lake would be expected to be higher from October through April each year based on the guide curve change.

Over the period of hydrologic record, median pool levels in Logan Martin Lake under Alternative 11 would range from a few inches up to about 2 ft higher than the NAA from mid-October through the first week of May, the same level as the NAA from the first week of May through August, and up to 0.5 ft lower than the NAA in September through mid-October (***Figure D-14***). At the 90 percent exceedance level, the pool levels would range from a few inches higher up to about 2 ft higher than the NAA from October through about mid-May and would be essentially the same level as the NAA from mid-May through September (***Figure D-15***). Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be 458 ft, which would be the same minimum level as the NAA and 2 ft below the current winter guide curve level. The pool level would likely drop below the current winter pool level of 460 ft in 5 years over the 73-year period of record compared to 38 years for the NAA. Under Alternative 11, the Logan Martin Lake surface area at the proposed winter guide curve level (462 ft) would be 13,157 ac compared to 11,894 ac at the current winter guide curve level under the NAA (460 ft).

Lay, Mitchell, and Jordan Lakes. As run-of-river projects, the Alternative 11 would be expected to have a negligible incremental effect on lake levels compared to current operations under the NAA, even with the inclusion of modified flood operations at Weiss and Logan Martin dams. The upstream end of Lay Lake may experience slight and short-term increases in pool levels during flood events when modified flood operations at Logan Martin Dam would be triggered.

R.E. "Bob" Woodruff Lake. Based upon review of model outputs over the hydrologic period of record, Alternative 11 would have no discernable effects on pool levels at R.E. "Bob" Woodruff Lake. The physical effects of the proposed actions at Allatoona, Weiss, and Logan Martin lakes included in Alternative 11 do not extend downstream of the mouth of the Coosa River.

7.5.1.2 Streamflow Conditions

This section summarizes the effects of alternatives to address proposed reallocation of reservoir storage for water supply in Allatoona Lake and APC-proposed flood storage and flood operations modifications at the Weiss and Logan Martin reservoir projects on stream flow conditions at critical locations in the ACT River Basin. Figures referenced in this section are provided in **Appendix D**. Representative plots of HEC-ResSim model outputs are based on simulated project operations under the alternative plans over the modeled period of record (1939–2011) and provide a foundation upon which to describe the expected effects of the NAA and the TSP (Alternative 11) on stream flow conditions at the following locations in the basin: (1) Etowah River downstream of Allatoona Dam; (2)

Coosa River near Rome, GA; (3) Coosa River downstream of Logan Martin Dam; and (4) Alabama River near Montgomery, AL.

Figures depicting median flow conditions in the basin are considered to provide a representative characterization of "typical" conditions for evaluation and comparison among alternatives. Selected figures depicting the 90 percent exceedance level have been included and are representative of substantially dry conditions in the basin.

No Action Alternative

Etowah River downstream of Allatoona Dam. USACE would continue to operate Allatoona Dam and Lake in accordance with the ACT River Basin Master Manual and Allatoona WCM updates approved in May 2015. An important feature of Allatoona Dam operations is the requirement to provide a continuous minimum release of 240 cfs to the Etowah River. Note that, in modeling the releases from Allatoona Dam, the minimum flow in the model includes both the continuous releases from the small service generator at the project plus an allowance for leakage at the dam. Thus, the minimum releases in the model outputs, as depicted in the figures that follow, are shown as 365 cfs.

Figure D-16 depicts median daily flow in the Etowah River downstream of Allatoona Dam for the NAA, analyzed over the 73-year period of record. Median daily flows would be as follows: 1,200 to 1,500 cfs from January through April; 1,500 cfs from May through July (except for one brief peak up to 1,900 cfs in early May); 800 to 1,200 cfs from August through November (except for a few daily peaks in August up to 1,500 cfs); and 2,000 to 2,300 cfs in December. The variations in flow conditions throughout the year are a direct function of the number of hydropower units operating and number of hours they are in operation on any day during the year. ***Figure D-17*** presents the 90 percent exceedance daily flow values over the modeled period of record. Daily flows for the NAA would likely be as follows: 365 to 1,320 cfs from December through mid-January; 365 to 780 cfs from mid-January through mid-May; and stable at 365 cfs from mid-May through November. The 90 percent exceedance values for the NAA downstream of Allatoona Dam would be equal to the modeled minimum flow value of 365 cfs over substantial portion of the year. However, ***Figure D-17*** indicates that some hydropower generation consistently occurs from December through May, even during extremely dry conditions.

Coosa River near Rome, GA. The specific location for evaluation of flow conditions for the NAA and other alternatives is the Coosa River at Mayo's Bar, about 7.5 downstream from the confluence of the Oostanaula and Etowah rivers at the location of the USGS gage station number 02397000. Under the NAA, USACE project operations at Carters Dam and Lake/Carters Reregulation Dam and at Allatoona Dam and Lake would continue in accordance with the ACT River Basin Master Manual and Allatoona WCM updates approved in May 2015.

Figure D-18 depicts median daily flow in the Coosa River near Rome for the NAA, analyzed over the 73-year period of record. Under the NAA, median daily flows would range from about 6,000 cfs to 11,000 cfs from January through mid-April, from about 6,000 cfs to a low point of 2,000 cfs from May through mid-September, and gradually increasing back to around 6,000 cfs by the end of December. ***Figure D-19*** presents the 90 percent exceedance daily flow values (dry conditions) over the modeled period of record. Daily flows for the NAA would likely range from about 2,800 cfs in January to a peak around 4,800 cfs in mid-March, thereafter, gradually declining to a low point of about 1,200 cfs by the end of September; and increasing to around 3,200 cfs by the end of December.

Coosa River downstream of Logan Martin Dam. For the NAA, APC project operations at Weiss Dam, H. Neely Henry Dam, Logan Martin Dam, and the three APC run-of-river projects on the Coosa River (Lay, Mitchell, and Jordan/Bouldin dams) would continue under the current FERC license. Specifically, flood operations at the Weiss and Logan Martin dams, as described in Section 3.2.1 and Section 3.2.2, would continue in coordination with USACE as they have been conducted in the past. Project operations at USACE upstream reservoir projects in the basin, Carters Dam/Reregulation Dam and Allatoona Dam, would continue as currently operated. APC reservoirs on the Tallapoosa River would continue to operate in accordance with their current FERC licenses.

Figure D-20 depicts median daily flow in the Coosa River below Logan Martin Dam for the NAA, analyzed over the 73-year period of record. Median daily flows would range from about 10,000 to 20,000 cfs from mid-December through mid-April and 5,000 to 10,000 cfs from mid-April to mid-December (July through late

November would be level at 5,000 cfs). ***Figure D-21*** presents the 90 percent exceedance daily flow values (dry conditions) over the modeled period of record. Daily flows for the NAA would likely range from about 5,000 to 9,400 cfs in December through May. From June through mid-November, daily flows under the NAA would decline gradually from about 5,000 cfs to a low ranging between 1,800 and 2,600 cfs during September and October, thereafter increasing to about 5,000 cfs by late November.

Alabama River at the confluence of the Coosa and Tallapoosa Rivers. The modeled discharges at this location are not based upon or referenced to a specific USGS gage station on the Alabama River. Rather, the modeled discharges represent the sum of the releases over time from Jordan Dam, Bouldin Dam (two outlets from Jordan Lake on the Coosa River) and Thurlow Dam (the most downstream dam on the Tallapoosa River) and is referred to as the JBT (Jordan-Bouldin-Thurlow) flow. The JBT flow is considered representative of the flow conditions in the Alabama River at the juncture of the Coosa and Tallapoosa Rivers and serves as one of the key locations in the ACT River Basin for comparison of the physical effects (flow conditions) of proposed actions considered in this Draft FR/SEIS.

Figure D-22 depicts median daily flow in the Alabama River at the confluence of the Coosa and Tallapoosa rivers for the NAA, analyzed over the 73-year period of record. Median daily flows would range from about 20,000 to 34,000 cfs from January through mid-April, declining gradually from 20,000 cfs to about 7,500 cfs in September, and gradually increasing to 20,000 cfs by the end of December. ***Figure D-23*** presents the 90 percent exceedance daily flow values over the modeled period of record. Daily flows for the NAA would likely range from about 8,000 to 16,000 cfs from mid-December through May. From June through mid-December, 90 percent exceedance daily flows under the NAA would range between 8,000 cfs and 4,600 cfs, with flows mid-June to mid-November level at about 4,600 cfs.

Figure D-25 is the annual flow duration curve for the Alabama River at the confluence of the Coosa and Tallapoosa rivers. For the NAA, median daily flows over the year would be about 12,050 cfs, 49,030 cfs would be exceeded on about 10 percent of the days, and 4,990 cfs would be exceeded on 90 percent of the days. On 99 percent of days over the period of record, flows would exceed 3,700 cfs.

<u>Tentatively Selected Plan (Alternative 11)</u>

Etowah River downstream of Allatoona Dam. Alternative 11 would likely result in minor changes to flow conditions in the Etowah River below Allatoona Dam compared to the NAA. The minor differences from flow conditions under Alternative 11 compared to the NAA are likely to be a direct result of some adjustments in the number of units generating and the number of hours they would be generating in order to maintain the pool in Allatoona Lake at a slightly higher level (about 1 to 1.5 ft) during the year. Releases from Allatoona Dam under Alternative 11 would closely align with those under the NAA at the median, and 90 percent exceedance levels (***Figure D-16*** and ***Figure D-17***), but would be marginally lower, mostly in the November through March period. Little change in releases from Allatoona Dam would be expected in the late spring and summer months. ***Table 7-2*** provides a comparison of the extent of change in releases that would occur between Alternative 11 and the NAA on an annual basis, for the month of September, and for the month of December at the 10, 25, 50, 75, and 90 percent of days exceedance levels. Generally, the differences are marginal to negligible. At the 90 percent exceedance level for the month of December, the modeled flow for the NAA appears to be notably larger than Alternative 11 (769 cfs compared to 365 cfs). On the duration curve for the month of December from which the values in ***Table 7-2*** were derived, the NAA and Alternative 11 values are very close. The 90 percent exceedance flow values for the NAA and Alternative 11 do not fully reflect how close their values actually are. For example, at the 91 percent exceedance level on the duration curve, the modeled NAA flow drops to 422 cfs. At 92 percent exceedance level on the duration curve, the modeled NAA flow is 365 cfs, the same as Alternative 11, reflecting a negligible shift in the duration curve for Alternative 11 compared to the NAA.

Table 7-2. Etowah River Downstream of Allatoona Dam—Selected Flow Duration Data Over the Modeled Period of Record.

Period	Percent of days exceeded	NAA (cfs)	Alternative 11 (cfs)
Annual (entire year)	10	3,063	2,963
	25	1,929	1,911
	50	1,197	1,192
	75	776	773
	90	365	365
September	10	1,762	1,935
	25	1,160	1,156
	50	965	961
	75	569	569
	90	365	365
December	10	4,295	4,108
	25	2,805	2,651
	50	2,091	2,025
	75	1,979	1,534
	90	769	365

Coosa River near Rome. The USGS gage 02397000 at Mayo's Bar (Rome-Coosa) is an important location for measuring changes in flow conditions in the Coosa River because it is located just few miles upstream of the GA/AL state line and about 56 miles downstream of Allatoona Dam. The Oostanaula River joins the Etowah River at Rome, about 49 miles downstream of Allatoona Dam. Alternative 11 would likely result in negligible changes to flow conditions compared to the NAA. Any detectible changes from flow conditions under the NAA would likely be related to adjustments in the number of units generating and the number of hours of generation in order to maintain the pool at Allatoona Lake at a slightly higher level during the year under Alternative 11. Median flows in the Coosa River throughout the year would closely align with those for the NAA and show no appreciable differences, except for some limited occurrences in late November through February when flows under Alternative 11 would be slightly lower than the NAA (***Figure D-18***). At the 90 percent exceedance level (dry conditions), flows under Alternative 11 would closely match the NAA, except that they would likely be slightly lower than the NAA (by 100-200 cfs) during December and early January (***Figure D-19***).

Table 7-3 compares the extent of change in releases that would occur between Alternative 11 and the NAA on an annual basis, for the month of September, and for the month of December at the This conclusion is supported by data presented in ***Table 7-3*** that show negligible differences in flow values at the 10, 25, 50, 75, and 90 percent exceedance levels on an annual basis.

The current drought operations plan for the ACT River Basin was approved in May 2015 as an integral part of the USACE update of the ACT River Basin Master Manual and project WCMs (see Draft FR/SEIS Appendix E, Section E.3.2.3, and Appendix A for more details on the drought operations plan). One of the three key triggers that activates the drought operations plan for the ACT River Basin is based on 7Q10 flows at the

Alabama/Georgia state line as measured at USGS gage 02397000, Coosa River (Mayo's Bar) near Rome, GA. The 7Q10 flows for the drought trigger are derived from historic flow data at the USGS gage. When flows decline below the monthly 7Q10 value, drought operations would be activated for management of downstream APC reservoirs (at Level 1 or higher depending on whether one or more of the other triggers have been exceeded). ***Table 7-4*** presents the 7Q10 values by month at the Rome-Coosa gage and the percent of days over the modeled period of record that 7Q10 flows would likely be exceeded for the NAA and Alternative 11. Alternative 11 would result in a negligible change in the percent of days that 7Q10 flows would be exceeded compared to the NAA.

Table 7-3. Coosa River Near Rome, GA—Selected Flow Duration Data Over the Modeled Period of Record.

Period	% of days exceeded	NAA (cfs)	Alternative 11 (cfs)
Annual (entire year)	10	14,148	14,099
	25	7,152	7,107
	50	4,078	4,068
	75	2,604	2,608
	90	1,798	1,805
September	10	4,422	4,541
	25	2,966	3,020
	50	2,173	2,179
	75	1,653	1,651
	90	1,291	1,280
December	10	14,281	14,172
	25	8,263	8,167
	50	5,276	5,135
	75	3,530	3,397
	90	2,669	2,575

Table 7-4. Coosa River Near Rome, GA—Percent of Days Over the Modeled Period of Record that Flows Would Likely Exceed the Monthly 7Q10 Value.

		Percent of days flow would exceed 7Q10 values	
Month	Monthly 7Q10 Value (cfs)	No Action Alternative (BASE2018)	Alternative 11 (WS6MF)
January	2,544	94.1%	94.2%
February	2,982	94.6%	94.7%
March	3,258	97.0%	97.1%
April	2,911	94.6%	94.7%
May	2,497	93.2%	93.4%
June	2,153	91.6%	92.0%
July	1,693	93.5%	93.6%
August	1,601	88.2%	88.6%
September	1,406	85.7%	85.4%
October	1,325	89.6%	89.4%
November	1,608	89.8%	88.8%
December	2,043	96.3%	95.2%

Note: Based on USGS Coosa River at Rome Gage (Mayo's Bar, USGS 02397000) observed flow from 1949 to 2006

Since the Coosa River near Rome is a critical location in consideration of drought conditions and drought management activities, ***Figure D-26*** plots the modeled flow values for Alternative 11 and the NAA for the period from January 2007 through December 2009, which includes the drought of record in the ACT River Basin, to determine how flow conditions under Alternative 11 would compare to the NAA during that period. The plot shows little to no difference between Alternative 11 and the NAA. Any deviations between Alternative 11 and the NAA over that three-year period would are minor as shown in the figure. Therefore, the proposed reallocation of storage at Allatoona Lake would not be expected to worsen flow conditions in the Coosa River near Rome, GA under a similar extreme drought event in the future.

Based on a review of model outputs over the modeled period of record, Alternative 11 would not be expected to deviate appreciably from flow conditions in the Coosa River near Rome (Mayo's Bar) under the NAA.

Coosa River downstream of Logan Martin Dam. Potential changes in flow conditions in the Coosa River downstream of Logan Martin Dam under Alternative 11 are principally influenced by the APC-proposed modifications to flood operations and proposed changes to maximum surcharge levels and guide curves at the APC Weiss and Logan Martin projects. The HEC-ResSim model simulation demonstrates that the reservoir storage reallocation feature at Allatoona Lake in Alternative 11 would have little to no influence on flow conditions downstream of Logan Martin Dam.

Alternative 11 would likely result in minor changes to flow conditions in the Coosa River downstream of Logan Martin Dam compared to the NAA. Median flows in the Coosa River throughout the year under Alternative 11 would closely align with those for the NAA but would be slightly lower than the NAA in November and December as releases from Logan Martin Dam would decrease to maintain a higher winter pool level in the lake. Releases from the dam would be slightly higher than the NAA during January through April in response to modified flood operations that would increase releases during flood events (***Figure D-20***). At the 90 percent exceedance level, flows under Alternative 11 would be notably lower than the NAA from September through early January (ranging from 200 to 2,000 cfs lower) as releases would be reduced to maintain a higher winter pool level, but they would be higher from early January through February and in April associated with increased releases associated with the modified flood operations (***Figure D-21***).

Compared to the NAA, Alternative 11 model outputs over the period of record show a slight increase in releases at the 2 to 3 percent exceedance level compared to the NAA, a slight reduction in releases at the 3 to 10 percent exceedance level, and a slight reduction in releases at the 85 to 99 percent exceedance level (see ***Table 7-5***). Overall, Alternative 11 would likely have a minor effect on flow conditions in the Coosa River below Logan Martin Dam between September and March each year and little to no effect on flow conditions between April and August each year.

Table 7-5. Coosa River Downstream of Logan Martin Dam—Selected Flow Duration Data Over the Modeled Period of Record.

Period	% of days exceeded	NAA (cfs)	Alternative 11 (cfs)
Annual (entire year)	10	29,840	29,289
	25	14,414	14,414
	50	7,026	6,955
	75	5,094	5,081
	90	3,474	3,268
March	10	50,000	48,036
	25	33,028	31,625
	50	18.293	18,322
	75	12,007	12,015
	90	8,069	8,117
September	10	7,856	7,009
	25	5,120	5,108
	50	5,037	5,023
	75	3,398	2,826
	90	2,108	1,742

Alabama River at the confluence of the Coosa and Tallapoosa Rivers. As described in more detail in Draft FR/SEIS Appendix E, Section E.3.2.2.1.4, the modeled discharges for the Alabama River at the confluence of the Coosa and Tallapoosa rivers represent the sum of the releases over time from Jordan Dam, Bouldin Dam (two outlets from Jordan Lake on the Coosa River) and Thurlow Dam (the most downstream dam on the Tallapoosa River) and is referred to as the JBT (Jordan-Bouldin-Thurlow) flow. ***Figure D-22*** depicts median daily flow in the Alabama River at the confluence of the Coosa and Tallapoosa rivers for the NAA, analyzed over the 73-year period of record. ***Figure D-23*** presents the 90 percent exceedance daily flow values (dry conditions) over the modeled period of record. ***Figure D-24*** presents the 10-percent exceedance daily flow values (wet conditions) over the modeled period of record. ***Figure D-25*** is the annual flow duration curve for the Alabama River at the confluence of the Coosa and Tallapoosa rivers.

At this location, median flows throughout the year for Alternative 11 over the modeled period of record would closely align with those for the NAA. However, due to the residual downstream effects of proposed modifications to flood operations at the APC Weiss and Logan Martin projects, flows at this location would be marginally lower than the NAA in October through December, resulting from water management actions to maintain higher winter pool levels in Weiss and Logan Martin lakes. Median flows under Alternative 11 would be marginally higher from January through March associated with modified flood operations at the Logan Martin and Weiss projects (***Figure D-22***). At the 90 percent exceedance level, flows for Alternative 11 would be nearly the same as those for the NAA throughout the year, except for a slight decrease in December and slight intermittent increases in January, February, and April (***Figure D-23***). At the 10-percent exceedance level (wet conditions), flows for Alternative 11 and the NAA align closely, and there are no appreciable differences in flow conditions throughout the year (***Figure D-24***).

The annual duration curve for Alternative 11 (***Figure D-25***) is nearly identical to the annual duration curve for the NAA. See also the pertinent data presented in ***Table 7-6***. Review of monthly duration curves for flows in the Alabama River at the confluence of the Coosa River and Tallapoosa River revealed that the curves for Alternative 11 would be nearly identical to those for the NAA in all months of the year except for September, October, and December. In each of those three months, flows under Alternative 11 would be marginally lower on the portion of the curve that represents drier conditions at that location. This occurrence reflects the remaining residual effects of reduced releases at Weiss Dam and Logan Martin Dam in the fall to maintain a higher winter pool level.

Table 7-6. Alabama River Near Montgomery (JBT Flow)—Selected Flow Duration Data Over the Modeled Period of Record.

Period	% of days exceeded	NAA (cfs)	Alternative 11 (cfs)
Annual (entire year)	10	49,025	47,971
	25	24,089	24,091
	50	12,047	11,931
	75	8,260	8,232
	90	4,989	4,771
September	10	12,519	11,436
	25	9,005	8,768
	50	7,600	7,600
	75	4,640	4,640
	90	4,614	4,638
December	10	50,837	48,781
	25	26,606	25,508
	50	15,862	14,864
	75	9,985	9,340
	90	8,332	7,752

Alternative 11 is expected to have a negligible overall effect on flow conditions in the Alabama River at the confluence of the Coosa and Tallapoosa rivers and further downstream of Montgomery, AL. HEC-ResSim outputs addressing conditions under Alternative 11 and the NAA for R.F. Henry Lock and Dam/Robert "Bob" Woodruff Lake were reviewed to confirm this conclusion.

7.6 GENERAL EFFECTS ON WATER QUALITY

No Action Alternative

The NAA represents the current conditions with the current withdrawals at Allatoona Lake and the USACE storage accounting methodology. Water quality conditions under the NAA would generally be consistent with those described in Section 6.2 for the baseline conditions. Water quality impairments within the ROI under baseline conditions would remain under the NAA.

Tentatively Selected Plan (Alternative 11)

The results from Alternative 11 were analyzed along reaches and reservoirs within the ROI addressed by the Draft FR/SEIS (Coosa River and Etowah River upstream to Canton, Georgia) to determine the magnitude of any negative changes to water quality from the NAA and whether those changes would result in exceedances or additional exceedances of water quality standards. For this evaluation, the all-year model results were analyzed that reflect average water quality values throughout the year. Model results for specific time periods were analyzed if water quality standards specify use of growing season averages (e.g., chlorophyll *a* and TN). ***Table 7-7*** cross-references the alternative numbers with the alternative names included on the model graphs presented in **Appendix D**.

Table 7-7. Summary of Alternative Numbers and Model Names for HEC-5Q.

Alternative Number	Alternative Name in Model	Description
0	A0-BASE2018	No Action Alternative (NAA)
11	A11_WS6MF	Allatoona storage reallocation to enable withdrawals up to 94 mgd from combination of flood storage and conservation storage, using USACE current storage accounting methodology, and modified flood operations at APC Weiss and Logan Martin projects

Standards for water temperature do not allow increases of more than 1.5 °F during June – September. Along the Etowah River, there is no discernible difference between Alternative 11 and NAA water temperatures. For the Coosa River, the simulated temperatures for Alternative 11 only have small deviations from the NAA between H.N. Henry and Weiss and downstream of Weiss, none of which are greater than 1.5 °F (***Figure D-27***).

The model results demonstrate that Alternative 11 would not be expected to have a detectable effect on the DO concentrations upstream of Allatoona Lake compared to the NAA (***Figure D-3***). For Coosa River, Alternative 11 would have a minimal effect on the DO concentrations. Alternative 11 model results show a minor decrease in DO from the NAA of 0.16 mg/L downstream of Weiss Lake at the 95 percent occurrence; however, this change is not expected to have a significant impact on water quality (***Figure D-28***).

Downstream of Canton, the model predicts a peak difference in TP at the 95 percent occurrence between Alternative 11 and NAA of approximately 0.01 mg/L (10 µg/L). There are no other discernible changes in TP concentrations on the Etowah River (***Figure D-29***). The difference in TP near Canton is expected to amplify during a dry year to approximately 0.02 mg/L (20 µg/L) (***Figure D-30***). The Coosa River responds to Alternative 11 with very little change in TN from the NAA. A peak increase of less than 0.01 mg/L (10 µg/L) is modeled at 95 percent occurrence near Weiss Lake, but no other significant changes can be discerned.

For the Etowah River, modeled results show no discernible change in TN between TSP operations and the NAA. The HEC-5Q model simulations show a potential increase in TN concentrations of 0.03 mg/L immediately downstream of Weiss Lake at the 50 percent occurrence for Alternative 11 but a decrease in TN concentrations of approximately 0.14 mg/L at the 95 percent occurrence upstream of Weiss Lake (***Figure D-7***). Other less significant decreases in TN concentration can be noted farther downstream where concentrations are modeled about 0.04 mg/L lower at the 95 percent occurrence between Weiss Lake and H. Neely Henry Lake and by about 0.03 mg/L at the 95 percent occurrence upstream of Mitchell Lake (***Figure D-31***).

The model results demonstrate that Alternative 11 would not be expected to have an incremental effect on chlorophyll *a* concentration in Allatoona Lake compared to the NAA. Some temporary exceedances of standards at equivalent concentrations for both the NAA and Alternative 11 would occur (***Figure D-32***). For the Coosa River, Alternative 11 would have no discernible incremental effect on chlorophyll *a* concentration compared to the NAA.

Overall, median values that were modeled in HEC-5Q meet all state water quality standards along the Etowah River and the Coosa River and their reservoirs except for the TP concentration in Weiss Lake. Modeled values at the 95 percent occurrence fail to meet state standards in all reservoirs for chlorophyll *a* and in Weiss Lake for TP. DO standards are met at every reservoir for every occurrence level except Allatoona Lake and Logan Martin Lake at the 5 percent occurrence level. Modeled results at the 50 percent and 95 percent occurrence levels fail to meet the USEPA acceptable ranges for TP in all reservoirs and at the 5 percent occurrence level in Weiss Lake and H. Neely Henry Lake; however, USEPA acceptable ranges for TN are met in all reservoirs for all occurrence levels. The reservoirs failing to meet state standards or USEPA acceptable ranges fail regardless of whether Alternative 11 or NAA is implemented. Changes in concentrations of water quality parameters resulting from the implementation of Alternative 11, have no significant effects on the water quality in the region of interest.

7.7 EFFECTS ON FEDERALLY PROTECTED SPECIES AND CRITICAL HABITAT

Changes to water control operations under the TSP could potentially affect any species within the ROI. ***Table 7-8*** provides a summary of which river segments (and the associated reservoirs that are within those river segments) in the ROI include the ranges of federally protected species. An “x” is marked in the river segments that include the habitat range of each species. Non-aquatic species, such as the mammals and birds, that may be present in the ROI will have some dependency on the water resources in that area. However, those species are unlikely to be measurably affected by the very slight changes in flow, lake level, and water quality conditions in the primary rivers that result from the currently proposed action. While it is conceivable that they could be affected by the proposed action, the likelihood that these species would be adversely affected by the proposed action is negligible.

Fish, mussels, aquatic snails, and wetland/aquatic vegetation would have a greater potential to be affected by changes in water quality, stream flow and lake levels because many of these species have particular water quality and flow requirements. However, the water quality and water quantity changes within the ROI are expected to be negligible to minor. The proposed action will not result in the permanent conversion of one habitat type into another but will result in changes to the duration of inundation along the margins of lakes and slight seasonal differences in flow of the downstream river segments. Based on the timing, frequency, and magnitude of changes that are expected between the baseline conditions and the TSP in each of the river reaches and reservoirs, aquatic species are not expected to be adversely affected.

Considering the degree to which water quality, hydrology and flow are altered from natural conditions under baseline conditions, the effects of changes under the TSP should be negligible on wildlife that inhabits the ROI. Effects on bird species that are protected under the Migratory Bird Treaty Act are also expected to be negligible.

Eleven mussel and snail species have critical habitat within an 11-mile reach of the Coosa River immediately below Weiss Dam, as identified in Section 5.7. This is the only area of critical habitat within the ROI, and it will experience only marginal changes in streamflow due to the residual downstream effects of proposed modifications to flood operations at the APC Weiss and Logan Martin projects, as detailed in Section 7.5.1.2. These slight changes are not expected to adversely affect this area of critical habitat.

Table 7-8. Summary of ROI River Segments and Ranges of Protected Species.

Common name	Etowah River – Canton, GA to Allatoona Dam	Etowah River – Allatoona Dam to Rome, GA	Coosa River – Rome, GA to Weiss Dam	Coosa River – Weiss Dam to H. Neely Henry Dam	Coosa River – H. Neely Henry Dam to Logan Martin Dam	Coosa River – Logan Martin Dam to Jordan Dam	Coosa River – Jordan Dam to the Alabama River
Mammals							
Gray Bat	-	x	x	x	x	x	-
Indiana Bat	-	-	x	x	x	x	-
Northern Long-Eared Bat	x	x	x	x	x	x	-
Birds							
Red-Cockaded Woodpecker	-	-	-	-	-	x	-
Wood Stork	-	-	-	-	-	x	x
Fish							
Blue Shiner	-	-	x	-	-	-	-
Cherokee Darter	-	x	-	-	-	-	-
Etowah Darter	-	x	-	-	-	-	-
Mussels (Clams)							
Alabama Moccasinshell	-	-	-	-	-	-	x
Coosa Moccasinshell	-	-	-	x	-	-	x
Finelined Pocketbook	-	-	x	x	x	x	x
Georgia Pigtoe	-	-	x	-	-	-	-
Ovate Clubshell	-	-	x	x	x	x	x
Southern Acornshell	-	-	x	-	-	x	x
Southern Clubshell	-	x	x	x	x	x	x
Southern Pigtoe	-	x	x	x	x	x	x
Triangular Kidneyshell	-	-	x	-	-	x	x

Common name	Etowah River – Canton, GA to Allatoona Dam	Etowah River – Allatoona Dam to Rome, GA	Coosa River – Rome, GA to Weiss Dam	Coosa River – Weiss Dam to H. Neely Henry Dam	Coosa River – H. Neely Henry Dam to Logan Martin Dam	Coosa River – Logan Martin Dam to Jordan Dam	Coosa River – Jordan Dam to the Alabama River
Upland Combshell	-	-	*x*	*x*	*x*	*x*	*x*
Snails							
Interrupted (=georgia) Rocksnail	-	-	*x*	-	-	-	*x*
Painted Rocksnail	-	-	-	-	-	*x*	-
Rough Hornsnail	-	-	-	-	-	*x*	*x*
Tulotoma Snail	-	-	-	-	-	*x*	*x*
Flowering Plants							
Alabama Leather Flower	-	*x*	*x*	*x*	-	-	-
Georgia Rockcress	-	*x*	*x*	-	-	-	*x*
Green Pitcher-Plant	-	-	*x*	*x*	-	-	-
Harperella	-	-	*x*	-	-	-	-
Large-Flowered Skullcap	*x*	*x*	*x*	-	-	-	-
Mohr's Barbara's Buttons	-	*x*	*x*	*x*	*x*	-	-
Tennessee Yellow-Eyed Grass	-	*x*	*x*	-	*x*	-	-
White Fringeless Orchid	*x*	*x*	-	-	*x*	-	-
Whorled Sunflower	-	*x*	*x*	-	-	-	-

7.8 CUMULATIVE EFFECTS

Cumulative effects of the proposed action on the environment in general are discussed in greater detail in Section 5 of the Draft FR/SEIS. Reference is made to that discussion; however, this discussion is focused on potential effects to federally listed threatened and endangered species.

Cumulative effects in ecosystems are defined as, “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions”

(40 Code of Federal Regulations Parts 1500–1508). Constructing dams in riverine ecosystems abruptly, severely, and permanently alters many important physical and biological processes involving the movement of water, energy, sediments, nutrients, and biota. Eighteen dams impound mainstem channels of the ACT Basin, eliminating, fragmenting, and dramatically altering riverine habitat. USACE owns and operates five of those with APC owning the remainder. It should be re-emphasized that although the Alabama portion of the basin wide drought plan was developed in coordination with APC, USACE has no operational control over their water releases. During droughts, flows on the Coosa River below Weiss Dam (APC owned), the Tallapoosa River below Harris Dam (APC owned) and the Alabama River are almost entirely dependent on those APC releases from upstream projects.

Water quality is influenced by a number of factors, including pollutant loads and in-stream flows (water quantity). Pollutant loads include both point and nonpoint sources of pollution. Point sources of pollution are regulated by USEPA through the NPDES under the Water Pollution Act of 1972 as amended. Nonpoint sources of pollution are also targeted to reduce pollutant loads under the Water Pollution Act of 1972 as amended through TMDLs. Enforcement of reductions is varied because of limited resources. As activities in the ACT Basin change from forested to urban land cover, especially in the headwaters areas of the Etowah River Basin, peak flows in the system are likely to increase and base flows in the system are likely to decrease. Urban land cover generally decreases interception of rainfall and infiltration, increasing stormwater runoff. That would be expected to result in less assimilative capacity during periods of low flow because base flow decreases. The combined total of all these activities including reservoirs past and future along with growing M&I demand, land use, point source discharge and resulting water quality could have future impacts on the environment in general and on listed species in particular.

USACE believes that the proposed action would not add to or worsen the cumulative effects described above. We believe that there would be no cumulative effect on listed species and for some factors as previously discussed would represent an improvement.

8.0 CONCLUSION

Based on the effects analyses described in Section 7, the USACE has determined that the proposed action may affect but is not likely to adversely affect federally protected species in the Coosa River and Etowah River basins that are within the ROI. This is a subset of the species listed in ***Table 1-1*** and includes all the species detailed in Section 5.0: Gray bat, Indiana bat, Northern long-eared bat, Wood stork, Red-cockaded woodpecker, Blue shiner, Cherokee darter, Etowah darter, Alabama moccasinshell, Coosa moccasinshell, Finelined pocketbook, Georgia pigtoe, Ovate clubshell, Southern acornshell, Southern clubshell, Southern pigtoe, Triangular kidneyshell, Upland combshell, Interrupted rocksnail, Painted rocksnail, Rough hornsnail, Tulotoma snail, Alabama leather flower, Georgia rockcress, Green pitcher-plant, Harperella, Large-flowered skullcap, Mohr's Barbara's buttons, Tennessee yellow-eyed grass, White fringeless orchid, and Whorled sunflower.

The proposed action will have no effect on federally protected species that are not within the ROI. This includes the following subset of species listed in ***Table 1-1***: *Bog turtle, Flattened musk turtle, Black warrior waterdog, Amber darter, Cahaba shiner, Conasauga logperch, Goldline darter, Pygmy sculpin, Rush darter, Snail darter, Trispot darter, Vermilion darter, Cumberland bean, Dark pigtoe, Orangenacre mucket, Cylindrical lioplax, Lacy elimia, Plicate rocksnail, Alabama canebrake pitcher-plant, Gentian pinkroot, Kral's water-plantain, Michaux's sumac, Small whorled pogonia, Swamp pink, Ruth's golden aster, and Virginia spiraea.*

The proposed reservoir storage reallocation for water supply at Allatoona Lake and proposed modifications to flood operations at Weiss and Logan Martin dams may affect but is not likely to adversely modify or destroy critical habitat within the ROI, as identified in Section 5.7 and discussed in Section 7.7. Species with critical habitat in the ROI include: Amber darter, Alabama moccasinshell, Coosa moccasinshell, Finelined pocketbook, Georgia pigtoe, Ovate clubshell, Southern acornshell, Southern clubshell, Southern pigtoe, Triangular kidneyshell, Upland combshell, Interrupted rocksnail, Rough hornsnail, and Whorled sunflower.

The rationale for this determination is based on the finding that effects of the TSP would be limited to an ROI defined as the Etowah River at its confluence with Hickory Log Creek at Canton, GA, downstream to its confluence with the Oostanaula River at Rome, GA, including Allatoona Dam and Lake; and the Coosa River at Rome downstream to its confluence with the Tallapoosa River near Montgomery, AL. Changes in water quality and quantity will not affect water bodies or upland areas outside of this ROI, and will therefore have no effect on protected species with ranges that are entirely outside of the ROI. Within the ROI, water quality and water quantity changes are expected to be negligible to minor, and within the habitat requirements of all the protected species evaluated.

Therefore, we request concurrence with this determination per section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq).

9.0 REFERENCES

ADCNR. (2014a). *Blue Shiner*. Retrieved April 2019, from Outdoor Alabama: https://www.outdooralabama.com/shiners/blue.

ADCNR. (2014b). *Red-Cockaded Woodpecker*. Retrieved February 2014, from Outdoor Alabama: http://www.outdooralabama.com/watchable-wildlife/what/birds/ woodpeckers/rcw.cfm.

ADCNR. (2019a). *Alabama Hunting and Wildlife Regulations*. Retrieved October 22, 2019, from Outdoor Alabama: https://www.outdooralabama.com/hunting/alabama-hunting-and-wildlife-regulations.

ADCNR. (2019b). *Wood Stork*. Retrieved August 26, 2019, from Outdoor Alabama: https://www.outdooralabama.com/herons/wood-stork

ANHP. (2017). *Alabama Inventory List, The Rare, Threatened, & Endangered Plants and Animals of Alabama.* Alabama Natural Heritage Program.

Frick, E., Hippe, D., Buell, G., Couch, C., Hopkins, E., & et al. (1998). Water quality in the Apalachicola-Chattahoochee-Flint River Basin, Georgia, Alabama, and Florida, 1992–1995. *Circular 1164*.

GADNR. (2009a). *Gray bat*. Retrieved April 2019, from Georgia Wildlife: https://georgiawildlife.com/sites/default/files/wrd/pdf/fact-sheets/2009_gray_bat.pdf.

GADNR. (2009b). *Indiana Bat*. Retrieved April 2014, from Georgia Wildlife: https://georgiawildlife.com/sites/default/files/wrd/pdf/fact-sheets/2009_indiana_bat.pdf.

GADNR. (2015). *Northern Long-eared bat*. Retrieved April 2019, from Georgia Wildlife: https://georgiawildlife.com/sites/default/files/wrd/pdf/fact-sheets/2015_northern_long-eared-bat.pdf.

GADNR. (2019). *General Information about Rare Natural Elements*. Retrieved March 1, 2019, from Georgia Biodiversity Portal: https://georgiabiodiversity.org/natels/general-info.html.

Mettee, M., O'Neil, P., & Pierson, J. (1996). *Fishes of Alabama and the Mobile Basin.* Oxmoor House, Birmingham, Alabama.

NatureServe. (2014a). *White Fringeless Orchid*. Retrieved March 2014, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2014b). *Whorled Sunflower*. Retrieved March 2014, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019a). *Etowah Darter*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org.

NatureServe. (2019b). *Finelined Pocketbook*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org.

NatureServe. (2019c). *Ovate Clubshell*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019d). *Southern Acornshell*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019e). *Southern Clubshell*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019f). *Triangular Kidneyshell*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019g). *Upland Combshell*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019h). *Interrupted Rocksnail*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/

NatureServe. (2019i). *Painted Rocksnail*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019j). *Tulotoma*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019k). *Alabama Leatherflower*. Retrieved October 25, 2019, from NatureServe Explorer: http://explorer.natureserve.org.

NatureServe. (2019l). *Tennessee Yellow-Eyed Grass*. Retrieved October 25, 2019, from NatureServe Explorer: http://explorer.natureserve.org.

Parmalee, P., & Bogan, A. (1998). *The Freshwater Mussels of Tennessee.* University of Tennessee Press, Knoxville.

Sparks, R. (1992). Risks of altering the hydrologic regime of large rivers. (B. N. J. Cairns, Ed.) *Predicting Ecosystem Risk, Volume XX: Advances in Modern Environmental Toxicology*, 119-152.

Sparks, R. (1995). Need for ecosystem management of large rivers and their floodplains. *BioScience 45:168-182.*

Tennessee Department of State. (2016). Proclamation 1660-01-32, Endangered and Threatened Species (June 2016). Retrieved August 26, 2019, from Watchable Wildlife in Tennessee: https://www.tn.gov/content/dam/tn/twra/documents/1660-01-32%20threatened-endangered-species-rule.pdf

Tetra Tech, Inc. (2012, April 16). *Area Capacity Curves - Allatoona Lake, Georgia.* Atlanta, GA: Tetra Tech, Inc. (for the U.S. Army Corps of Engineers, Mobile District).

Tilman, D., Downing, J., & Wedin, D. (1994). Does diversity beget stability? *Nature 371:257-264.*

Toth, L. (1995). Need for ecosystem management of large rivers and their floodplains. (J. Cairns, Ed.) *Rehabilitating Damaged Ecosystems, 2nd edition*, 49-73.

TWRA. (2019). *Watchable Wildlife in Tennessee*. Retrieved March 2019, from Tennessee Wildlife Resources Agency: www.tn.gov/content/tn/twra/wildlife.html.

USACE ERDC. (2007). *Assessment of the Population Status of the Gray Bat (Myotis grisescens), Environmental Laboratory Technical Report 07-22.* Vicksburg, MS: United States Army Corps of Engineers Engineer Research and Development Center.

USACE Mobile District. (1962). *Alabama-Coosa River Basin Reservoir Regulation Manual, Appendix A, Allatoona Reservoir, Georgia.* Mobile, AL: U.S. Army Corps of Engineers, Mobile District.

USACE Mobile District. (1993). *Alabama-Coosa River Basin Water Control Manual, Appendix A, Allatoona Reservoir, Etowah River, Georgia.* Mobile, AL: U.S. Army Corps of Engineers, Mobile District.

USACE Mobile District. (1998). *Water Allocation for the Alabama-Coosa-Tallapoosa (ACT) River Basin, Alabama and Georgia, Draft Environmental Impact Statement.* Mobile, Alabama: US Army Corps of Engineers, Mobile District.

USACE Mobile District. (2003). *Biological Assessment: Species Identification Interim Report for the Alabama–Coosa–Tallapoosa (ACT) River Basin.* Mobile, AL: U.S. Army Corps of Engineers, Mobile District.

USACE Mobile District. (2014). *Final Environmental Impact Statement Update of the Water Control Manual for the Alabama-Coosa-Tallapoosa River Basin in Georgia and Alabama.* Mobile, Alabama: U.S. Army Corps of Engineers, Mobile District.

USACE Mobile District. (2018, December 14). Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Project Water Control Manuals (presentation to Planning Chief, USACE South Atlantic Division). Mobile, AL, AL: U.S. Army Corps of Engineers, Mobile District .

USEPA. (n.d.). *Total Nitrogen*. Retrieved from https://www.epa.gov/sites/production/files/2015-09/documents/totalnitrogen.pdf

USFWS. (1989). *Alabama Leather Flower Recovery Plan.* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (1990). *Harperella (Ptilimnium nodosum) Recovery Plan.* Newton Corner, Massachusetts.

USFWS. (1991). *Recovery Plan for Mohr's Barbara's Buttons.* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (1992). *Endangered and Threatened Wildlife and Plants; Endangered Status for Schwalbea americana (American Chaffseed).* U.S. Fish and Wildlife Service.

USFWS. (1993). *Recovery Plan for pondberry (Lindera melissifolia).* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (1994). *Green Pitcher Plant Recovery Plan.* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (1995). *Recovery Plan, Blue Shiner (Cyprinella caerulea).* U. S. Fish and Wildlife Service Southeast Region, Atlanta, GA.

USFWS. (1997). *Revised Recovery Plan for the U.S. Breeding Population of the Wood Stork.* U.S. Fish and Wildlife Service. Atlanta, Georgia.

USFWS. (1998). *Appendix E: Working Draft Fish and Wildlife Coordination Act Report for the ACF River Basin Water Allocation Formula. In Water Allocation for the Apalachicola-Chattahoochee-Flint (ACF) River Basin, Alabama, Florida, and Georgia, Volume 2. Draft.* U.S. Army Corps of Engineers, Mobile District, Mobile, Alabama.

USFWS. (2000). *Recovery Plan for Mobile River Basin Aquatic Ecosystem.* Atlanta, GA: U.F. Fish and Wildlife Service, Southeast Region.

USFWS. (2004). *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Three Threatened Mussels and Eight Endangered Mussels in the Mobile River Basin; Final Rule.* Federal Register 69(126):40083-40171.

USFWS. (2005). *Recovery Plan for 6 Mobile River Basin Aquatic Snails.* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (2006). *5-year review of Cylindrical Lioplax (Lioplax cyclostomatiformis), Flat Pebblesnail (Lepyrium showalteri), Plicate Rocksnail (Leptoxis plicata), Painted Rocksnail, (Leptoxis taeniata), Round Rocksnail (Leptoxis ampla) and Lacy Elimnia (Elima crenatella).* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (2007). *The Alabama, Coosa, and Tallapoosa River Watershed Critical Habitat for Protected Mussel Species.* Daphne, AL: U.S. Fish and Wildlife Service, Alabama Field Office.

USFWS. (2008). *Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Reviews of 10 Listed Species. Notices.* Federal Register 73(15):3991-3993.

USFWS. (2010a). *Endangered and threatened wildlife and plants; determination of endangered status for the Georgia pigtoe mussel, interrupted rocksnail, and rough hornsnail and designation of critical habitat; Final Rule.* Federal Register. November 2, 2010, 75(211):67512-67550.

USFWS. (2010b). *Fish and Wildlife Service Conducts Five-year Status Reviews of 10 Southeastern Species*. Retrieved June 2010, from http://www.fws.gov/southeast/news/2010/r10-031.html.

USFWS. (2017). *2017 Indiana Bat (Myotis sodalis) Population Status Update.* U.S. Fish and Wildlife Service, Indiana Ecological Services Field Office. Revised November 13, 2018.

USFWS. (2019a). *ECOS Environmental Conservation Online System*. Retrieved May 1, 2019, from U.S. Fish and Wildlife Service: https://ecos.fws.gov/ecp/.

USFWS. (2019b). *Official Species List- Coosa and Etowah Basins_Alabama.* Consultation Code: 04EA1000-2020-SLI-0119. Event Code: 04EA1000-2020-E-00229. Project Name: ACR Coosa and Etowah 10-28-19. Retrieved October 28, 2019.

USFWS. (2019c). *Official Species List- Coosa and Etowah Basins_Georgia.* Consultation Code: 04EG1000-2020-SLI-0246. Event Code: 04EG1000-2020-E-00452. Project Name: ACR Coosa and Etowah 10-28-19. Retrieved October 28, 2019.

USFWS. (2019d). *Official Species List- Coosa and Etowah Basins_Tennessee.* Consultation Code: 04ET1000-2020-E-0176. Event Code: 04ET1000-2020-E-00223. Project Name: ACR Coosa and Etowah 10-28-19. Retrieved October 28, 2019.

USFWS. (2019e). Threatened & Endangered Species Active Critical Habitat Report. Critical habitat shapefiles ("crithab_all_layers.zip"). Shapefiles updated March 19, 2019. U.S. Fish & Wildlife Service. Retrieved March 20, 2019, from https://ecos.fws.gov/ecp/report/table/critical-habitat.html.

Williams, J., & Hughes, M. (1998). *Freshwater Mussels (Unionidae) of Selected Reaches of the Main Channel Rivers of the Coosa Drainage of Georgia.* U.S. Geological Survey, Florida Caribbean Science Center, Gainsville, Florida.

Ziewitz, J., Luprek, B., & Kasbohm, J. (1997). *Comprehensive Study's Protected Species Inventory and Identification in the ACT and ACF River Basins. Volume I.* Fish and Wildlife Service, Panama City, Florida.

APPENDIX A BIOLOGICAL ASSESSMENT — PROPOSED UPDATE TO THE WATER CONTROL MANUAL FOR THE ALABAMA-COOSA-TALLAPOOSA RIVER BASIN IN GEORGIA AND ALABAMA (2014)

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

February 18, 2014

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Mr. William Pearson
Field Supervisor
U.S. Fish and Wildlife Service
1208-B Main Street
Daphne, Alabama 36526

Dear Mr. Pearson:

The enclosed document provides a Biological Assessment (BA) pursuant to the informal consultation procedures of Section 7 of the Endangered Species Act for the proposed Water Control Manual (WCM) updates for the Alabama-Coosa-Tallapoosa (ACT) River Basin. As discussed in the document, we believe that for all of the listed species and/or designated Critical Habitat occurring within the ACT Basin, there will be either a "no effect" or "likely to affect, but unlikely to adversely affect" result of the proposed action. We request your concurrence with each of these determinations. In addition we request an updated list of listed species from those of the U.S. Fish and Wildlife Service's scoping comment letter dated October 16, 2008, and the Department of Interior letter dated May 29, 2013, which provided comments on the Draft Environmental Impact Statement.

Thank you for your continued assistance in the update of the WCM. If you have any questions regarding the BA or wish to discuss it or the proposed action either by telephone or in person, please contact Mr. Chuck Sumner at (251) 694-3857 or email at lewis.c.sumner@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosure

BIOLOGICAL ASSESSMENT
PROPOSED UPDATE OF THE WATER CONTROL MANUAL FOR THE ALABAMA-COOSA-TALLAPOOSA RIVER BASIN IN GEORGIA AND ALABAMA

1. INTRODUCTION

On 1 March 2013, the U.S. Army Corps of Engineers, Mobile District (USACE) released a Draft Environmental Impact Statement (DEIS) for an Update of the Water Control Manual for the Alabama-Coosa-Tallapoosa (ACT) River Basin in Georgia and Alabama. The DEIS has been provided to the U.S. Fish and Wildlife Service (Service) Daphne, Alabama and Athens, Georgia field offices. Other related communication between our agencies include a Service scoping comment letter dated October 16, 2008 to USACE District Commander Byron Jorns, a Planning Aid Letter (PAL) from the Service Daphne Field Office to USACE District Commander Byron Jorns dated May 3, 2010, a response to the PAL from USACE Mobile District dated June 6, 2011, USACE November 22, 2011 Response to Service Questions, a Draft Fish and Wildlife Coordination Act Report (DFWCAR) provided by the Service Daphne Field Office, dated December 21, 2012, and a USACE Mobile District response to the DFWCAR dated February 8, 2013. In addition, a Department of the Interior letter commenting on the DEIS dated May 29, 2013, provided Service comments and a list of Federally listed threatened and endangered species potentially affected by the proposed action. The ACT Basin supports a wide variety of wildlife and is home to approximately 230 species that are protected or included as candidate species by the states and the federal government. Of those, 143 are federally listed as Threatened or Endangered. These species can be further broken down to species that are associated with riverine habitat, which, because of where they occur, have the greatest potential to be affected by changes in basin operations. Table 1 is a list of the species potentially affected by the proposed action based on available information, the Service scoping comment letter of October 16, 2008, and the Department of the Interior (DOI) letter commenting on the DEIS dated May 29, 2013. Because the Service scoping letter and DOI comment letter are over 180 days old, USACE is requesting verification of the species list.

Table 1. Listed Species Potentially Affected by USACE Proposed Action.

Common Name	Scientific Name	Status[1]	Critical Habitat within Affected Area
Mitchell's satyr butterfly	*Neonympha m. mitchellii*	E	No
Wood stork	*Mycteria americana*	E	No
Red cockaded woodpecker	*Picoides borealis*	E	No

Alabama beach mouse	*Peromyscus polionotus ammobates*	E	No
West Indian manatee	*Trichechus manatus*	E	No
Kemp's ridley sea turtle	*Lepidochelys kempii*	E	No
Eastern indigo snake	*Drymarchon corais couperi*	T	No
Black pine snake	*Pituophis melanoleucus lodingi*	C	No
Red hills salamander	*Phaeognathus hubrichti*	T	No
Alabama red-belly turtle	*Pseudemys alabamensis*	E	No
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	T	No
Blue shiner	*Cyprinella caerulea*	T	No
Etowah darter	*Etheostoma etowahae*	E	No
Cherokee darter	*Etheostoma scotti*	T	No
Cahaba shiner	*Notropis cahabae*	E	No
Amber darter	*Percina antesella*	E	Yes
Goldline darter	*Percina aurolineata*	T	No
Conasauga logperch	*Percina jenkinsi*	E	Yes
Alabama sturgeon	*Scaphirhynchus suttkusi*	E	Yes
Finelined pocketbook	*Lampsilis altilis*	T	Yes
Orange-nacre mucket	*Lampsilis perovalis*	T	Yes
Alabama moccasinshell	*Medionidus acutissimus*	T	Yes
Coosa moccasinshell	*Medionidus parvulus*	E	Yes
Ovate clubshell	*Pleurobema perovatum*	E	Yes
Southern clubshell	*Pleurobema decisum*	E	Yes
Southern pigtoe	*Pleurobema georgianum*	E	Yes
Triangular kidneyshell	*Ptychobranchus greenii*	E	Yes
Southern acornshell	*Epioblasma othcaloogensis*	E	Yes
Upland combshell	*Epioblasma metastriata*	E	Yes
Alabama pearlshell	*Margaritifera marrianae*	E	Yes
Southern combshell	*Epioblasma penita*	E	No
Heavy pigtoe	*Pleurobema taitianum*	E	No
Alabama heelsplitter	*Potomilus inflatus*	E	No
Georgia pigtoe	*Pleurobema hanleyianum*	E	Yes
Interrupted rocksnail	*Leptoxis foremani*	E	Yes
Rough hornsnail	*Pleurocera foremani*	E	Yes
Lacy elimia	*Elimia crenatella*	T	No
Round rocksnail	*Leptoxis ampla*	T	No
Painted rocksnail	*Leptoxis taeniata*	T	No
Flat pebblesnail	*Lepyrium showalteri*	E	No

Cylindrical lioplax snail	*Lioplax cyclostomaformis*	E	No
Tulotoma snail	*Tulotoma magnifica*	T	No
Price's potato bean	*Apios priceana*	T	No
Georgia rockcress	*Arabis Georgiana*	C	Yes
Alabama leather flower	*Clematis socialis*	E	No
Whorled sunflower	*Helianthus verticillatus*	C	No
Mohr's Barbara's buttons	*Marshallia mohrii*	T	No
White fringeless orchid	*Platanthera integrilabia*	C	No
Harperella	*Ptilimnium nodosum*	E	No
Michaux's Sumac	*Rhus michauxii*	E	No
Kral's water-plantain	*Sagittaria secundifolia*	T	No
Green pitcher-plant	*Sarracenia oreophila*	E	No
Alabama canebrake pitcher plant	*Sarracenia rubra alabamensis*	E	No
Georgia aster	*Symphyotrichum georgianum*	C	No
Tennessee yellow-eyed grass	*Xyris tennesseensis*	E	No
[1]E - Endangered, T - Threatened, C – Candidate			

All of the species listed in Table 1 have a dependence on the aquatic environment or occur in geographic proximity to the aquatic environments of the ACT basin. However, of these, Mitchell's satyr butterfly, Red cockaded woodpecker, Alabama beach mouse, Kemp's ridley sea turtle, Eastern indigo snake, Black pine snake, Price's potato bean, Alabama leather flower, Whorled sunflower, Mohr's Barbara's buttons, White fringeless orchid, Michaux's Sumac, and Georgia aster are found in areas outside the range of aquatic habitats potentially impacted by flow regime or water quality changes (i.e. nearby upland areas). Therefore, there would be no effect on these species and they are not further addressed in this biological assessment. Effects to the remaining species in Table 1 are evaluated in this biological assessment and the results of that effects analysis are described in the EFFECTS ANALYSIS section below.

2. PURPOSE AND NEED

The purpose and need for the federal action is to determine how the federal projects in the ACT Basin should update operations for their authorized purposes, in light of current conditions and applicable law, and to implement those operations through updated water control plans and manuals. The action will result in updated plans and manuals that comply with existing Corps regulations and reflect operations under existing congressional authorizations, taking into account changes in basin hydrology and demands from years of growth and development, new/rehabilitated structural features, legal developments, and environmental issues. Corps regulations also provide specific policy and guidance for inclusion of drought contingency plans as part of Corps' overall water control management activities. To be effective, the drought plan for the ACT Basin must incorporate a comprehensive, basin-wide approach that considers the interrelationship of Corps projects and Alabama Power Company (APC) projects in the basin.

This WCM update includes a proposed drought plan for the basin developed in collaboration with APC. In addition to operations at Corps projects in the ACT basin, flood control operations at two APC projects (H. Neely Henry and R.L. Harris) would be updated in their respective water control manuals.

In order to understand the purpose of this proposed action, it is also important to understand the limits of the action and what is not included. USACE is not proposing to build, install, or upgrade any facilities. USACE is not proposing to modify any authorized project purpose via this action, although the extent to which some can be achieved may be affected. This action is limited to the way reservoir levels are managed and water is released from them.

3. PROPOSED ACTION

Throughout development of the water control manual update and preparation of the DEIS, the USACE provided summaries of the proposed action to the Service. Therefore, the proposed action is summarized here and reference made to the full discussion in Section 5 of the DEIS.

Operations under the Proposed Action include the following:

• Implement a revised drought plan with enhancements recommended by the Service.

• Provide for seasonal navigation releases to support commercial navigation in the Alabama River for a 9.0-ft or 7.5-ft channel depth as long as sufficient basin inflow above the APC projects is available. When sufficient flows cannot be provided to continue to support a minimum 7.5-ft navigation channel, navigation could be impeded and flows at Montgomery would be reduced to 4,640 cfs (7Q10). If one or more of the drought operations triggers (low basin inflows, low composite conservation storage, or low state line flows) are met, minimum flows at Montgomery would be dropped below 4,640 cfs in accordance with specific protocols developed collaboratively between the Corps and APC (discussed in detail in Section 5 of the DEIS).

• APC projects would continue to operate under their current Federal Energy Regulatory Commission (FERC) licenses with specific operational requirements.

• The APC project, H. Neely Henry Lake (Coosa River), which operates with a revised guide curve under a FERC license variance (with Corps concurrence) would continue to operate under its revised guide curve.

• Allatoona Reservoir would continue to provide for a 240-cfs minimum flow.

• The existing guide curve at Allatoona Reservoir would be revised to implement a phased fall drawdown period from early September through December. Refined operations at Allatoona Reservoir would include use of four action zones shaped to mimic the seasonal demands for hydropower. Modifications to the hydropower schedule would be put in place to provide greater operational flexibility to meet power demands while conserving storage. Specifically, under the PAA, hydropower generation would be reduced during annual drawdown in the fall (September through November).

•The current minimum flow requirement would remain 240 cfs from Carters Reregulation Dam. Refined operations at Carters Reservoir would include the use of two action zones to manage downstream releases. The top of the new action zone 2 begins at elevation 1,066 ft in January, increasing to 1,070.5 ft in May, dropping to 1,070 ft by October, and returning to elevation 1,066 ft through December. When Carters Reservoir is in action zone 1, minimum flow releases at Carters Reregulation Dam would be equal to the seasonal minimum flow. Those minimum flow releases are based on the mean monthly flow upstream of Carters Reservoir. If Carters Reservoir elevations drop into action zone 2, minimum flow releases from Carters Reregulation Dam would be 240 cfs.

• The Corps reserves 6,371 ac-ft of storage space in Allatoona Reservoir for water supply for the City of Cartersville, GA and 13,140 ac-ft for the Cobb County Marietta Water Authority. Total storage space allocated to water supply is 19,511 ac-ft.

• The Corps reserves 818 ac-ft in Carters Reservoir for water supply for the City of Chatsworth, GA.

• The Corps would continue to manage fish spawning operations at Allatoona Reservoir. During the largemouth bass spawning period, from March 15 to May 15, the Corps seeks to maintain generally stable or rising reservoir levels at Allatoona Reservoir. Generally stable or rising levels are defined as not lowering the reservoir levels by more than 6 inches, with the base elevation generally adjusted upward as levels rise from increased inflows or refilling of the reservoir.

• The Corps would continue migratory fish passage operations at Claiborne Lock and Dam and Millers Ferry Lock and Dam.

4. ACTION AREA

Service regulations define “action area” as all areas affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR §402.02). The ACT water control manual update specifically addresses releases from the five federal projects, navigation support and flood risk management actions at two Alabama Power Company (“APC”) projects (H. Neely Henry Dam and Lake and R.L. Harris Dam and Lake). These releases are accomplished through the respective independent operations of all of the USACE and APC reservoirs in the ACT River Basin. Although, the action area includes all aquatic habitats downstream of the USACE upstream-most ACT projects, Allatoona Reservoir and Carters Reservoir, ending with and including Mobile Bay (Figure 1), large portions of the middle basin are regulated by APC's operation of its FERC licensed projects. In addition to the two listed above, the APC projects include Weiss Dam and Lake, Logan Martin Dam and Lake, Lay Dam and Lake, Mitchell Dam and Lake, Walter Bouldin Dam and Lake, Jordan Dam, Martin Dam and Lake, Yates Dam and Thurlow Dam. This portion of the basin was addressed by the Service in its June 7, 2012 Biological Opinion (BO) issued for the proposed Federal Energy Regulatory Commission's relicensing of APC's seven hydropower projects on the Coosa River. The river flow regime in this portion of the middle basin is predicated on the operation of those seven APC hydropower projects rather than upstream operations at USACE projects. These APC operations have already been consulted on and are subject to the terms and conditions of the June 7, 2012 BO and Incidental Take Statement. Therefore, while the action area includes all aquatic habitats that are downstream of the USACE upstream-most ACT projects, Allatoona Dam and Carters Dam, ending with and including Mobile Bay, the effects analysis of the USACE proposed action are limited to the aquatic habitats downstream of Allatoona Dam and Carters Dam to the APC-owned Weiss Dam; and from Montgomery down to and including Mobile Bay. This portion of the action area, which we address in the remainder of this BA, is shown in Figure 2. Hereafter, our use of the term "action area" refers to this limited portion of the broader action area.

5. STATUS OF THE SPECIES/CRITICAL HABITAT

During preparation of the DEIS, surveys for listed species in the ACT basin were conducted in cooperation with the Service. These were previously provided to the Service and include (1) Quantitative Sampling of *Pleurobema taitianum* in the Alabama River; (2)Survey for *Tulotoma magnifica* in Mainstem of Alabama River, Freshwater Mussels (Unionidae) and Aquatic Snails of Selected Reaches of the Coosa Drainage, Georgia; (3) Burrow Occupancy of the Red Hills Salamander at Haines Island Park and Survey for Populations West of the Alabama River; (4) Fish assemblage survey of selected sites in the Alabama River and associated Tributaries; (5) Inventory of Federally Listed and Sensitive Plant and Select Animal Species on U.S. Army Corps of Engineers Landholdings along the Alabama River.

All individual species descriptive information is from USFWS resource documents located at http://www.fws.gov/endangered and from the NatureServe Explorer at http://www.natureserve.org/explorer referenced from the USFWS site. The information presented here is a summary of the species and Critical Habitat and/or habitat requirements. The DEIS also has additional information regarding the historic and current ranges of the species. That information is located in section 2.5.4 of the DEIS.

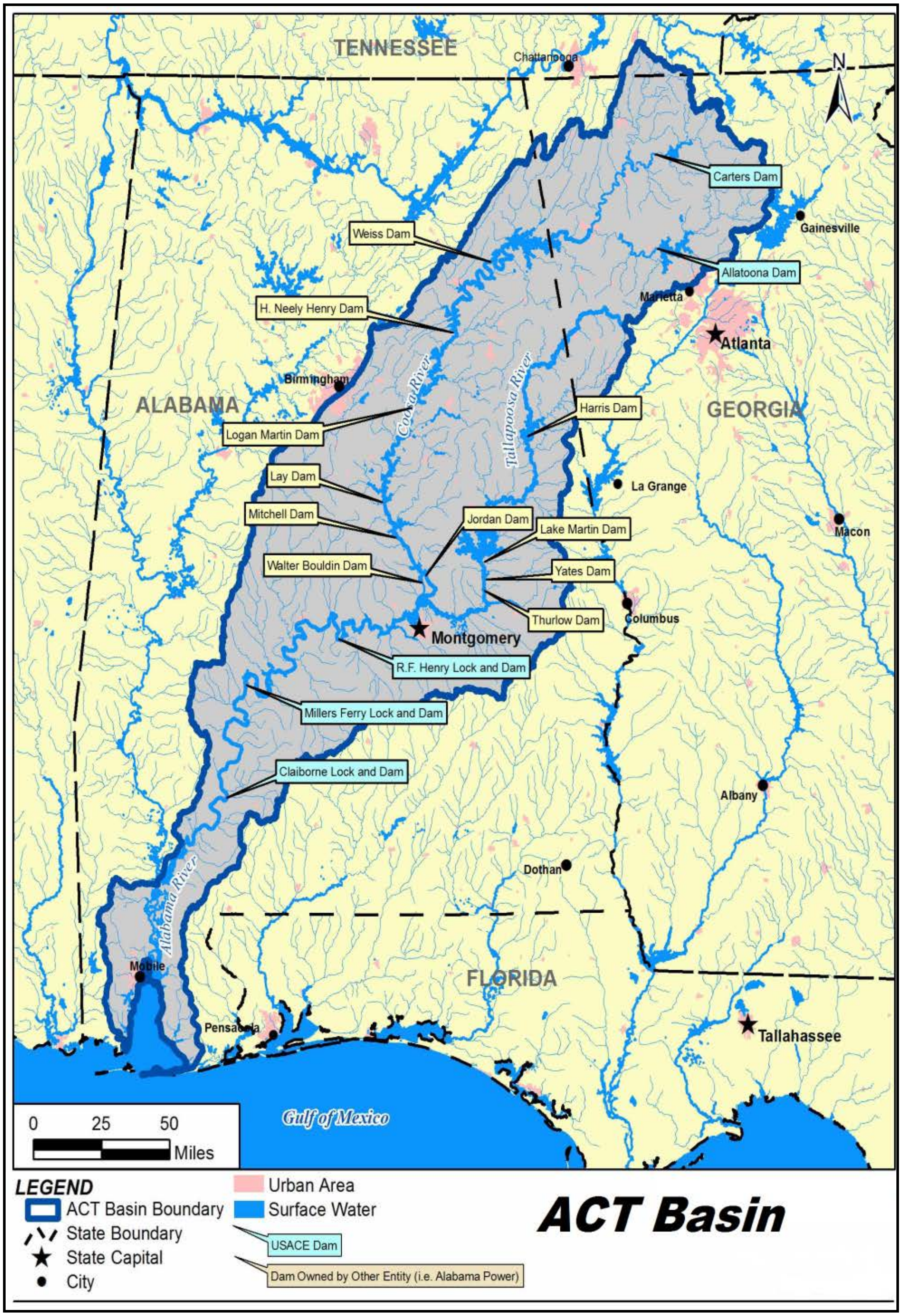


Figure 1. USACE and Alabama Power Company Projects
in the Alabama-Coosa-Tallapoosa Basin

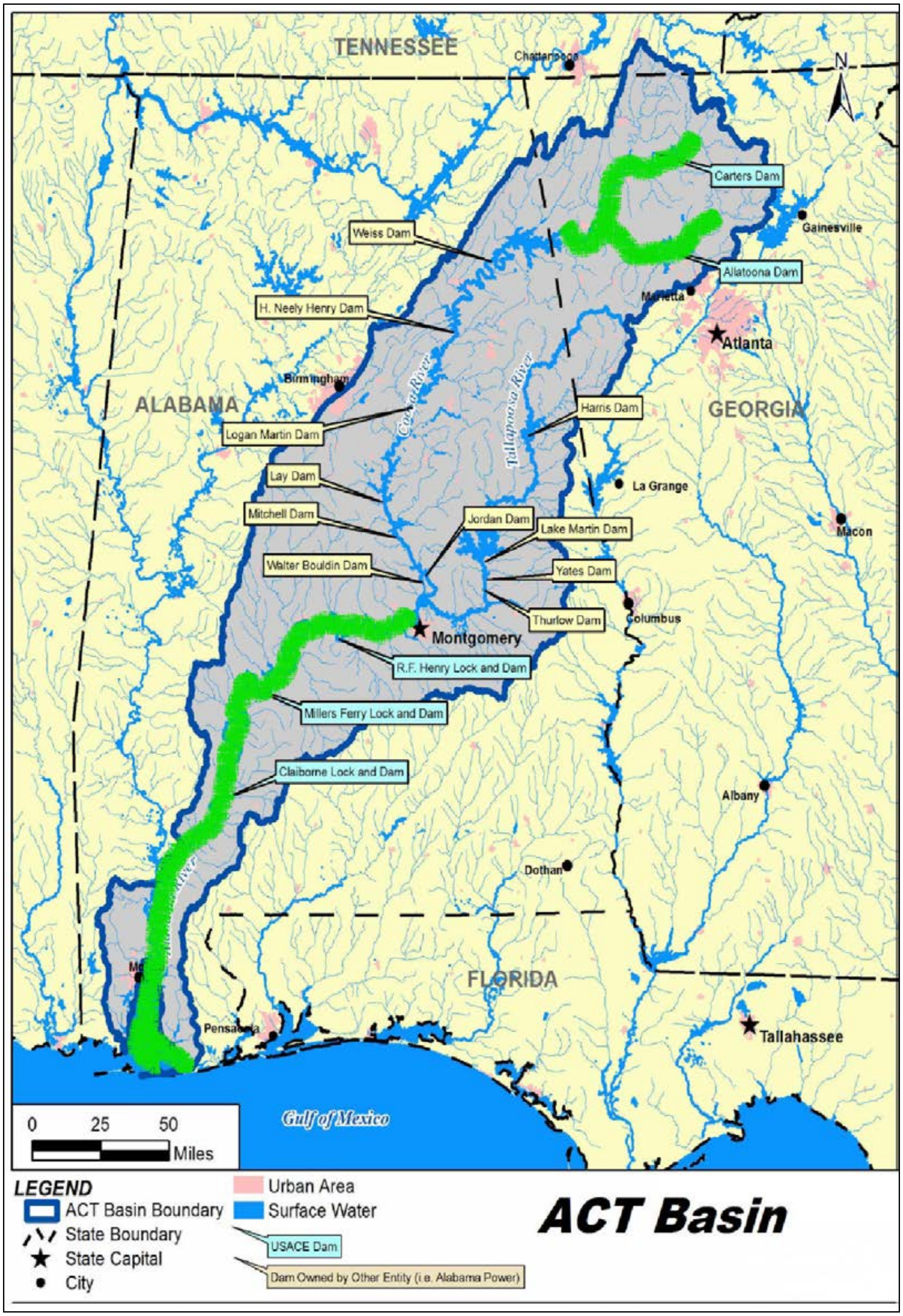


Figure 2. Limited Action Area Downstream of USACE Projects in the ACT Basin (green shading).

Birds

Wood stork (*Mycteria Americana),* is a wetland dependent bird species and loss of foraging wetlands is the primary threat. The species is only indirectly associated with riverine habitat.

Mammals

West Indian manatee (*Trichechus manatus),* is found in marine, estuarine and freshwater environments. The species is occasionally found in Mobile Bay and into the Mobile River. In 2012, a single individual was sighted near Claiborne Dam on the Alabama River. The species is intolerant of cold and does not overwinter in Alabama.

Reptiles and amphibians

Red hills salamander (*Phaeognathus hubrichti)* is found in Butler, Conecuh, Covington, Crenshaw, Monroe, and Wilcox Counties in Alabama, in the lower portions of the Alabama River basin. The species is found typically on steep sloped ravines and bluffs dominated by hardwoods with high soil moisture and full tree canopy. The lower ACT basin has bluffs and ravines associated with the species preferred riverine habitat which could be impacted by changes in river flows.

Alabama red-belly turtle (*Pseudemys alabamensis),* is found in Mobile and Baldwin Counties, Alabama in quiet backwaters of upper Mobile Bay in water generally one to two meters in depth. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Fish

Gulf sturgeon (*Acipenser oxyrinchus desotoi),* is listed in the lower Alabama River basin, in Baldwin, Clarke, Monroe, Washington and Mobile Counties, Alabama. The species is primarily marine/estuarine in winter; it migrates to upper rivers in spring for spawning; returns to sea/estuary in fall; some may remain near spawning areas. First two years are spent in riverine habitats. Spawns in fresh water (sometimes tidal) usually over bottom of hard clay, rubble, gravel, or shell. Critical habitat has been designated for the Gulf sturgeon but does not include the Mobile River and sub-basins, including the Alabama River. The Service has indicated that there is no recent documented spawning in those rivers, and for that reason critical habitat was not designated. It seems likely that because at least two of the Primary Constituent Elements (PCE's) associated with the designated critical habitat units are not met, spawning remains unlikely in the Mobile and Alabama Rivers. Those PCE's are river spawning sites, and a safe and unobstructed migratory pathway (an unobstructed river or dammed river that still allows for passage of the species). The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Blue shiner (*Cyprinella caerulea),* occurs in Tennessee, Alabama and Georgia counties in the Coosa River basin. The species is restricted to the Conasauga River and tributaries in Tennessee and Georgia, Coosawattee River and tributaries in Georgia upstream of Carters Dam, and Weogufka and Choccolocco creeks and lower Little River, tributaries of Coosa River in Alabama. Habitat includes cool, clear, small to medium-sized rivers over firm substrates (sand, gravel, or rubble) in pools, backwaters, and areas of moderate current. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Etowah darter (*Etheostoma etowahae),* is found in the Etowah mainstem and eight tributaries in Georgia. The species has been reported in the Etowah River downstream of Allatoona Dam. However, the species is known to co-occur with the closely related greenbreast darter in this reach and may in fact represent a distinct hybrid population segment. The results of genetic testing to confirm this theory are not available yet (Brett Albanese, Georgia Department of Natural Resources, personal communication, 2011). Counties include Bartow, Cherokee, Dawson, Lumpkin, Paulding and Pickens. Typically, the species is found in riffles of streams with moderate to strong current over gravel or cobble substrate. It is also found in medium size rivers with riffles and strong currents. It is intolerant of stream impoundments. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Cherokee darter (*Etheostoma. scotti),* occurs in several Georgia counties in the Coosawattee and Etowah River watersheds. Habitat includes pools and adjacent riffles of creeks and small rivers about 1-15 meters wide, with moderate gradient and predominantly rocky bottoms; usually in shallow water in sections of reduced current, typically in runs above and below riffles and at the ecotones of riffles and backwaters; associated with large gravel, cobble, and small boulder substrates; uncommonly or rarely over bedrock, fine gravel, or sand; most abundant in sections with relatively clear water and substrates mainly clear of silt. It is intolerant of impoundment. The species occurs mostly within tributaries to riverine habitat potentially affected by changes to flows or water quality.

Cahaba shiner (*Notropis cahabae),* is limited to the Cahaba River basin, a major tributary to the Alabama River. Habitat includes flowing pools, usually over sand or gravel, in the main channel of medium-sized rivers. It moves into lower reaches of small tributaries during flood events and is occasionally found at the heads of pools and in shallow gravel riffles. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Amber darter (*Percina antesella),* is found in several Georgia counties in the ACT basin and several counties in Tennessee upstream of Allatoona and Carters Reservoirs. The current range includes the Coosa River system, the mainstream Etowah River upstream of Allatoona Reservoir, tributaries upstream of the area influenced by Allatoona Reservoir, and the Coosawattee River downstream of Carters Reservoir. It occurs in flowing pools and deeper runs with clean substrates of sand and fine gravel with scattered. It has been found associated with vegetation in riffle areas in midsummer.

Usually it is in cool, clear water up to 60 cm deep, with moderate to swift current. Critical habitat has been designated on the Conasauga River from Polk County, Tennessee downstream approximately 33.5 miles to the Georgia State Highway 2 Bridge, Murray County, Georgia. The species occurs within riverine habitat potentially affected by changes to flows or water quality.
Goldline darter (*Percina aurolineata),* is found in several Alabama counties in the Cahaba River basin and in several Georgia counties in the Coosawattee River basin. Its habitat includes fast rocky runs of small to medium rivers, main channels in areas of white-water rapids to three or more feet deep, and substrates of bedrock, boulders, rubble and gravel. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Conasauga logperch (*Percina. jenkinsi),* is found in Murray County, Georgia and Bradley County Tennessee on the Conasauga River above Carters Reservoir. Critical habitat has been designated on the Conasauga River from Polk County, Tennessee downstream approximately 11miles to the Georgia State Highway 2 Bridge, Murray County, Georgia. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Alabama sturgeon (*Scaphirhynchus suttkusi),* is found in the Alabama River in Autauga, Baldwin, Bibb, Clarke, Dallas, Monroe, Perry and Wilcox Counties, Alabama. Habitat includes the main channels of major rivers in areas below the Fall Line; most specimens have been taken in moderate to swift current at depths of 6-14 meters, over sand and gravel or mud; a couple records are from oxbow lakes. This species apparently prefers relatively stable substrates of gravel and sand in river channels with swift currents. Spawning occurs probably in areas with current, perhaps on hard substrates that may occur in main channels or in deep-water habitats associated with channel-training structures in major rivers or possibly in tributaries.

Critical habitat has been designated by the Service in a Final Rule, 50 CFR Part 17 (Federal Register (FR)/Volume 74, Number 104, Pages 26488-26510). That rule designated as critical habitat 326 miles of river channel from the Alabama River confluence with the Tombigbee River upstream to the R.F. Henry Lock and Dam, and the Cahaba River from its confluence with the Alabama River upstream to U.S. Highway 82 in Bibb County, Alabama.

As stated in the Final Rule, the primary constituent elements (PCE) of critical habitat for the Alabama sturgeon are: (i) A flow regime (*i.e.,* the magnitude, frequency, duration, seasonality of discharge over time) necessary to maintain all life stages of the species in the riverine environment, including migration, breeding site selection, resting, larval development, and protection of cool water refuges (*i.e.,*tributaries); (ii) River channel with stable sand and gravel river bottoms, and bedrock walls, including associated mussel beds; (iii) Limestone outcrops and cut limestone banks, large gravel or cobble such as that found around channel training devices, and bedrock channel walls that provide riverine spawning sites with substrates suitable for embryo deposition and development; (iv) Long sections of free-flowing water to allow spawning migrations and development of embryos and larvae; (v) Water temperature not exceeding 32° Celsius (90° Fahrenheit); dissolved oxygen levels not less than 5 milligrams per liter (mg/L) (5 parts per million (ppm)), except under extreme conditions due to natural causes or downstream of existing hydroelectric impoundments, where it can range from 5 mg/L to 4 mg/L (5 ppm to 4 ppm); and pH within the range of 6.0 to 8.5.

The Service changed the first PCE from the originally proposed minimum flow at Montgomery, Alabama of 4,640 cubic feet per second (cfs) to the final wording to reflect that the species' flow needs are relative to the season of the year. The discussion in the FR indicated that flows greater than 4,640 cfs are likely needed in the spring to successfully spawn. On the other hand, it stated that while lower flows may involve adverse effects, depending on other factors, such low flows may not result in measureable adverse effects or constitute a threshold for adverse modification of Critical Habitat.

In the FR, the Service noted that during 2007 and 2008, the Alabama River Basin experienced the worst drought ever recorded. However, the discussion also noted that the 2007-2008 drought may have actually been normal in the context of the past 1000 years and that the 40-year period prior to the present may have been exceptionally wet. The Service stated their belief that the species is adapted to period low-flow conditions similar to the 2007-2008 drought, but that they do not believe that the sturgeon is adapted to survive extended drought periods where water quality is compromised by excessive discharges that the river is unable to assimilate.

As stated earlier, the proposed action would be expected to achieve flows of 4,640 cfs 96% of the time and overall, achieve flows similar to the current conditions (see Figures 6.1-42 and 6.1-43 of the DEIS). In October and November average daily flows would be slightly lower (up to 4%) than for the current operation. As shown in DEIS Table 6.1-4, the proposed action would result in Drought Level 3 operations 1.2% of the time based on the 1939-2008 modeled hydrologic conditions. The Drought Level 3 operation would come as a result of implementation of a basin wide drought plan as shown in DEIS Table 4.2-9. The drought plan was developed in coordination with the Service and has received its concurrence in previous communications.

APC projects on the Coosa and Tallapoosa Rivers ultimately determine the flows on the Alabama River at Montgomery and downstream to the USACE Claiborne project. This is due to APC control of all storage downstream of Allatoona and Carters Reservoirs (which together comprise only 17% of basin storage), down to the three USACE projects on the Alabama River. This results in the three lower USACE projects being almost entirely dependent on APC releases for inflows and because there they have no storage capacity must pass those inflows as they are received.

Actual flows on the Alabama River at Montgomery were cut by APC by 57% from the 4,640 cfs level during the 2007 drought to approximately 2,000 cfs. The drought plan developed by APC for its Coosa relicensing effort was developed in coordination with USACE for this manual update in order to provide a single basin-wide drought plan and under it the lowest permitted flows during Drought Level 3 operations would be about

2,000 cfs . The Service did not consider potential impacts to the sturgeon in its June 7, 2012 Biological Opinion (BO) issued for the APC Coosa River Project.

Because there would be almost no changes on river flows due to the proposed action, there would be no changes to river morphology including substrates, banks and channels. There would be no impacts on rock, cobble or gravel outcroppings. There would be no impact to feeding or spawning habitat. There would be no changes to long reaches of free-flowing water. As noted previously, there would be negligible changes in water quality on the Alabama River.

The Alabama sturgeon and its critical habitat occur within riverine habitat potentially affected by changes to flows or water quality. USACE believes that because flows as a result of the proposed action would be generally the same as the baseline condition, flows during extreme drought would be similar to those of 2007, that the proposed action would cause no changes in flows or water quality conditions that could impact those areas.

Mollusks

Several listed mussel and snail species occur in the ACT basin. All are benthic, aquatic organisms with specific substrate, flow and water quality requirements that would be potentially impacted by changes to river conditions. A summary of those requirements is provided for each species as shown. Locations where the species are indicated by the Service to potentially occur are indicated by the following codes: *uco=upper Coosa basin, lco=lower Coosa basin, al=Alabama River basin, t= Tallapoosa River basin.*

Finelined pocketbook (*Lampsilis altilis),* usually found in creeks, high gradient, low gradient, medium river, moderate gradient, riffles, sand and gravel substrates. *uco, lco, al*

Orange-nacre mucket (*Lampsilis perovalis),* in creeks medium river, moderate gradient, riffles, sand, gravel, cobble substrate in swift current. *al lco*

Alabama moccasinshell (*Medionidus acutissimus*), in big rivers, medium rivers, high, low gradient, sand or gravel substrate in clear water of moderate flow. *uco,lco, al*

Coosa moccasinshell (*Medionidus parvulus),* in creeks, small rivers high to medium gradient with riffles, sand and gravel substrate in clear streams. *uco lco, al*

Ovate clubshell (*Pleurobema perovatum*), in big rivers to medium rivers and creeks, moderate gradient, pools and riffles, sand gravel shoals. *lco, al, t*

Southern clubshell (*Pleurobema decisum),* in large rivers to small streams, with sand and gravel substrate on shoals or in center of river. *al uco, lco, t*

Southern pigtoe (*Pleurobema georgianum),* in big rivers, medium rivers, streams, shoals with stable gravel and sandy-gravel substrates. *uco, lco*

Triangular kidneyshell (*Ptychobranchus greenii),* in big rivers to medium rivers and creeks, moderate gradient, pools and riffles, substrate of firm coarse gravel and sand. *uco, lco*

Southern acornshell (*Epioblasma othcaloogensis),* in creeks medium river, moderate gradient, riffles on coarse particle substrates. *uco, lco, al*

Upland combshell (*Epioblasma metastriata),* in creeks, medium rivers of moderate gradient and swift currents on stable substrates. *uco, al*

Critical habitat has been designated (50 CFR, Part 17, Federal Register Volume 69, Number 126, Pages 40084-40171) for the ten species described above within the Mobile River basin. Some of the critical habitat units are designated in the Tombigbee River basin and are therefore not affected by the proposed action in the ACT. Other units are within the ACT. Unit 14 is designated on the Alabama River, in Alabama from the confluence with the Cahaba River upstream to the confluence with Big Swamp Creek for the Southern clubshell and the Orange-nacre mucket. Unit 15 is designated in Alabama on Bogue Chitto Creek from the confluence with the Alabama River upstream to U.S. Highway 80 for the Southern Clubshell, Alabama moccasinshell, and the Orange-nacre mucket. Unit 16 is designated on the Tallapoosa River from U.S. Highway 431 in Alabama upstream to McClendon Creek in Georgia and includes Cane Creek in Alabama and Mud and McClendon Creeks in Georgia for the Fine-lined pocketbook. Unit 17 is designated on the Uphapee Creek in Alabama from U.S. Highway 199 upstream through Choctafaula, Chewacla and Opintlocco Creeks for the Ovate clubshell, Southern clubshell and Fine-lined pocketbook. Unit 18 is designated on the Coosa River mainstem from the power line crossing southeast of Maple Grove, Alabama upstream to Weiss Dam, Terrapin Creek and South Fork Terrapin Creek for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland Combshell, Triangular Kidneyshell, Coosa moccasinshell, Southern pigtoe, and fine-lined pocketbook. Unit 19 is designated in Alabama on Hatchet Creek for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland combshell, Triangular kidneyshell, Coosa moccasinshell, Southern pigtoe, and fine-lined pocketbook. Unit 20 is designated in Alabama on Shoal Creek for the Triangular kidneyshell, Coosa moccasinshell, Southern pigtoe, and fine-lined pocketbook. Unit 21is designated on Kelly Creek from the confluence with the Coosa River upstream to the confluence of Shoal Creek and Shoal Creek from the confluence with Kelly Creek upstream to the St. Clair/Shelby County, Alabama line for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland combshell, Triangular kidneyshell, Coosa moccasinshell, Southern pigtoe, and Fine-lined pocketbook. Unit 22 in Alabama includes Cheaha Creek from the confluence with Choccolocco Creek upstream to Chinnabee Lake dam for the Triangular kidneyshell, Coosa moccasinshell, Southern pigtoe, and Fine-lined pocketbook. Unit 23 in Alabama includes Yellowleaf Creek and Muddy Prong Creek for the Triangular kidneyshell, Coosa moccasinshell, Southern pigtoe, and fine-lined pocketbook. Unit 24 in Alabama includes Big Canoe Creek for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland Combshell, Triangular Kidneyshell, Coosa Moccasinshell, Southern pigtoe, and Fine-lined pocketbook. Unit 25 in Georgia includes the Oostanaula River mainstem from its confluence with the Etowah River upstream to the confluence of the Conasauga and Coosawattee River, the Coosawattee River mainstem from its confluence with the Conasauga River upstream to Georgia State Highway 136, the Conasauga River mainstem from the confluence with the Coosawattee River upstream to Murray County Road 2, and Holly Creek for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland combshell, Triangular kidneyshell, Alabama moccasinshell, Coosa moccasinshell, Southern pigtoe, and Fine-lined pocketbook. Unit 26 includes the Coosa River mainstem from Alabama State Highway 111 upstream to Jordan Dam for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland combshell, Triangular kidneyshell, Alabama moccasinshell, Coosa moccasinshell, Southern pigtoe, and Fine-lined pocketbook.

The primary constituent elements include: (i) Geomorphically stable stream and river channels and banks; (ii) A flow regime (*i.e.*, the magnitude, frequency, duration, and seasonality of discharge over time) necessary for normal behavior, growth, and survival of all life stages of mussels and their fish hosts in the river environment; (iii) Water quality, including temperature, pH, hardness, turbidity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; (iv) Sand, gravel, and/or cobble substrates with low to moderate amounts of fine sediment, low amounts of attached filamentous algae, and other physical and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; (v) Fish hosts, with adequate living, foraging, and spawning areas for them; And (vi) Few or no competitive nonnative species present.

Alabama pearlshell (*Margaritifera marrianae),* in headwater streams slow to moderate velocity with substrates of sand, mud or gravel. *al*

Critical habitat has been designated for the Alabama pearlshell (50 CFR, Part 17, FR, Volume 77, Number 196, Pages 61664-61719). Within the ACT, critical habitat is limited to one habitat unit. Unit AP1 has been designated on the mainstem of Big Flat Creek from State Route 41 upstream 35 miles, Flat Creek and Dailey Creek upstream from their confluence with Big Flat Creek in Alabama.

Primary constituent elements include: (i) Geomorphically stable stream and river channels and banks (channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation). (ii) Stable substrates of sand or mixtures of sand with clay or gravel with low to moderate amounts of fine sediment and attached filamentous algae. (iii) A hydrologic flow regime (magnitude, frequency, duration, and seasonality of discharge over time) necessary to maintain benthic habitats where the species are found, and to maintain connectivity of rivers with the floodplain, allowing the exchange of nutrients and sediment for habitat maintenance, food availability, and spawning habitat for native fishes. (iv) Water quality, including temperature (not greater than 32 °C), pH (between 6.0 to 8.5), oxygen content (not less than 5.0 milligrams per liter), hardness, turbidity, and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages. (v)

The presence of fish hosts. Diverse assemblages of native fish species will serve as a potential indication of host fish presence until appropriate host fishes can be identified.

Southern combshell (*Epioblasma penita),* in high gradient, medium river, riffles, sandy gravel to gravel-cobble substrate. *al*

Heavy pigtoe (*Pleurobema taitianum),* in big rivers to medium rivers and creeks, moderate gradient, pools and riffles, substrate in Alabama River is composed of gravel with large component of coarse sand. *al*

Alabama heelsplitter (*Potomilus inflatus),* big rivers to medium rivers, moderate gradient, pools, riffles. Substrate includes soft stable bars of sand mud, silt and sandy-gravel. *al*

Georgia pigtoe (*P. hanleyianum),* in medium rivers, high gradient, medium gradient, riffles with sand-gravel-cobble bottom. *uco lco t*

Critical habitat has been designated for the Georgia pigtoe and two snail species described below, the Interrupted rocksnail and the Rough hornsnail (50 CFR Part 17, FR Volume 75, Number 211, Pages 67512-67550).

For the Georgia pigtoe, Habitat Unit 1 includes the channel of the Conasauga River from the confluence of Minnewaga Creek, Polk County, Tennessee, downstream to U.S. Highway 76. Unit 2 includes the channel of Terrapin Creek from Alabama Highway 9 downstream to the confluence with the Coosa River and the Coosa River from Weiss dam downstream one mile below the confluence with Terrapin Creek, in Alabama. Unit 3 includes the channel of Hatchet Creek from Clay County Road 4, Clay County Alabama downstream to the Confluence with Swamp Creek.

Primary constituent elements include: (i) Geomorphically stable stream and river channels and banks (channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation). (ii) A hydrologic flow regime (the magnitude, frequency, duration, and seasonality of discharge over time) necessary to maintain benthic habitats where the species is found. Unless other information becomes available, existing conditions at locations where the species occurs will be considered as minimal flow requirements for survival. (iii) Water quality (including temperature, pH, hardness, turbidity, oxygen content, and chemical constituents) that meets or exceeds the current aquatic life criteria established under the Clean Water Act (33 U.S.C. 1251–1387). (iv) Sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae. (v) The presence of fish host(s) for the Georgia pigtoe (species currently unknown). Diverse assemblages of native fish will serve as a potential indication of presence of host fish.

Interrupted rocksnail (*Leptoxis foremani),* in shoals, riffles and reefs of small to large rivers. Attached to bedrock, boulders, cobble and gravel. *uco, lco*

For the Interrupted rocksnail, Habitat Unit 1 includes the Coosa River from Weiss Dam downstream to one mile below the confluence with Terrapin Creek, Alabama . Unit 2 includes the channel of the Oostanaula River from the confluence of the Conasauga and Coosawattee Rivers, downstream to Georgia Highway 1 Loop, in Georgia. Unit 3 includes the Coosa River fro Jordan Dam downstream to Alabama Highway 111 in Alabama.

Primary constituent elements include: (i) Geomorphically stable stream and river channels and banks (channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation). (ii) A hydrologic flow regime (the magnitude, frequency, duration, and seasonality of discharge over time) necessary to maintain benthic habitats where the species is found. Unless other information becomes available, existing conditions at locations where the species occurs will be considered as minimal flow requirements for survival. (iii) Water quality (including temperature, pH, hardness, turbidity, oxygen content, and chemical constituents) that meets or exceeds the current aquatic life criteria established under the Clean Water Act (33 U.S.C. 1251–1387). (iv) Sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae.

Rough hornsnail (*Pleurocera foremani),* in creeks and medium rivers of moderate gradient, on gravel, cobble, bedrock and mud. Tolerant of silt deposition. *lco*

For the Rough hornsnail, Habitat Unit 1 includes the Coosa River from Jordan Dam downstream to the confluence with the Tallapoosa River, in Alabama. Unit 2 includes Yellowleaf Creek from the confluence of Morgan Creek downstream to one mile below Alabama Highway 25 in Alabama.

Primary constituent elements include: (i) Geomorphically stable stream and river channels and banks (channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation). (ii) A hydrologic flow regime (the magnitude, frequency, duration, and seasonality of discharge over time) necessary to maintain benthic habitats where the species is found. Unless other information becomes available, existing conditions at locations where the species occurs will be considered as minimal flow requirements for survival. (iii) Water quality (including temperature, pH, hardness, turbidity, oxygen content, and chemical constituents) that meets or exceeds the current aquatic life criteria established under the Clean Water Act (33 U.S.C. 1251–1387). (iv) Sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae.

Lacy elimia (*Elimia crenatella),* snail on the mainstem of the Coosa River found on rock shoals and gravel bars, under rock slabs in small streams with a moderate current and sand, gravel, cobble substrates. *lco*

Round rocksnail (*Leptoxis ampla),* in creeks high gradient, medium rivers in riffles and shoals over gravel cobble or rocky substrate in strong currents. *lco*

Painted rocksnail (*Leptoxis taeniata),* in medium rivers, high gradient to moderate gradient, riffles. Shoals and riffles of rivers on substrates of cobble and gravel. More tolerant of siltation than other snails. *lco, al*

Flat pebblesnail (*Lepyrium showalteri),* in clean smooth stones in rapid current of small to large high gradient river shoals. *lco al*

Cylindrical lioplax snail (*Lioplax cyclostomaformis),* found in isolated mud deposits under large rocks and boulders in rapid currents of streams and river shoals. *lco, al*

Tulotoma snail (*Tulotoma magnifica),* in large rivers to creeks, low-moderate gradient, riffles. Riffles and shoals on the undersides of large rocks. *lco al*

Plants

Georgia rockcress (*Arabis Georgiana),* is found in found in several counties throughout the ACT basin on dry, shallow soils on rocky bluffs and sandy loam soils on eroding river banks. There would be no erosion or disturbance to river banks as a result of the proposed action.

Critical Habitat for the Georgia rockcress has been proposed (50 CFR Part 17, No. 177, Pages 56506-56540. Eighteen critical habitat units are proposed and occur in scattered locations through the ACT and ACF River basins in Alabama and Georgia. Primary constituent elements include (i) Large river bluffs with steep and/or shallow soils that are subject to localized disturbances that limit the accumulation of leaf litter and competition within the Lower Gulf Coastal Plain, Upper Gulf Coastal Plain, Red Hills, Black Belt, Piedmont, and Ridge and Valley Physiographic Provinces of Georgia and Alabama. (ii) Well-drained soils that are buffered or circumneutral generally within regions underlain or otherwise influenced by granite, sandstone, or limestone. (iii) A mature, mixed-level canopy with spatial heterogeneity, providing mottled shade and often including species such as eastern red cedar, America hophornbeam, chinquapin oak, white ash, southern sugar maple, and redbud with a rich diversity of grasses and forbs characterizing the herb layer. (iv) Intact habitat with mature canopy and discrete disturbances, buffered by surrounding habitat to impede the invasion of competitors.

Harperella (*Ptilimnium nodosum),* is found in Cherokee, DeKalb, and Marshall Counties, Alabama and several counties in Georgia outside the ACT basin. Occurs in three habitat types: rocky/gravelly shoals or cracks in bedrock outcrops beneath the water surface in clear, swift-flowing streams (usually in microsites that are sheltered from rapidly moving water); edges of intermittent pineland ponds or low, wet savannah meadows on the Coastal Plain; and granite outcrop seeps. In all habitat-types, the species occurs in a narrow range of water depths; it is intolerant of deep water and of conditions that are too dry. However, the plants readily tolerate periodic, moderate flooding. It is listed as occurring in the upper Coosa River.

Kral's water-plantain (*Sagittaria secundifolia),* is found in several counties in the Coosa River basin including Cherokee, Clay, Coosa, DeKalb, Lawrence, and Winston, Alabama, and Chatooga, Georgia. Preferred habitat is undammed riverine reaches on exposed shoals or rooted among loose boulders in sands, gravels, and silts in pools up to 1 m deep. Stream bottoms are typically narrow and bounded by steep slopes.

Green pitcher-plant (*Sarracenia oreophila*) is found in several ACT counties including Calhoun, Cherokee, DeKalb, Etowah, Jackson, Marshall, and St. Clair, Alabama and Gilmer, Towns, and Union, Georgia. Habitat is composed of sandstone streambanks, mixed oak or pine flatwoods and seepage bogs. All habitats are generally moist, but the species does not occur in areas where flooding is regular and soils are continually saturated. In bogs the species grows away from continually flooded areas about two feet above summer water levels.

Alabama canebrake pitcher plant (*Sarracenia rubra alabamensis),* is found in Autauga, Chilton and Elmore Counties in the lower Coosa and upper Alabama River watersheds. Preferred habitat includes sandhill seeps, swamps, and sloping bogs along the Fall Line Hills that divide the upper Coastal Plain and Piedmont physiographic regions. Soils are deep peaty sands or clays. The plants grow best exposed to full or nearly full sun. Historically, fire played an important role in maintaining the open character of these habitats.

Tennessee yellow-eyed grass (*Xyris tennesseensis*), occurs in several counties in Alabama and Georgia, including those in the Coosawattee, Etowah, and Coosa River basins. The species is found in open or thin canopy woods in gravelly seep-slopes or gravelly bars and banks of small streams, springs and ditches.

6. ENVIRONMENTAL BASELINE

As described in the Section 7 Consultation Handbook, the environmental baseline is a "snapshot" of a species' health at a specified point in time. It does not include the effects of the proposed action, but rather provides an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat (including designated critical habitat), and ecosystem, within the action area. The baseline includes anticipated effects of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process (cite handbook). The action under review is the USACE Update of the Water Control Manual for the ACT River Basin in Georgia and Alabama. In the case of an ongoing water project, such as the USACE projects in the ACT, the total effects of all past activities, including the effects of construction and past operation, current non-federal activities, and federal projects with completed section 7 consultations, form the environmental baseline. Based on the description given above, the environmental baseline also includes effects of the currently approved dredging operations and other navigation maintenance activities. The environmental baseline considers the effects of operating the basin-wide system of dams and reservoirs, regardless of owner, since completion of the last project in the ACT basin. There are a total of 18 dams on the mainstems of the Alabama, Coosa, and Tallapoosa Rivers, including those shown in Figure 1 plus the Carters Re-regulation Dam and the Thomson Weinman Dam. The Thomson Weinman Dam is a low head dam located approximately 10 miles downstream of Allatoona Dam which was previously used as a hydropower facility by the City of Cartersville and is now abandoned. The last project complete was Harris Dam owned by APC, located on the Tallapoosa River and was completed in 1983. The Affected Environment Section (Section 2) of the DEIS provides a detailed description of the actions influencing the condition of the environmental Baseline and that information is incorporated by reference. The affected environment, as described in the DEIS, for the proposed action includes the Alabama, Coosa and Tallapoosa Rivers and all areas in the basin from the headwaters downstream to the mouth of the Alabama River at its confluence with the Tombigbee River where it forms the Mobile River, and downstream to include the Mobile Bay.

7. EFFECTS ANALYSIS

This section is an analysis of the effects of the proposed action on the species and critical habitat. The previous "Environmental Baseline" section considers the effects of the past and current operations. This section addresses the future direct and indirect effects of implementing the proposed action.

7.1. FACTORS CONSIDERED

For the purposes of this BA we consider three principal components of the species' environment in the action area: channel morphology, flow regime, and water quality. Physical habitat conditions for the listed species in the action area are largely determined by flow regime, and channel morphology sets the context for the flow regime. Although channel morphology has changed relative to the pre-dam period in the river sections below the USACE projects, it is likely that the rate of change has slowed and it appears to have entered a somewhat dynamic equilibrium condition based on the maintenance needs of the navigation channel portions of the action area. We have no ability at this time to predict specific effects on channel morphology due to the influence of the proposed action on the flow regime. The proposed action relates to water management at federal projects in the ACT basin and includes limits on the extent to which the USACE alters basin inflow into the downstream river segments via operations of the ACT dams and reservoirs; therefore, the primary focus of this analysis is the flow regime of the rivers with and without the proposed action. Our analysis of flow regime and water quality alteration relative to the listed species and critical habitats considers the following factors based on the 1998 Consultation Handbook (USFWS 1998).

Proximity of the action: The proposed action may affect habitat occupied by all life stages of the listed species described above in the rivers below USACE projects. Portions of these rivers are also designated as critical habitat. The proposed action includes releases from USACE dams and may affect some of the species' life history stages and habitat features from as close as immediately below the dam to many miles downstream.

Distribution: The proposed action could alter flows in the rivers downstream of the USACE dams and alter freshwater inflow to Mobile Bay. The distribution of the various species considered is described in the Status of the Species section above. This analysis examines how the proposed action may variously affect different portions of the action area according to the distribution of the species and important habitat features in the action area.

Timing: The proposed action could alter flows in the rivers downstream of the USACE dams and alter freshwater inflow to Mobile Bay at all times of the year. It will reduce flows when increasing conservation storage in the ACT reservoirs and increase flows when decreasing conservation storage. Therefore, we examine how the proposed action may alter the seasonal timing of biologically relevant flow regime features in our analysis.

Nature of the effect: The proposed action will reduce flows when increasing conservation storage in the ACT reservoirs and increase flows when decreasing conservation storage. Flow regime and water quality may be affected by the actions. Therefore, we examine how the proposed action may affect the listed species and critical habitat elements through flow regime and water quality analyses focused on key locations in the basin.

Duration: This proposed action is a modification to the current operations at the USACE projects in the ACT River Basin and the operations described under the proposed action are applicable until revised or until another updated Water Control Plan is adopted. Although the duration of the proposed action is indefinite, the nature of its effects is such that none are permanent. The USACE can alter its reservoir operations at any time; therefore, flow alterations that may result from the proposed action will not result in permanent impacts to the habitat of any of the listed species. Therefore, we examine how implementation of the proposed action may alter the duration of high flows and low flows that are relevant to the listed species and critical habitats.

Disturbance frequency: The proposed action is applicable year round; therefore, changes to the flow regime and water quality parameters may occur at any time and/or continuously until such time as the proposed action is revised or until another updated Water Control Plan is adopted. Therefore, we examine how implementation of the proposed action may alter the frequency of high flows and low flows that are relevant to the listed species and critical habitats.

Disturbance intensity and severity: The proposed action may variously affect the flow regime depending on time of year, basin inflow, and conservation storage levels. Therefore, we examine how the proposed action affects the magnitude of high and low flow events relative to the baseline. However, for the species considered, the most relevant adverse effects are likely those that occur during low flow conditions due to exposure of aquatic habitat and organisms, desiccation of individuals, spawning areas and food sources, increased access by predators and associated changes in water quality.

7.2. ANALYSIS FOR EFFECTS OF THE ACTION

The Effects Analysis for the proposed action uses the HEC-ResSim Model to simulate flow operations in the ACT Basin. The DEIS impact analysis included HEC-5Q model simulations to evaluate the impacts of proposed alternative water management plans on long-term, system-wide, stream and reservoir water quality. This information is also used in the Effects Analysis to assess potential water quality changes resulting from the proposed action. Details about the ResSim model and 5Q model are provided below in the MODEL DESCRIPTION section.

We determine the future effect of project operations, as prescribed by the proposed action, by comparing the environmental conditions expected to occur under the proposed action to the environmental baseline. The flow regime of the environmental baseline is described using post-1983 flow records, because this period represents the complete hydrology of the current configuration of the ACT federal and non-federal reservoir projects that influence the river flows in the action area. The proposed action simulations were simulated utilizing the maximum contracted amounts for municipal and industrial (M&I) withdrawals from USACE reservoirs for all years and the maximum observed M&I and Agricultural demands (2006) for all other locations throughout the simulated period. Since consumptive demands in locations other than federal reservoirs are not controlled by the USACE and vary over time, we impose the highest observed consumptive demands as a conservative estimate of potential M&I demands. This conservative estimate represents a greater demand in most years than was actually observed.

As described above, the principal factor examined in determining effects for the proposed action is the flow regime in the rivers below USACE projects and how the flow regime affects habitat conditions for the listed species. Differences between the Baseline (observed flows) and proposed action simulated flow regimes are generally attributable to the USACE discretionary operations. However, it should be noted that some of the differences are also attributable to the conservative demand set utilized in the proposed action simulations. In many years this represents a higher consumptive demand than actually occurred in the observed Baseline flow regime. The observed Baseline flow regime also includes incremental changes in operation that have occurred at both federal and non-federal reservoirs over time due to maintenance at hydropower facilities, operations for public health and safety, and other discretionary operations. Except in very general terms, it is not possible to describe a single set of reservoir operations that apply to the entire post-1983 period. Although these operational anomalies are typically small in duration and magnitude, they can influence the analysis. Therefore, if the proposed action does not significantly differ from the Baseline, its effect on the species/habitat is considered to be a continuation of the Baseline effect, if any.

7.3. MODEL DESCRIPTION

HEC-ResSim

The HEC-ResSim model was used to simulate reservoir operations in the ACT Basin. HEC-ResSim is a state-of-the-art tool for simulating flow operations in managed systems. It was developed by the USACE Hydrologic Engineering Center (HEC) to aid engineers and planners performing water resources studies in predicting the behavior of reservoirs and to help reservoir operators plan releases in real time during day-to-day and emergency operations. This effects analysis used HEC-ResSim Version 3.2DEV "Build 3.2.1.15R" (USACE, 2014). The label "DEV" means that the software is undergoing final testing before distribution as an official version.

HEC-ResSim has a graphical user interface designed to follow Windows® software development standards. The model's interface can be learned without extensive tutorials. Familiar data entry features make model development easy, and localized mini plots graph the data entered in most tables so that errors can be seen and corrected quickly. A variety of default plots and reports, along with tools to create customized plots and reports, facilitate output analysis.

HEC-ResSim provides a realistic view of the physical river/reservoir system using a map-based schematic. The program's user interface allows the user to draw the network schematic as a stick figure or as an overlay on one or more geo-referenced maps of the watershed. HEC-ResSim represents a system of reservoirs as a network composed of four types of physical elements: junctions, routing reaches, diversions, and reservoirs. By combining those elements, the HEC-ResSim modeler is able to build a network capable of representing anything from a single reservoir on a single stream to a highly developed and interconnected system like that of the ACT Basin. A reservoir is the most complex element of the reservoir network and is composed of a pool and a dam. HEC-ResSim assumes that the pool is level (i.e., it has no routing behavior), and its hydraulic behavior is completely defined by an elevation-storage-area table. The real complexity of HEC-ResSim's reservoir network begins with the dam.

Most federal reservoirs are authorized by Congress to operate for one or more of the following purposes: flood risk management, power generation, navigation, water supply, recreation, and environmental quality. Those purposes typically define the goals and constraints that describe the reservoir's release objectives. Other factors that might influence the objectives include time of year, hydrologic conditions, water temperature, current pool elevation (or zone), and simultaneous operations by other reservoirs in a system. HEC-ResSim uses an original rule-based description of the operational goals and constraints that reservoir operators must consider when making release decisions.

To provide a potential range of flows that might be experienced while the proposed action scenario is in effect, the ResSim model simulates river flow and reservoir levels using a daily time series of unimpaired flow data as input for a certain period of record. Whereas basin inflow is computed to remove the effects of reservoir operations from observed flow, unimpaired flow is developed to remove the effects of both reservoir operations and consumptive demands from observed flow. The ResSim model imposes reservoir operations and consumptive demands onto the unimpaired flow time series to simulate flows and levels under those operations and demands. The unimpaired flow data set is the product of the Tri-State Comprehensive Study, in which the States of Alabama, Florida, and Georgia, participated.

The current unimpaired flow data set for the ACT represents the years 1939 through 2011. The USACE has not yet computed unimpaired flow for 2012-current day. Unimpaired flow computations require actual water use data from the two States and 2011 is the most recent year of this data provided to the USACE. For purposes of evaluating the proposed action, a 73-year unimpaired flow hydrologic period of record (1939 through 2011) was used to run the simulations. However, for the purposes of this effects analysis, we focus on the data from 1983 through 2011, because this period represents the complete hydrology of the current physical configuration of the ACT federal and private reservoir projects with an unimpaired flow computation.

HEC-5Q

An HEC-5Q model was developed for the Alabama-Coosa-Tallapoosa (ACT) Basin, in support of the Environmental Impact Statement (EIS) for the Water Control Manual Update Study. The purpose of the HEC-5Q model was to evaluate the impacts of proposed alternative water management plans on long-term, system-wide, stream and reservoir water quality. HEC-5Q was selected as a logical choice for the water quality model because it is compatible with HEC-ResSim and has been used for previous analyses of the ACT. HEC-5Q was aligned to work seamlessly with the HEC-ResSim model used to evaluate the water management alternatives.

The HEC-5Q modeling software used for the 1999 EIS was updated to implement a 6-hour time step to capture diurnal variations, which are often important. Then the 1999 HEC-5Q model of the ACT was extended to simulate the reservoirs as well as the rivers. The ACT HEC-5Q model was then adjusted to approximate the 2000 – 2008 observed data, followed by verification with additional observations at key locations. The revised HEC-5Q model was used to make preliminary observations using present-day water quality loading parameters applied to water levels and flows for four proposed water management alternatives. This work was performed in close coordination with water quality and water management technical staff members from Mobile District, Tetra Tech, the Hydrologic Engineering Center (HEC), and Resource Management Associates (RMA).

The water quality model was created to serve as a defensible screening tool to make relative comparisons of the impacts among various water management alternatives. The central focus of this effort was to enable the EIS team to evaluate the differences in water quality between alternatives over a growing season. The water quality model was evaluated for the 2000 – 2008 period to best capture the effects of recent population, water usage, and land use on pollution levels. The evaluation also ensured that the model exhibited the tendencies seen in the observed data and that it was sufficient to provide reasonable longterm estimates of water quality through the ACT system. The 2000 – 2008 period includes hydrologic conditions that were representative of "normal" instream flows, as well as years with high flow or drought conditions. Point (wastewater) and non-point (tributary streams) inflow quality was developed from database information compiled during this analysis.

HEC-5Q follows well-known solutions for key water quality values and does not attempt to simulate the concentration changes or transport of every type of constituent. Its one-dimensional nature limits the amount of input data and detail of results at sites. Although these limitations restrict the depth of analysis possible from its results, they also relieve heavy burdens regarding prohibitively long computation time and large input data requirements. The simplified inputs and calculation, and connection to HEC-ResSim, make possible relative comparisons of the water quality impacts of water management alternatives broadly across the basin. This comparison can also be used to evaluate effects to listed species in the action area. A detailed description of the HEC-5Q model is provided in Appendix D of the DEIS.

7.4. MODEL SIMULATIONS

<u>HEC-ResSim</u>

For purposes of evaluating alternative operational plans for the ACT water control plan update, a 73-year hydrologic period of record (1939 through 2011) was run using the HEC-ResSim hydrologic simulation software. The results of this simulation are presented in the DEIS. However, for the purposes of this Biological Assessment, we focused on the data from 1983-2011. To ensure comparisons that are most likely to reveal anthropogenic differences between the sets of environmental conditions (Proposed Action and Baseline) and not hydrologic differences between years, we use the output from the ResSim models for the period that is also represented in the baseline, which is 1983 through 2011 (29 years). Using only the latter 29 years of the ResSim results removes 44 years of model results from our analysis. However, the later 29 years of the simulated period appear to represent the most "critical" period for the model, as this is when reservoir levels and flows reach their lowest levels in the simulation. Further, the basin experienced below normal precipitation and basin inflow levels from 2006 through much of 2008 and record low conservation storage levels were recorded per calendar date in 2007 and 2008. A limitation of comparing modeled flows to observed flows is that the model uses a set of "rules" that result in some of the predicted outputs and they do not reflect the actual variation and special circumstances that may affect the observed data. For example, the model uses an assumed minimum flow at the Allatoona project of exactly 240 cfs while the observed normal fluctuation may be several percent higher or an emergency situation may require temporary suspension of releases.

HEC-5Q

HEC-5Q was used to simulate water quality in the ACT basin under the current reservoir operation and three alternative reservoir operation scenarios for the 2000 – 2008 period. The results are available in the DEIS and consist of time series, cumulative occurrence profiles, and longitudinal river profiles of occurrence of each water quality parameter (Water temperature, Dissolved Oxygen (D.O.), 5-Day Uninhibited BOD (BOD5U), Nitrate-Nitrogen (NO3-N), Ammonia-Nitrogen (NH3-N), Phosphate-Phosphorous (PO4-P), Municipal and Industrial Wastewater as Percent of Flow, Phytoplankton (Algae) reported as Chlorophyll a).

In the flow regime effects analysis, the simulated flows are compared to the observed flows during the 1983 through 2011 period. Observed water quality data for these various parameters is not consistently available for the locations analyzed in the effects section below. Therefore, we are using the current reservoir operation (No Action) simulation as a surrogate for the observed baseline. Although the HEC-ResSim model has been updated to simulate through 2011, the updated HEC-5Q water quality results for this same period are not yet available. The DEIS presents the water quality simulation results for the 2000-2008 period. We utilize these results to analyze the effects, if any, to listed species based on changes to water quality due to implementation of the proposed action.

7.5. GENERAL EFFECTS ON THE FLOW REGIME

The proposed action will not change the general nature of water management at USACE projects, i.e. it will continue to reduce flows when attempting to increase conservation storage (Spring) and increase flows when decreasing conservation storage (Fall). In addition to the discussion of effects of the proposed action on hydrology as presented in the DEIS, the effects of the proposed action on the flow regime is also evaluated by comparing the environmental conditions expected to occur under the proposed action to the environmental baseline.

Flow statistics were evaluated at four locations in the ACT. These include the Allatoona Dam tailwater, the Carters Re-Regulation Dam tailwater, the Alabama River at Montgomery, Alabama, and the Claiborne Dam tailwater. The first two were chosen because they represent the points where flows are most directly impacted by the USACE releases. Montgomery was chosen because it represents the point where the cumulative impact of upstream USACE releases and APC releases combine to provide water to the three run-of-river USACE projects downstream. As run-of-river projects, their releases are controlled by upstream releases. Claiborne was chosen because of its position as the most downstream point of water regulation in the ACT by USACE. This analysis is provided in Appendix A in Figures 1-52 and a discussion of the results is provided below.

This comparison of flows is related to each of the FACTORS CONSIDERED in section 7.2 above.

Proximity of the Action and Distribution. The USACE proposed action has the potential to most directly impact those species that are closest to the two upstream projects. This is because the proposed water management plan involves discretionary decisions primarily at the Allatoona and Carters projects and few if any water management decisions at the downstream run-of-river projects. The effects of releases from the upstream reservoirs become ameliorated due to the influence of other tributaries and the water management decisions made at the APC projects. As seen at the Montgomery and Claiborne locations (see discussion for those locations below) there are no significant differences between the baseline and proposed action flows. Although reservoir management decisions can affect river conditions many miles downstream of a reservoir, the effects to species would be expected to be reduced. Therefore, the Alabama River would be subject to less impacts than the areas immediately downstream of Allatoona or Carters dams. As an example, due to proximity, the Etowah darter, Amber darter and the other fish and mussel species discussed above are more likely affected by releases from headwater projects than species occurring lower in the system, such as the Alabama sturgeon. Discretionary operations at Allatoona Dam and Carters Dam have little to no potential effect on this species.

Timing, Nature of the effect, Disturbance Frequency, and Disturbance intensity and severity. Because these factors are largely interdependent and evaluated based on a comparison of the simulated proposed action and baseline flow regimes, they are discussed together. Figures 1-4 illustrate the average annual flows at Allatoona, Carters, Montgomery, and Claiborne expressed as frequency (% of days) that daily average discharge (cfs) values are exceeded during the years 1983-2011. The proposed action simulated flow regime closely approximates the environmental baseline flow regime at each location. We examine how the proposed action operations would affect the seasonal timing and magnitude frequency of the flow in the rivers at these four locations below.

Allatoona

Specific information regarding minimum flows or other flow regime requirements for the Etowah darter, the only potentially known species occurring downstream of Allatoona in the Etowah River, are not available. Figures 5-16 show the frequency (% of days) that daily average discharge (cfs) values are exceeded during the years 1983-2011 for each calendar month at the Allatoona Dam tailrace. When examined monthly, Allatoona releases under the proposed action typically resulted in higher flows during low flow conditions (flow values that are exceeded at least 75% of the time)as compared to the baseline. This is particularly evident during the winter through late spring months, which may be beneficial to spawning and rearing activities of aquatic species inhabiting the river below Allatoona Dam. Discharges during the summer months under the proposed action closely approximate those of the baseline and effects, if any, are considered a continuation of the baseline effect. Although the daily average flows evaluated under the baseline and proposed action conditions provide valuable insight into the seasonal distribution of flows below the dam, it is important to note that throughout the baseline period and under the proposed action the hydropower peaking operation at Allatoona Dam results in significant periods of time each day when only a minimum release of 240 cfs occurs. Interruptions to this hydropower peaking operation occur when high inflows above the dam necessitate continuous hydropower generation and/or releases through the spillway gates or when special operations or equipment malfunctions necessitate. Under the proposed action, like the baseline, hydropower generation would continue to occur at least 5 days per week throughout the year resulting in a daily minimum flow of 240 cfs and daily maximum releases of either 3,250 or 6,500 cfs, (at this time, only one hydropower unit is operational and therefore the maximum hydropower release is 3,250 cfs). During flood risk management operations, additional releases may also occur through the spillway gates. During most times of the year throughout the baseline period and under the proposed action, hydropower generation occurs roughly 4-8 hours per day resulting in a flow an order of magnitude higher than the 240 cfs minimum flow that occurs for the remaining 16-20 hours. This is a dominant feature of the aquatic environment below the Allatoona project that exists under both the baseline and proposed action. Therefore, the effects to listed species, if any, as a result of the proposed action are considered a continuation of the baseline effect. Releases from Allatoona Dam under the proposed action would not be expected to change flows in tributaries where species such as the Cherokee darter could occur. There would be no expected effects to listed species, such as the Amber darter and Etowah darter, occurring in river segments upstream of the dam..

<u>Carters</u>

Based on information available to USACE there is no specific information regarding minimum flows or other flow regime requirements for the species occurring downstream of Carters Dam in the Coosawattee River. Those species include Amber darter and the freshwater mussel species described in the Status of the Species/Critical Habitat section above. Species that are known to occur upstream of Carters Reservoir and potentially occurring downstream include the Blue shiner (also found in Alabama). Figures 17-28 show the frequency (% of days) that daily average discharge (cfs) values are exceeded during the years 1983-2011 for each calendar month at the Carters Dam tailrace. The proposed action provides flows closely approximating those observed in the baseline period. However, the proposed action typically resulted in higher flows during low flow conditions (flow values that are exceeded at least 75% of the time) as compared to the baseline. This is a result of the seasonal minimum flow schedule, developed in close coordination with the Service, incorporated into the proposed action. The background for the flow schedule stems from a series of letters (Service to USACE 19 June 2003, USACE to Service 15 August 2003) telephone calls and meetings proposing such a schedule in the context of informal Section 7 consultation. As described in Section 3, Proposed Action, when the reservoir level is in Zone 1 a seasonal minimal flow would be in place. When in Zone 2, a minimum discharge of 240 cfs would be in place. Table 2 below describes the monthly minimum flow schedule when operating in Action Zone 1, incorporated into the proposed action and the corresponding minimum flow requirement in place during the baseline period.

Table 2. Monthly Minimum Releases (cfs) at Carters Re-Regulation Dam for Proposed Action and Baseline in Action Zone 1[1]												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Proposed	660	790	865	770	620	475	400	325	250	275	350	465
Baseline	240	240	240	240	240	240	240	240	240	240	240	240

[1]Minimum Releases in Zone 2 is 240 cfs

The seasonal monthly flow schedule prescribed in the proposed action includes a provision for reducing the minimum flow requirement when the pool level enters Action Zone 2 in order to ensure maintenance of at least the 240 cfs release. This reduction in flows is typically realized during the warmer months of the year and accordingly results in slightly lower flows during drought events (flows exceeded at least 90% of the time) than occurred under the baseline during the summer months. The graphs show that for most months, the ability to meet the revised monthly minimum releases would be achieved about 95% of the time. Amber darter critical habitat occurs upstream of Carters dam but would not be affected by the proposed action. Conasauga logperch and its Critical Habitat are found upstream of Carters dam. Although the species potentially occurs below Carters it has not been reported and upstream populations and Critical Habitat would not be affected.

Montgomery and Claiborne

Alabama sturgeon is potentially found in the Alabama River from Montgomery downstream to below Claiborne. For the listed critical habitat the PCEs include “A flow regime (*i.e.*, the magnitude, frequency, duration, seasonality of discharge over time) necessary to maintain all life stages of the species in the riverine environment, including migration, breeding site selection, resting, larval development, and protection of cool water refuges (*i.e.*,tributaries)”. There is no specific information regarding flow requirements for the species. Figures 29-52 show the frequency (% of days) that daily average discharge (cfs) values are exceeded during the years 1983-2011 for each calendar month at the Montgomery and Claiborne. In all months the simulated proposed action flow regime is nearly identical to the baseline flow regime with the exception of proposed action resulting in higher flows during drought periods (flows that are exceeded at least 90% of the time) than the baseline condition. This is likely a beneficial effect to the species. The proposed action flow regime is not expected to have any effect on the other PCE’s including channel morphology, substrate or water temperatures.

It should be noted that because of the intervening APC reservoirs on the Coosa and contributing flows released from the APC Martin and Harris Reservoirs from the Tallapoosa River, the impact at Montgomery and Claiborne from the USACE operations at Allatoona and Carters would likely be overshadowed by any operational deviations by APC. For example this was observed during the 2007 drought when APC effectively cut flows at Montgomery by 57%. Flows in the Cahaba River where the Cahaba shiner is known to occur would remain unchanged by USACE discretionary operations.

For other potentially affected species, including Wood stork, West Indian manatee and Red belly turtle there is no information relating to flow regimes (timing, distribution, duration, etc.) that would allow more refined determinations of affects. Therefore, since the proposed action flow regime is consistent with the baseline flow regime, effects, if any, are considered to be a continuation of the baseline effect.

In order to further evaluate the disturbance intensity and severity, we focus on the most extreme low and high flow events at each of the locations. Figures 53-60 show the average daily flow from 1983-2011 that is exceeded at least 90% of the time (extreme low flow) and 10% of the time (extreme high flow) under both the baseline and simulated proposed action flow regimes at each of the four locations.

Figure 53 presents average daily flows at Allatoona at the 90% exceedance rate for the calendar year. As these flows would be exceeded 90% of the time, they represent low flows that could be expected during drought conditions. In general, the figure shows that the proposed action would result in higher low flows than the baseline during the December-May time period and approximately equal flows during other parts of the year.

Figure 54 presents average daily flows at Allatoona at the 10% exceedance rate for the calendar year. As these flows would be exceeded only 10% of the time, they represent high flows. The general pattern of high flow events is consistent between the two flow regimes. However, the proposed action simulation does result in somewhat lower magnitude high flow events during the summer and fall months. This is most notable during the month of October when the proposed action includes a reduction in hydropower production related to the step down guide curve that is not present in the baseline condition.

Figure 55 presents average daily flows at Carters Re-Reg at the 90% exceedance rate for the calendar year.. In general, the figure shows that the proposed action would result in higher low flows than the baseline during the entire year. During the months of June and September, the proposed action results in slightly lower low flow conditions than occur in the baseline for these same months. However, the difference in flow values during these two months is generally only 50-150 cfs.

Figure 56 presents average daily flows at Carters Re-Reg at the 10% exceedance rate for the calendar year. The proposed action simulation and observed flow regimes are generally consistent throughout the calendar year, with the proposed action resulting in occasionally higher spring flow spikes and slightly lower summer and fall high flow events.

Figure 57 presents average daily flows at Montgomery at the 90% exceedance rate for the calendar year.. The proposed action simulation and observed flow regimes are generally consistent throughout the calendar year, with the proposed action consistently resulting in slightly higher low flows. The improvements in lower flows realized under the proposed action would be a beneficial effect to listed species. Higher flows during low-flow conditions would allow greater mobility during spring migrations. This would benefit species such as the Alabama sturgeon as well as host fish species for listed mussels in the Alabama River.

Figure 58 presents average daily flows at Montgomery at the 10% exceedance rate for the calendar year.. With respect to high flows, the proposed action simulation and observed flow regimes are essentially identical throughout the calendar year.

Figure 59 presents average daily flows at Claiborne at the 90% exceedance rate for the calendar year.. The proposed action simulation and observed flow regimes are generally consistent throughout the calendar year, with the proposed action consistently resulting in slightly higher low flows. This is most evident during the spring and early winter. Higher flows during low-flow conditions would allow greater mobility during spring migrations. This would benefit species such as the Alabama sturgeon as well as host fish species for listed mussels in the Alabama River.

Figure 60 presents average daily flows at Claiborne at the 10% exceedance rate for the calendar year.. With respect to high flows, the proposed action simulation and observed flow regimes are essentially identical throughout the calendar year.

Of the plant species discussed in STATUS OF SPECIES only Krals water plantain and Harparela are aquatic or living directly in the riverine environment. Neither occur directly in the mainstream of ACT Rivers and would therefore likely not be effected. Other plant species including Georgia rockcress, Green pitcher plant, Alabama canebrake pitcher plant and Tennessee yellow-eye grass live in close proximity to the rivers throughout the ACT basin, but there is little likelihood that the proposed action would have effects on river banks or wetlands in which they occur due to the overall similarity of flow regimes when the proposed action is compared to the baseline.

The flow regime analysis indicates that effects, if any, as a result of implementing the proposed action are generally a continuation of the baseline effect, with the exception of the proposed action resulting in beneficial effects to some of the flow dependent factors. These beneficial effects are generally attributable to the drought plan and seasonally varying minimum flow from the Carters Re-Regulation dam, both of which the Service has expressed support for in the Draft Fish and Wildlife Coordination Report.

7.6. GENERAL EFFECTS ON WATER QUALITY

The overall effect of the Proposed Action Alternative on water quality would be expected to be negligible. A full discussion of water quality impacts is found in Section 6.1.2 of the DEIS.   State agencies would continue to apply adaptive management techniques to more precisely define the ACT system's assimilative capacity. Water quality is closely tied to flow conditions, and based on the discussion above, the proposed operational changes in the Proposed Action Alternative would be expected to have little effect on water temperature, DO, phosphorous and nitrogen levels, chlorophyll *a* levels in the ACT Basin. A discussion of the HEC-5Q water quality simulation results is provided below. As described in the Model Description section, this analysis is summarized from the DEIS and compares the no action simulation to the proposed action simulation.

<u>Water Temperature</u>

Modeled results indicate that especially during low-flow conditions, there would be some locations with either slightly higher or lower water temperatures compared to the current operation. In the Alabama River at the confluence of the Coosa and Tallapoosa Rivers median water temperatures during low-flow periods are predicted to increase by as much as 1.8 °F (DEIS Figures 6.1-54).

The river reach immediately downstream of Allatoona Reservoir and Carters Reservoir would be expected to experience slightly decreased median water temperatures during periods of dry weather. Implementing a phased guide curve at Allatoona Reservoir and reducing hydropower during fall drawdown would be expected to have little effect on water temperatures in the lake and in reaches downstream. In the Etowah River from Allatoona Dam downstream to the Coosa River, median water temperatures would be expected to be slightly less than the No Action Alternative. Those slightly decreased water temperatures during dry periods from the No Action Alternative would be expected to have a negligible effect on aquatic species. During periods of drought, median water temperatures downstream of Carters Reregulation Dam are predicted to decrease by 0.9 °F immediately downstream of the dam (DEIS Figure 6.1-58).

<u>Dissolved Oxygen</u>

The proposed operational changes in the Proposed Action Alternative would be expected to have variable results on dissolved oxygen (DO) levels depending on flow conditions and location. The greatest changes in median DO would be expected during drought conditions. The timing and quantity of flow influence the system's ability to assimilate oxygen-demanding pollutants that results in changes in DO. As shown in Table 6.1-7 of the DEIS, most modeled locations would see dry-weather changes in DO from -0.05 to 0.05 milligrams per liter (mg/L), compared to current conditions, essentially constituting no change. Below Allatoona Reservoir, there would no change in DO (DEIS Figure 6.1-63), below Carters Reservoir (DEIS Figure 6.1-64) there would be a predicted decrease in DO of about 0.1 mg/L during extreme drought years. On the Alabama River (DEIS Figure 6.1-70) above R.F. Henry there would be DO decreases up to 0.5 mg/L from the current condition, during drought years, and further downstream to Claiborne Lake there would be varying results from slight DO decreases of <0.5 mg/L to slight increases of up to < 0.5 mg/L. Although the predicted variability would see some locations with slight DO decreases and others with slight increases, overall there would be no consistent pattern of changes and the proposed action is considered to have a negligible effect.

Phosphorous and Nitrogen

The proposed operational changes in the Proposed Action Alternative on would be expected to have variable results on phosphorous and nitrogen levels depending on flow conditions and location. The greatest changes would be expected during drought conditions. On the Coosa River during dry years, there would be a small overall increase in phosphorous (up to approximately 0.01 mg/L) (DEIS Figure 6.1-75) which is considered negligible. Other locations would see variable phosphorous levels generally in the range of ±0.1 mg/L. In the Coosawattee and Oostanaula Rivers during dry years, nitrogen is expected to increase up to approximately 0.1 mg/L downstream to the confluence with the Etowah River (DEIS Figure 6.1-73). Nitrogen on the Coosa River is elevated upstream of Weiss Lake less than 0.1 mg/L and then drops downstream of Weiss Lake. On the Alabama River, there would be negligible change from current conditions during the growing season.

Chlorophyll *a*

The proposed operational changes in the Proposed Action Alternative on would be expected to have variable results on chlorophyll *a* levels depending on flow conditions and location. Overall, the effect would be negligible. During periods of dry weather, there would be increased chlorophyll *a* levels upstream of Weiss Lake that would correspond with increases in phosphorous (DEIS Figure 6.1-98). At that location, chlorophyll *a* would be expected to increase about 10 mg/L compared to current operations during drought conditions.

7.7. CUMULATIVE EFFECTS

Cumulative effects of the proposed action on the environment in general are discussed in greater detail in Section 6.9 of the DEIS. Reference is made to that discussion; however, this discussion is focused on potential effects to federally listed threatened and endangered species.

Cumulative effects in ecosystems are defined as, "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions" (40 Code of Federal Regulations Parts 1500–1508). Constructing dams in riverine ecosystems abruptly, severely, and permanently alters many important physical and biological processes involving the movement of water, energy, sediments, nutrients, and biota. Eighteen dams impound mainstem channels of the ACT Basin, eliminating, fragmenting, and dramatically altering riverine habitat. USACE owns and operates five of those with APC owning the remainder. It should be re-emphasized that although the Alabama portion of the basin wide drought plan was developed in coordination with APC, USACE has no operational control over their water releases. During droughts, flows on the Coosa River below Weiss Dam (APC owned), the Tallapoosa River below Harris Dam (APC owned) and the Alabama River are almost entirely dependent on those APC releases from upstream projects.

As discussed in the DEIS there are a total of 280 other reservoirs in the basin that are 20 acres or larger in size with an average size of about 62 acres, totaling about 17,200 acres. These reservoirs which currently exist are part of the environmental baseline. Together they have had a cumulative effect on past alterations of flows in the ACT basin. In addition, there are several additional reservoirs that have been proposed and are in the process of planning or permitting by regulatory agencies (Table 2.1-6 of DEIS). There are a total of 56 locations (Table 2.1-20 DEIS) in the upper ACT basin in Georgia that have been deemed suitable by the State of Georgia for future water supply reservoir construction. Although the latter represent speculative ideas for future water supply, they cannot be completely discounted.

Water quality is influenced by a number of factors, including pollutant loads and in-stream flows (water quantity). Pollutant loads include both point and nonpoint sources of pollution. Point sources of pollution are regulated by USEPA through the NPDES under the Water Pollution Act of 1972 as amended. Nonpoint sources of pollution are also targeted to reduce pollutant loads under the Water Pollution Act of 1972 as amended through TMDLs. Enforcement of reductions is varied because of limited resources. As activities in the ACT Basin change from forested to urban land cover, especially in the headwaters areas of the Etowah River Basin, peak flows in the system are likely to increase and base flows in the system are likely to decrease. Urban land cover generally decreases interception of rainfall and infiltration, increasing stormwater runoff. That would be expected to result in less assimilative capacity during periods of low flow because base flow decreases. The combined total of all these activities including reservoirs past and future along with growing M&I demand, land use, point source discharge and resulting water quality could have future impacts on the environment in general and on listed species in particular.

USACE believes that the proposed action would not add to or worsen the cumulative effects described above. We believe that there would be no cumulative effect on listed species and for some factors as previously discussed would represent an improvement.

8. CONCLUSION

Based on the effects analyses described above, the USACE has determined that the proposed action may affect but is not likely to adversely affect Wood stork, West Indian manatee, Red hills salamander, Alabama red-belly turtle, Gulf sturgeon, Blue shiner, Etowah darter, Cherokee darter, Cahaba shiner, Amber darter, Goldline darter, Conasauga logperch, Alabama sturgeon, Finelined pocketbook, Orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, Ovate clubshell, Southern clubshell, Southern pigtoe, Triangular kidneyshell, Southern acornshell, Upland combshell, Alabama pearlshell, Southern combshell, Heavy pigtoe, Alabama heelsplitter, Georgia pigtoe, Interrupted rocksnail, Rough hornsnail, Lacy elimia, Round rocksnail, Painted rocksnail, Flat pebblesnail, Cylindrical lioplax snail, Tulotoma snail, Georgia rockcress, Harperella, Kral's water-plantain, Green pitcher-plant, Alabama canebrake pitcher plant and Tennessee yellow-eyed grass. It may affect but is not likely to adversely affect critical habitat for Amber darter, Conasauga logperch, Alabama sturgeon, Finelined pocketbook, Orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, Ovate clubshell, Southern clubshell, Southern pigtoe, Triangular kidneyshell, Southern acornshell, Upland combshell, Alabama pearlshell, Georgia pigtoe, Interrupted rocksnail, Rough hornsnail and Georgia rockcress.

Therefore, we request concurrence with this determination per section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq).

Appendix A

Figures

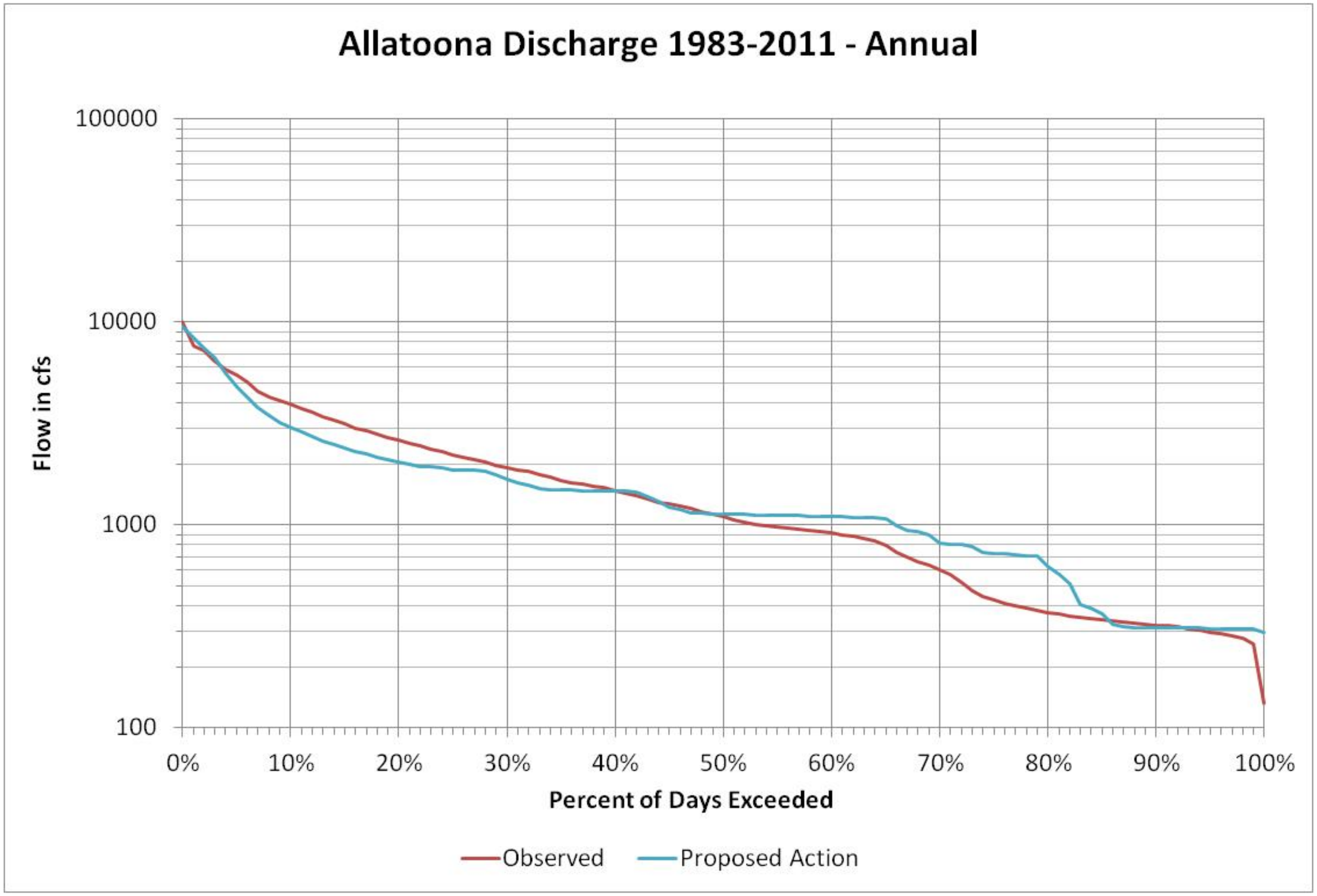


Figure 1. Comparison of Observed Data and Modeled Proposed Action for Average Annual Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

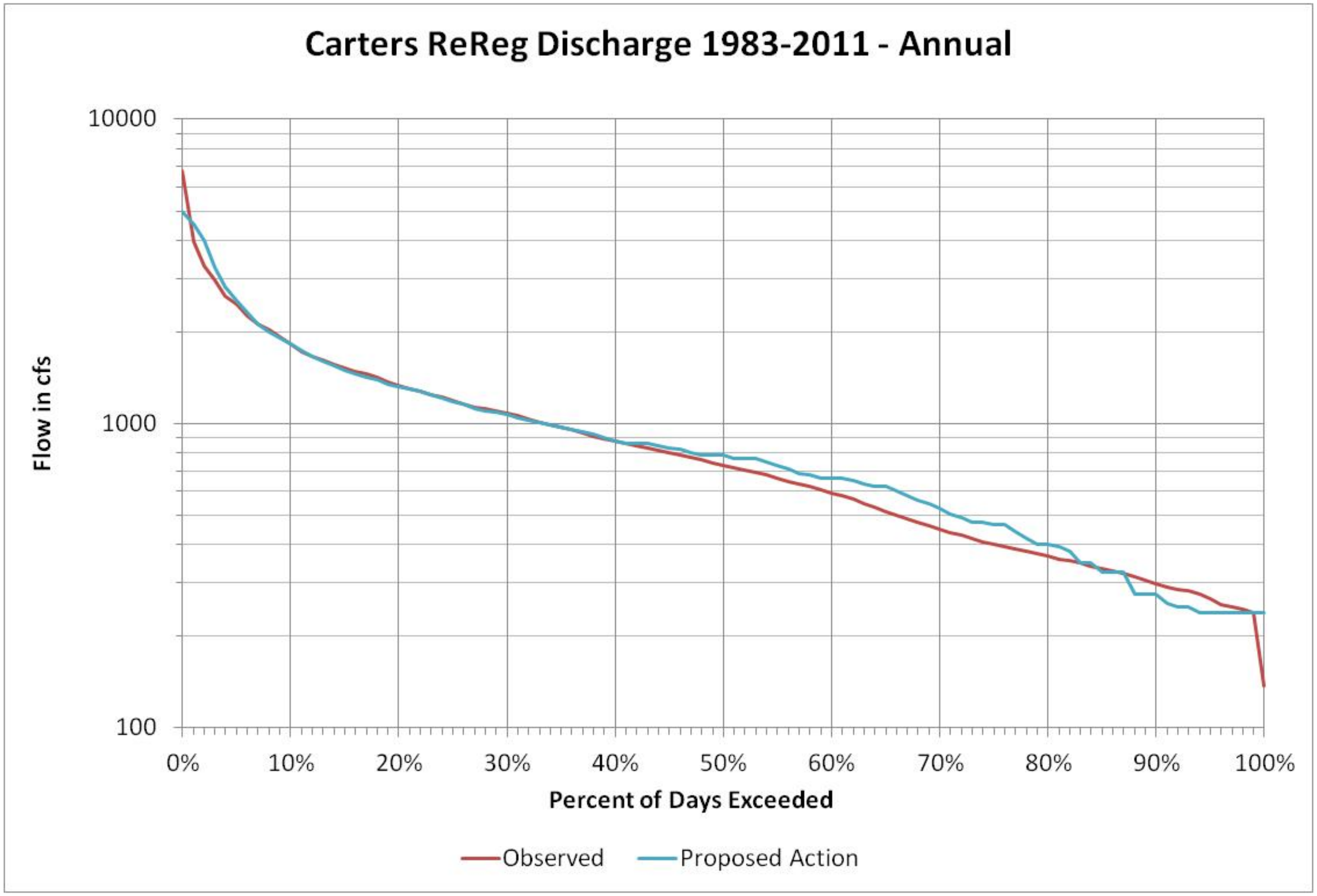


Figure 2. Comparison of Observed Data and Modeled Proposed Action for Average Annual Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

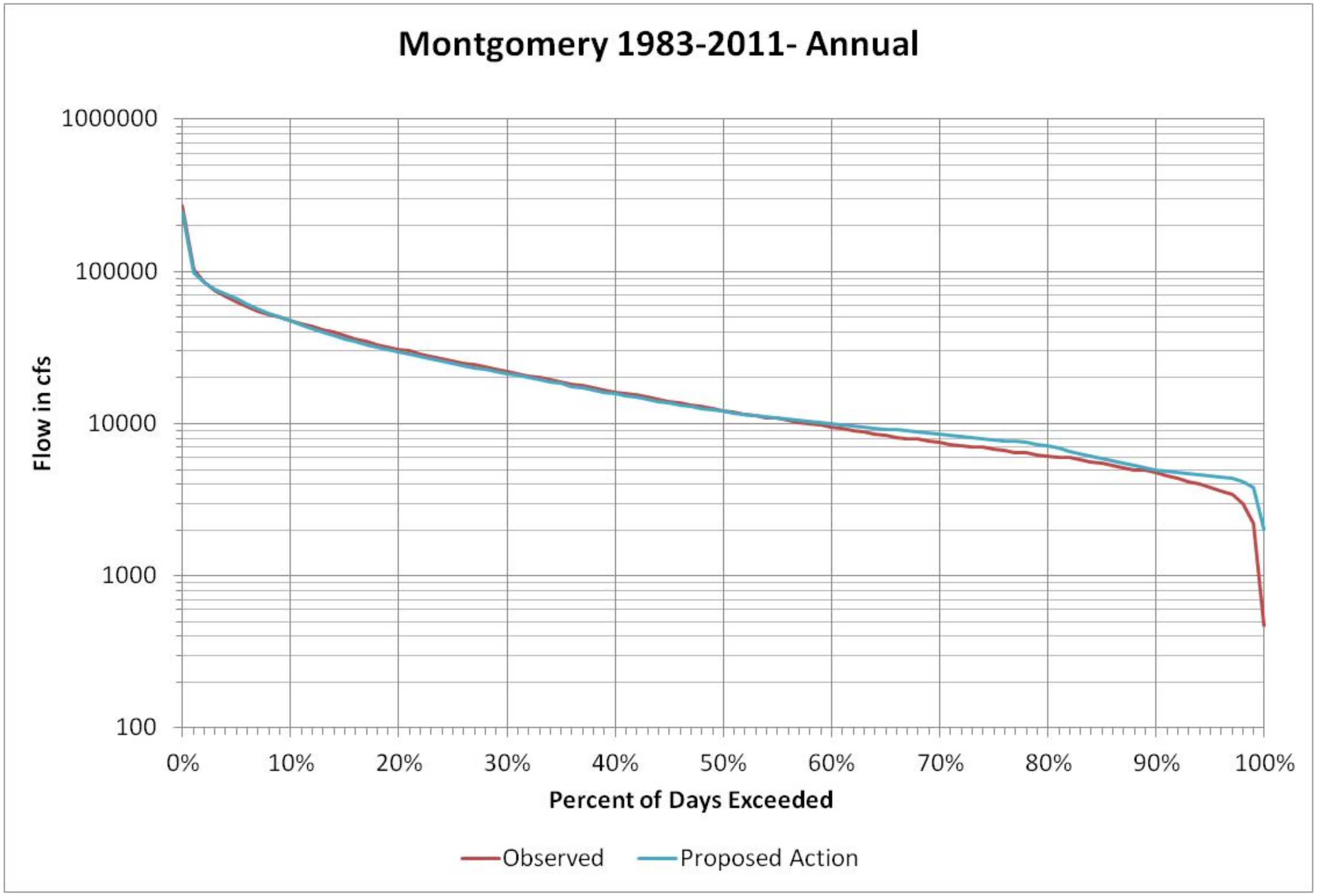


Figure 3. Comparison of Observed Data and Modeled Proposed Action for Average Annual Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

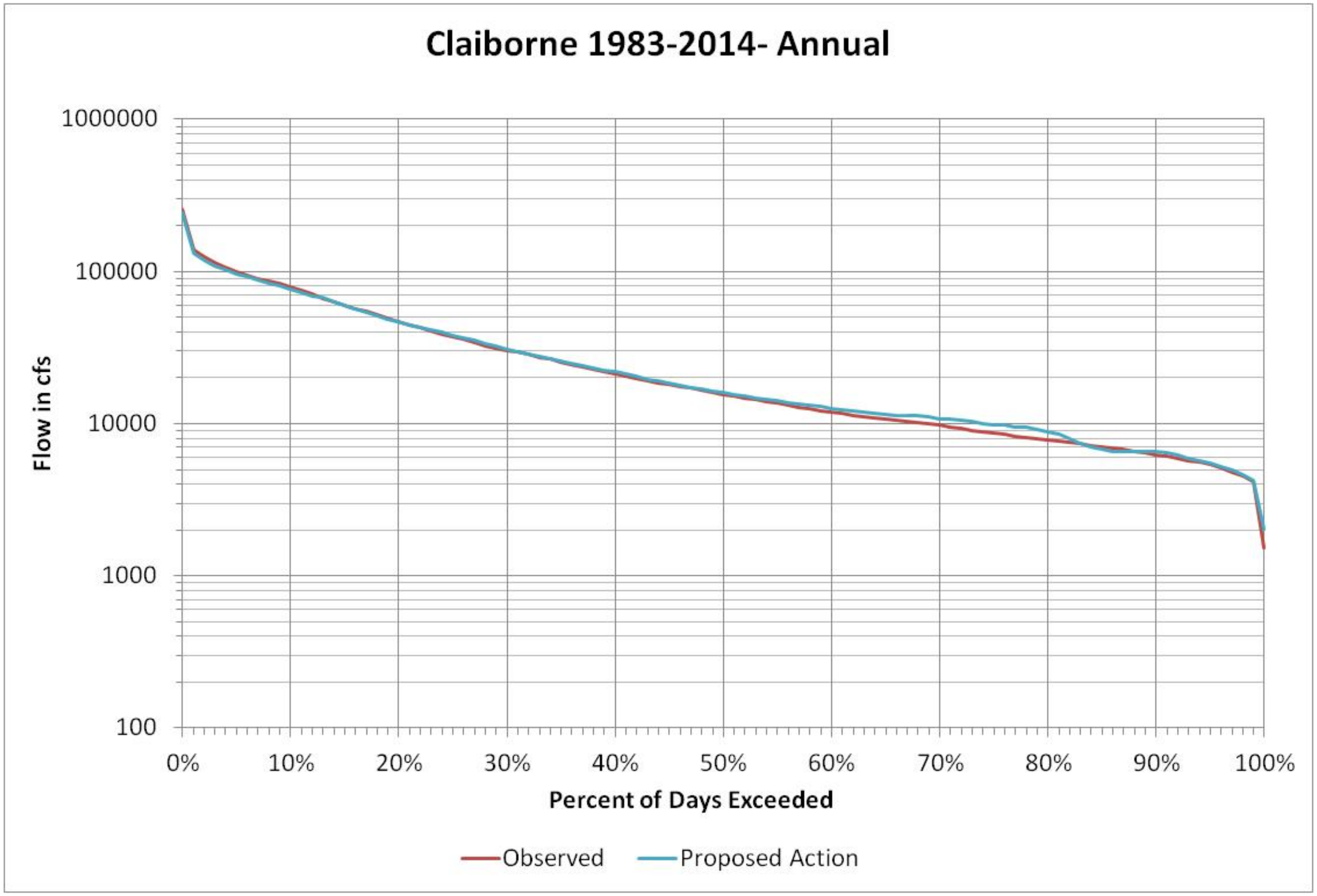


Figure 4. Comparison of Observed Data and Modeled Proposed Action for Average Annual Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

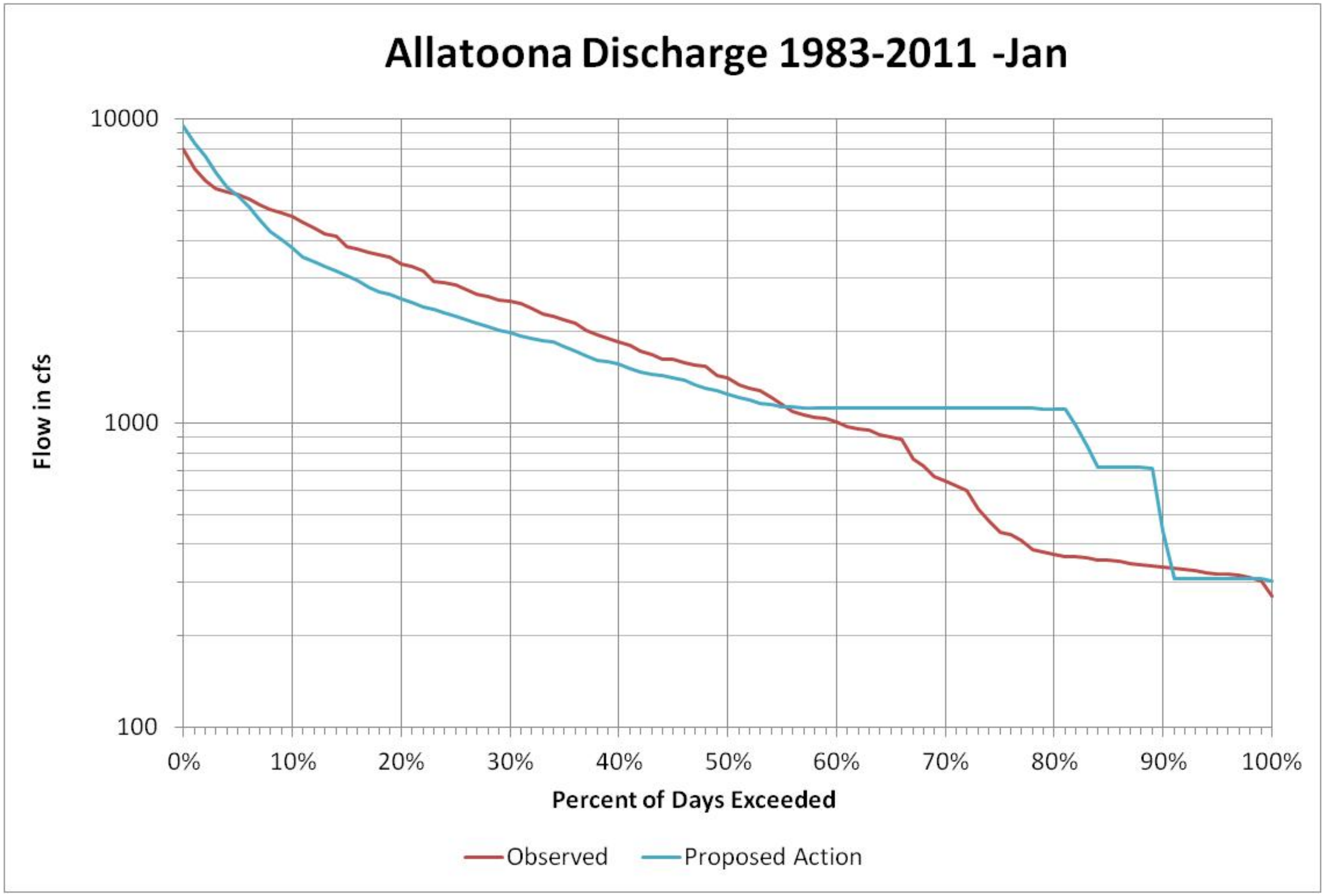


Figure 5. Comparison of Observed Data and Modeled Proposed Action for Average January Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

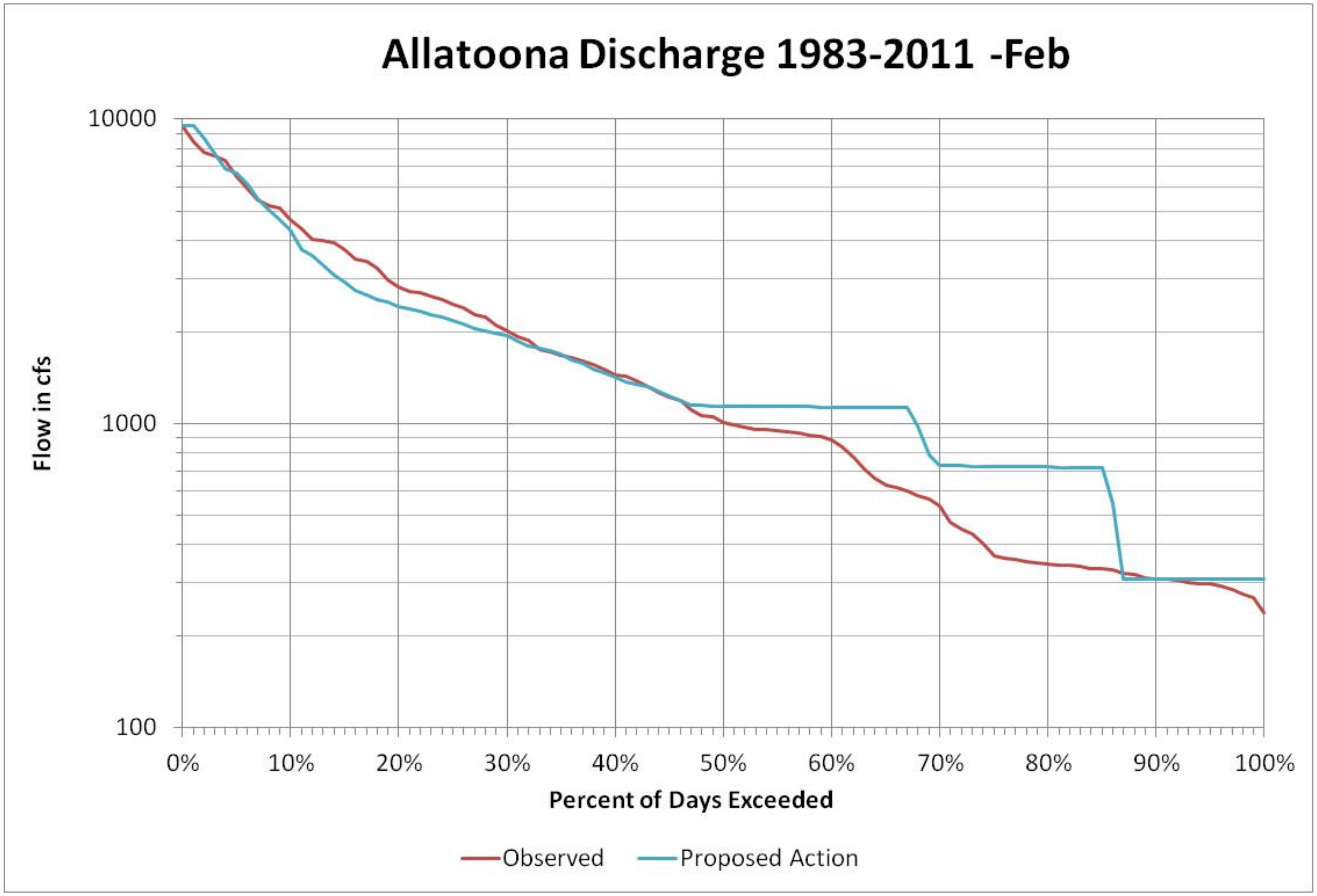


Figure 6. Comparison of Observed Data and Modeled Proposed Action for Average February Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

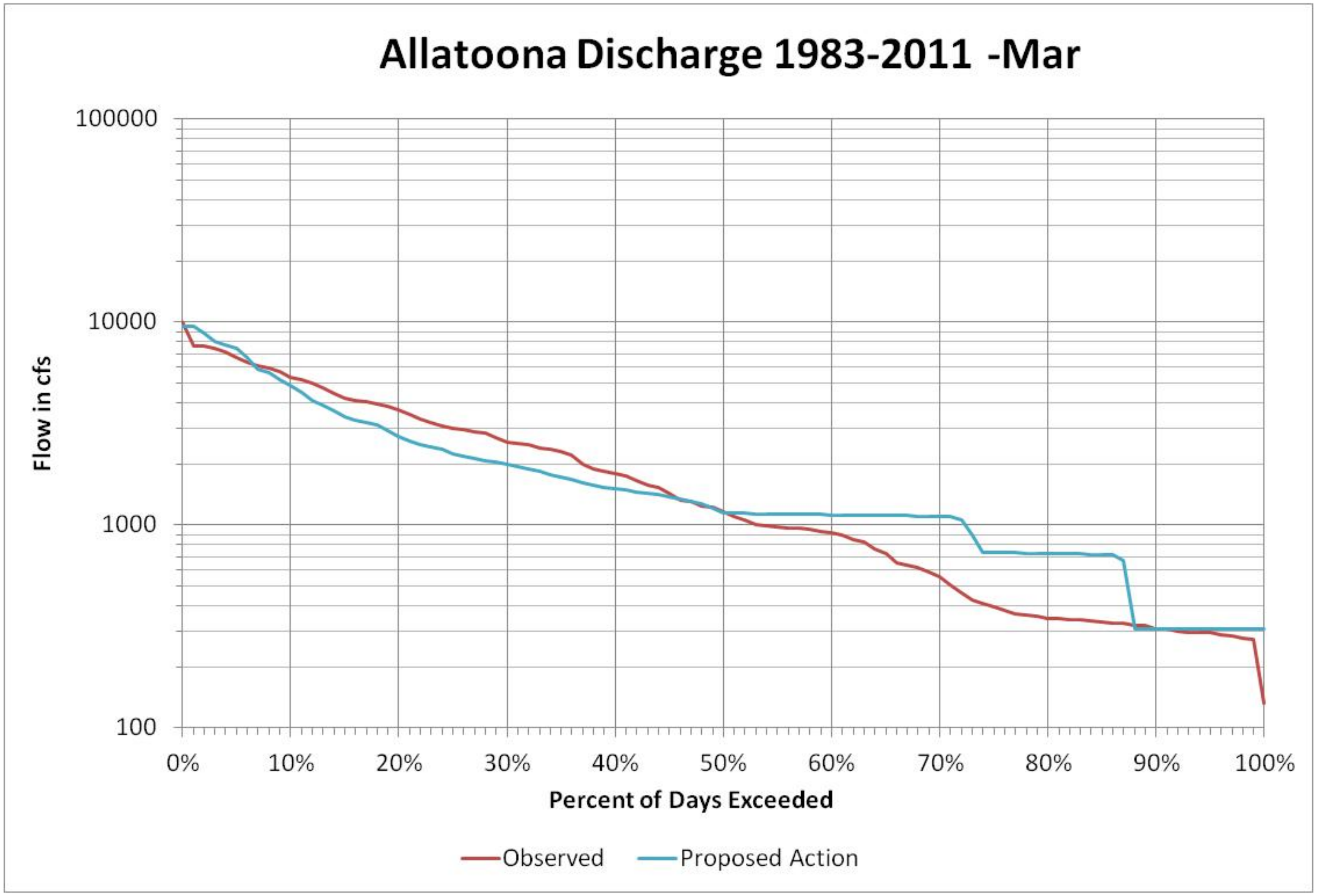


Figure 7. Comparison of Observed Data and Modeled Proposed Action for Average March Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

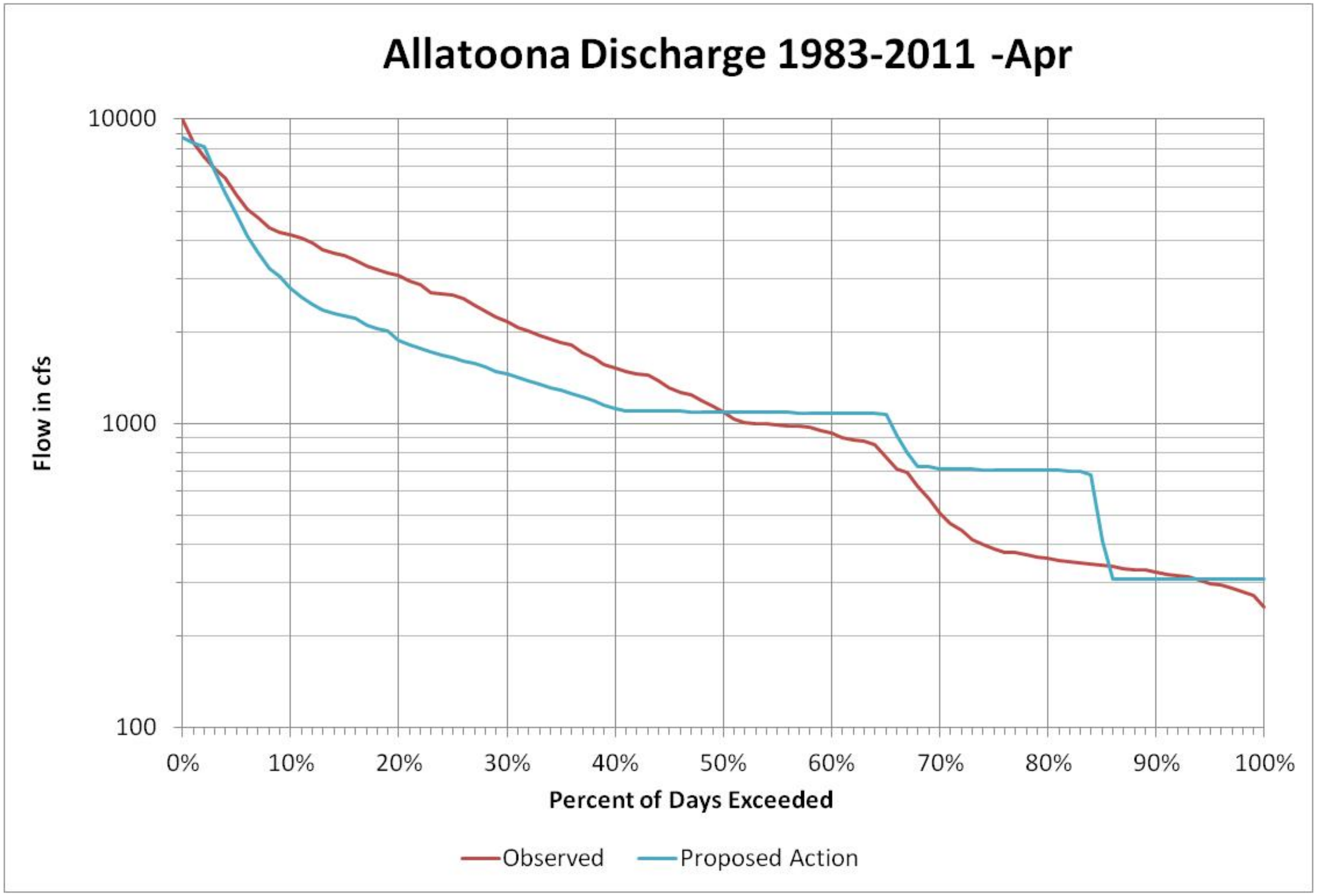


Figure 8. Comparison of Observed Data and Modeled Proposed Action for Average April Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

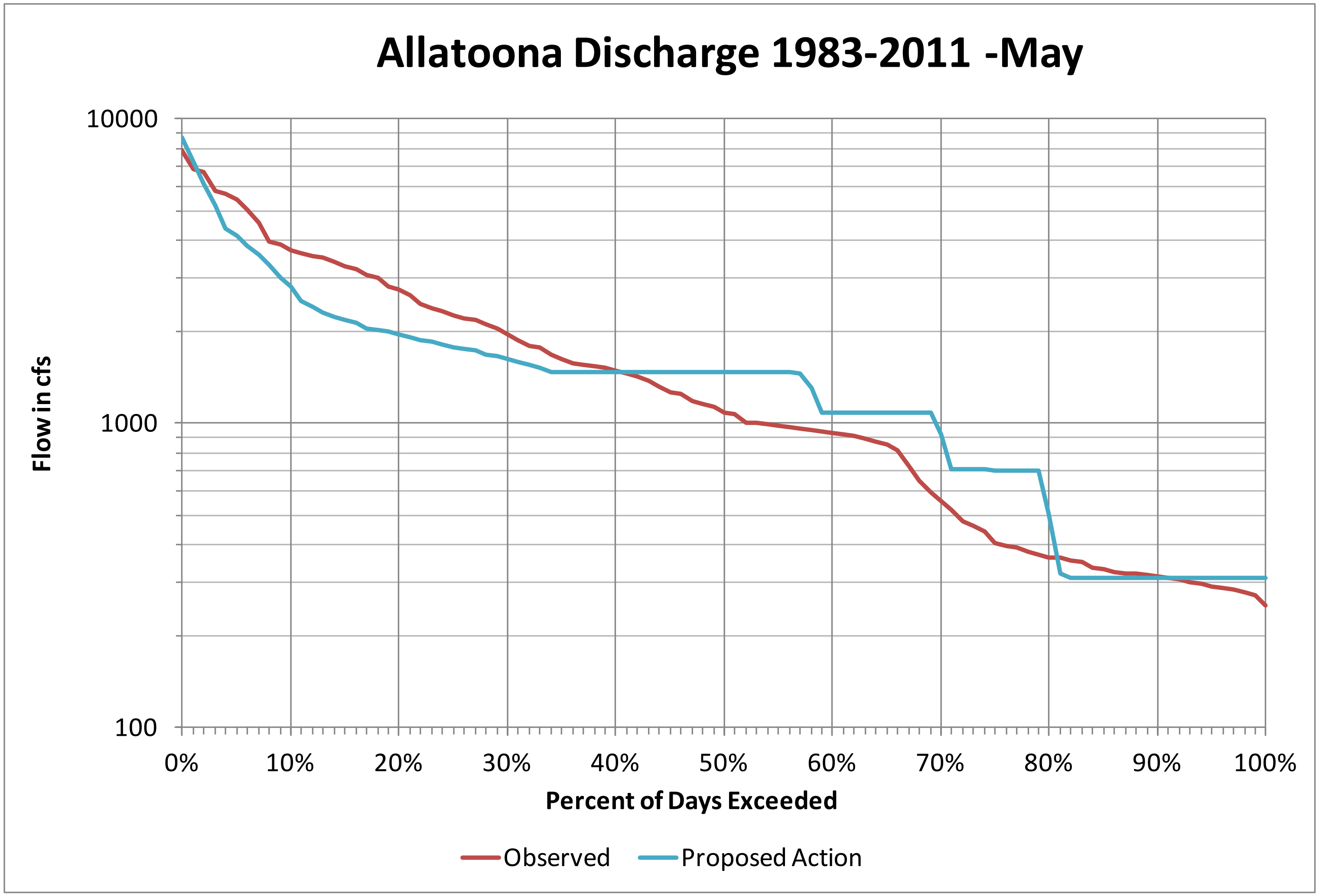


Figure 9. Comparison of Observed Data and Modeled Proposed Action for Average May Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

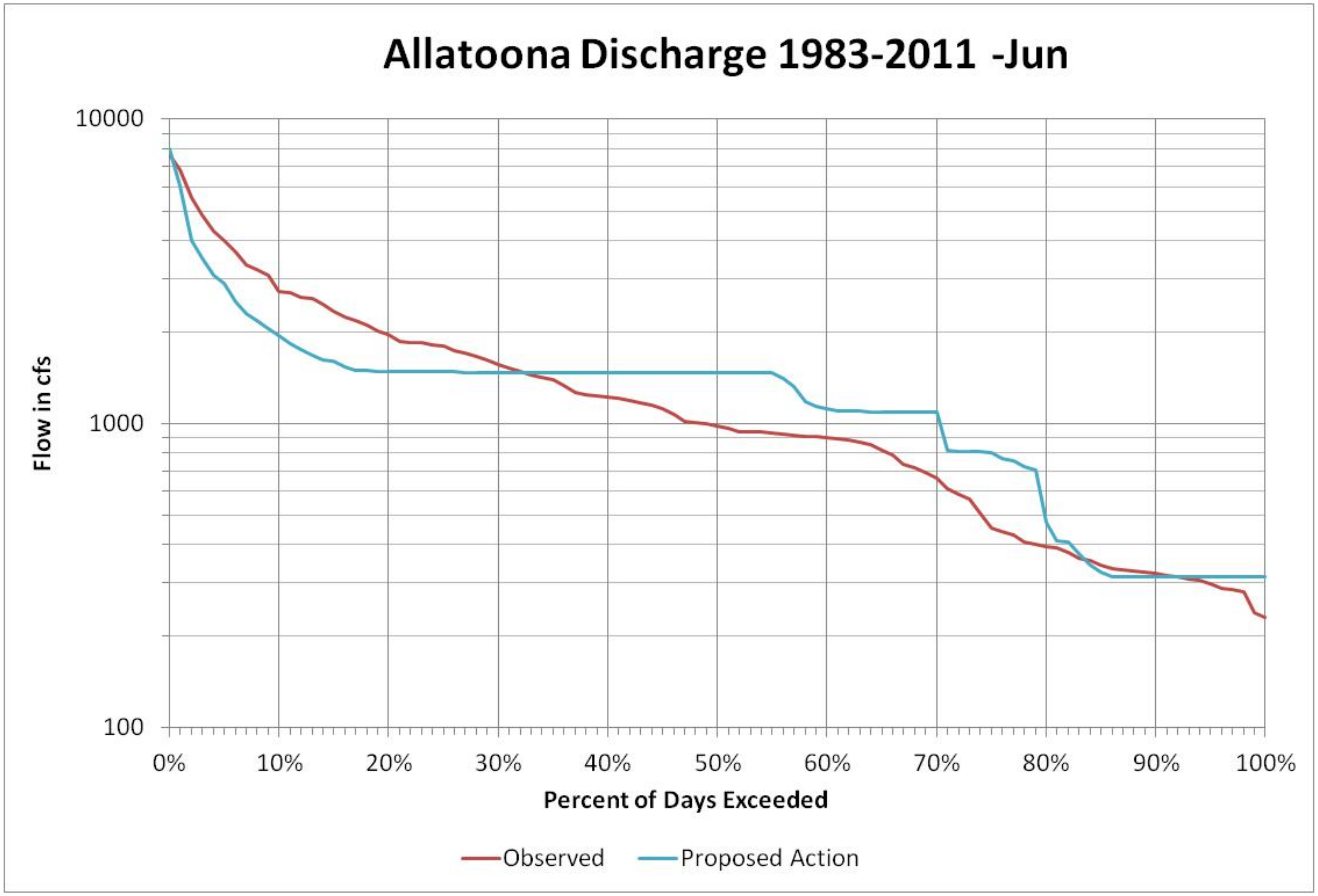


Figure 10. Comparison of Observed Data and Modeled Proposed Action for Average June Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

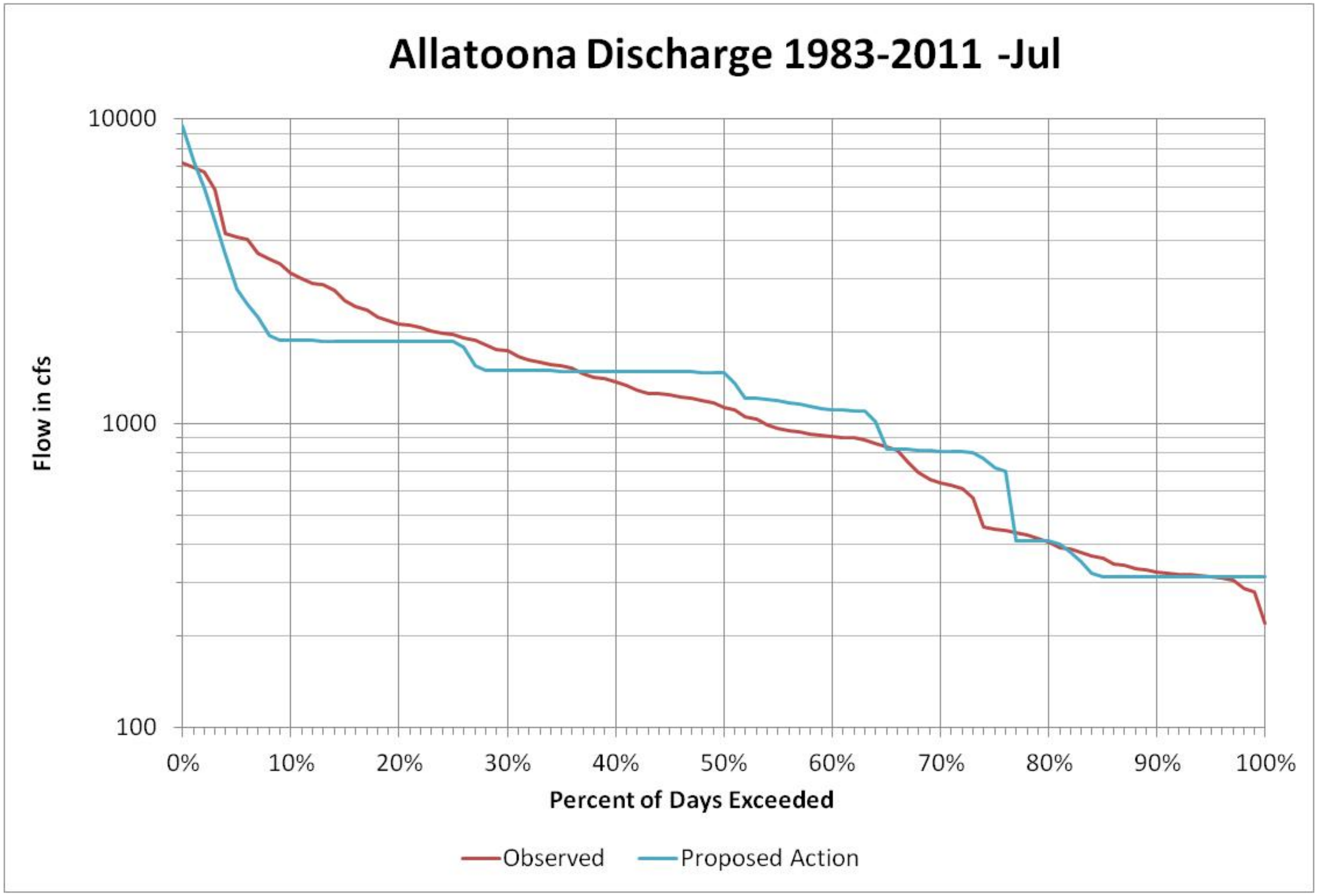


Figure 11. Comparison of Observed Data and Modeled Proposed Action for Average July Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

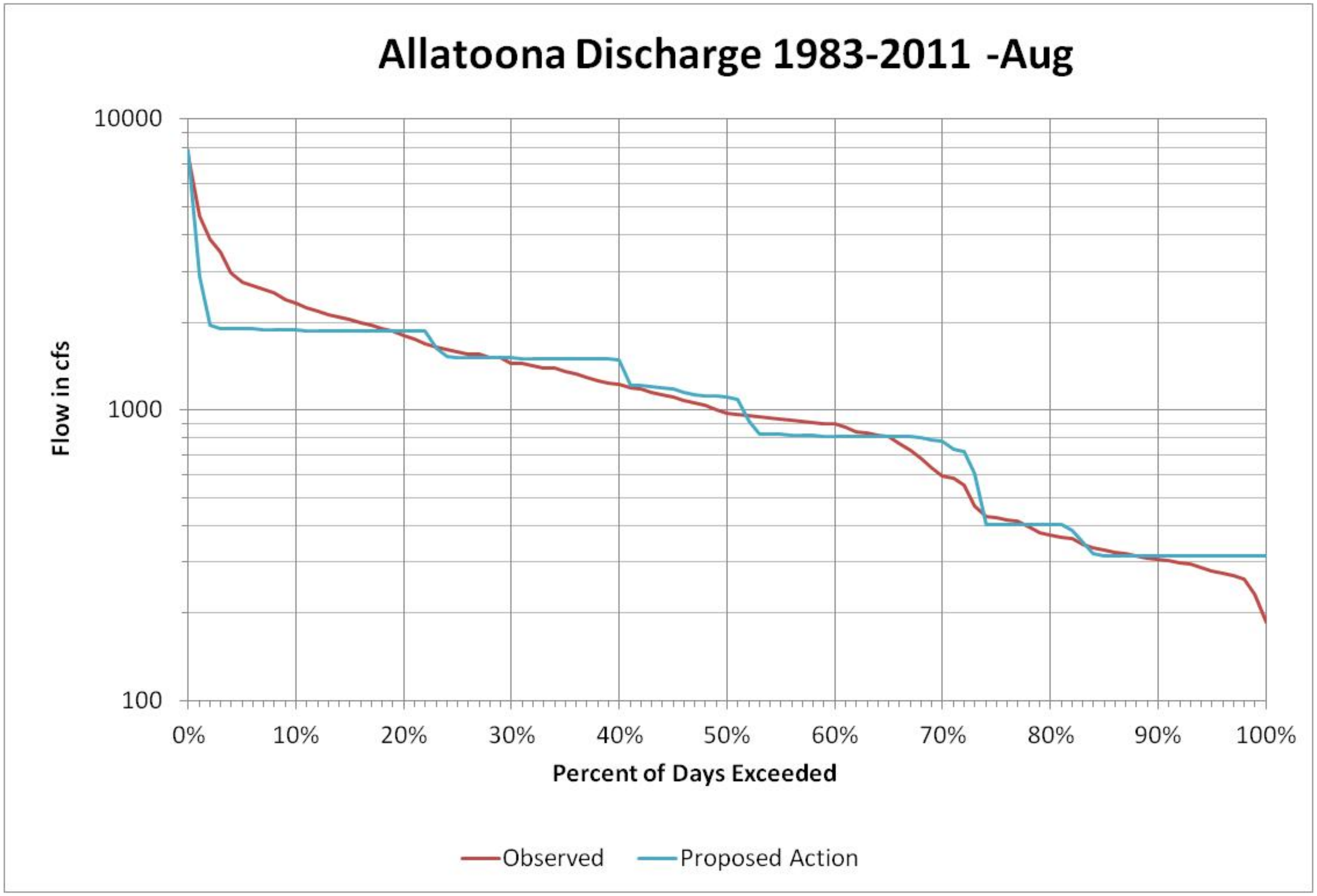


Figure 12. Comparison of Observed Data and Modeled Proposed Action for Average August Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

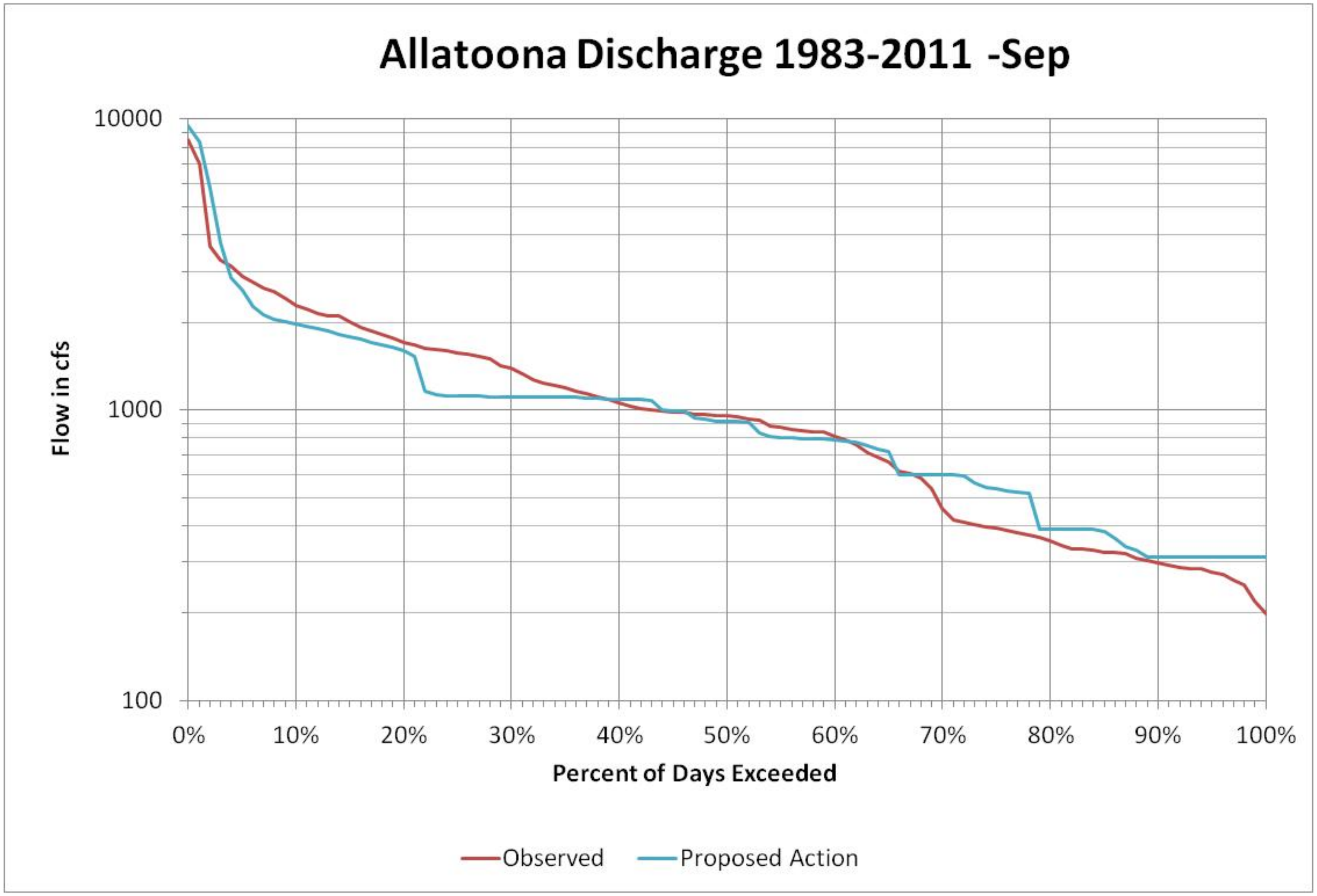


Figure 13. Comparison of Observed Data and Modeled Proposed Action for Average September Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

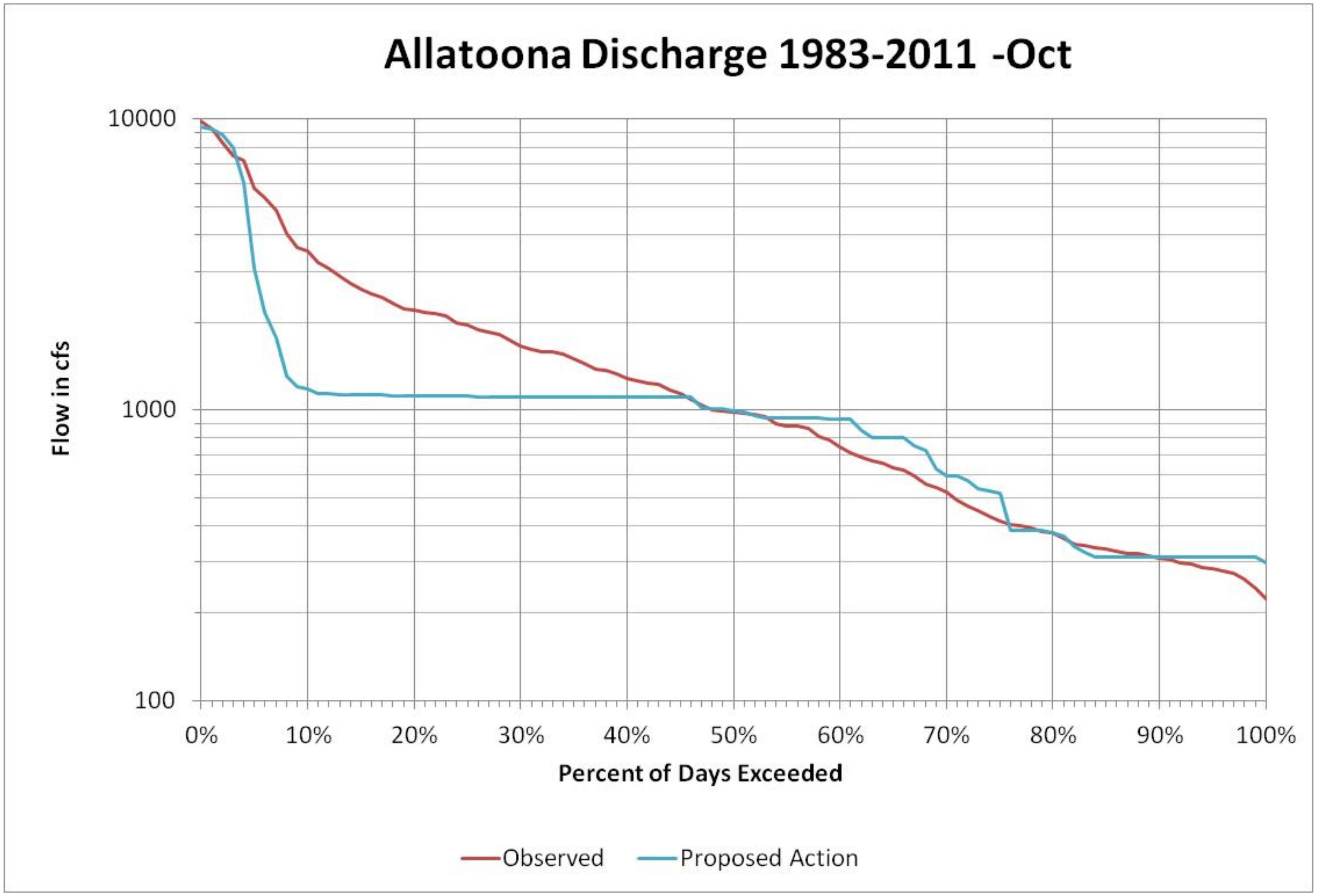


Figure 14. Comparison of Observed Data and Modeled Proposed Action for Average October Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

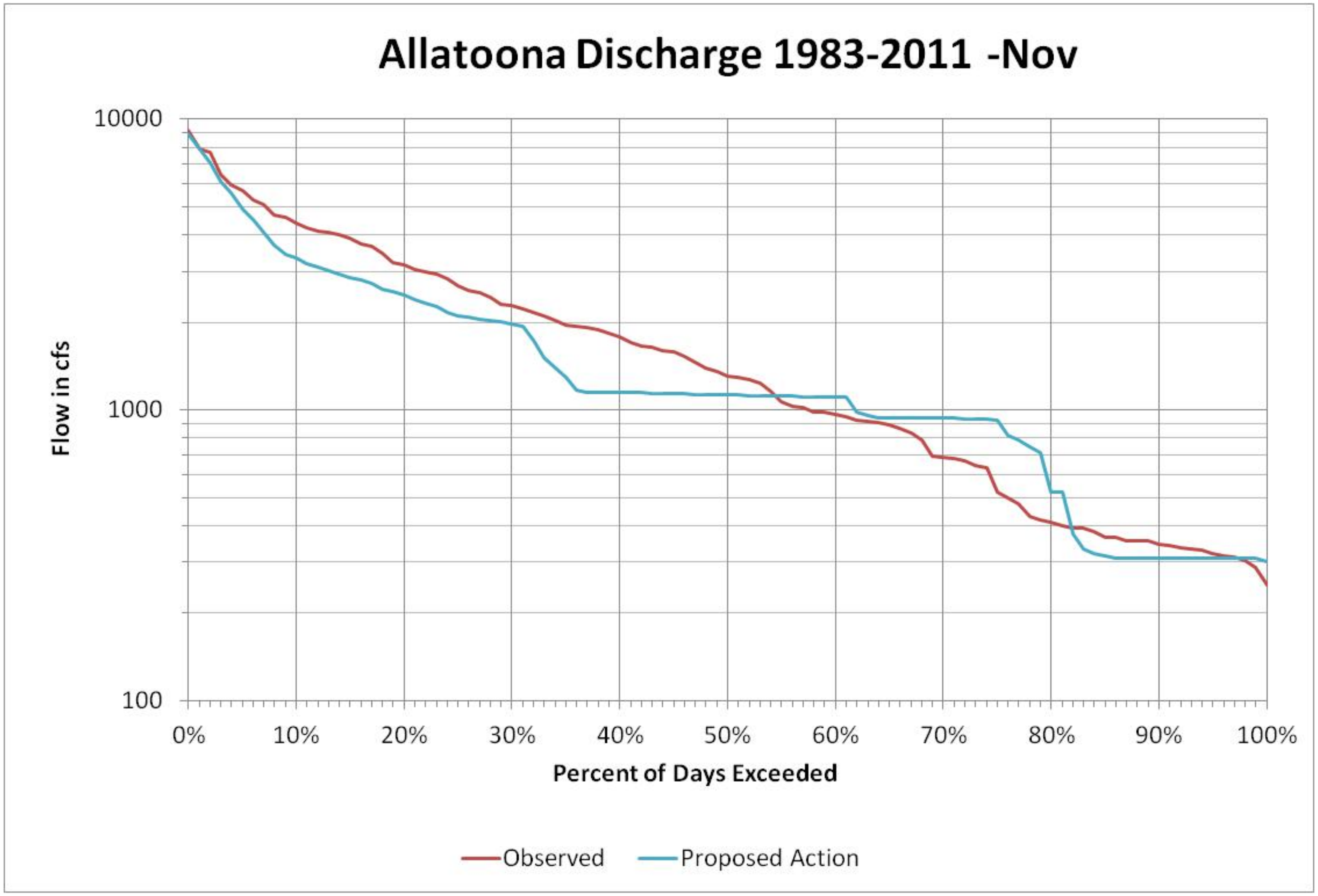


Figure 15. Comparison of Observed Data and Modeled Proposed Action for Average November Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

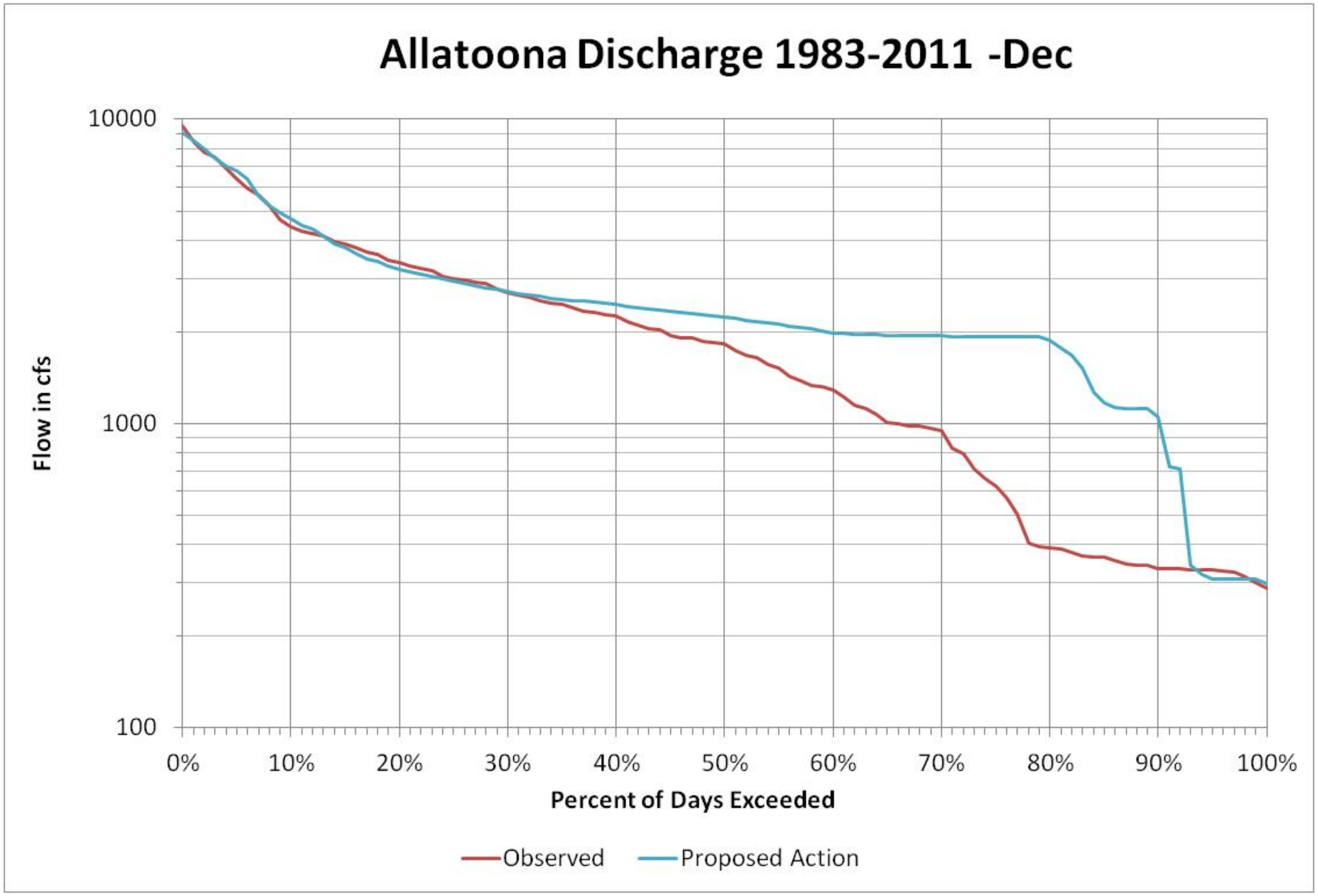


Figure 16. Comparison of Observed Data and Modeled Proposed Action for Average December Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

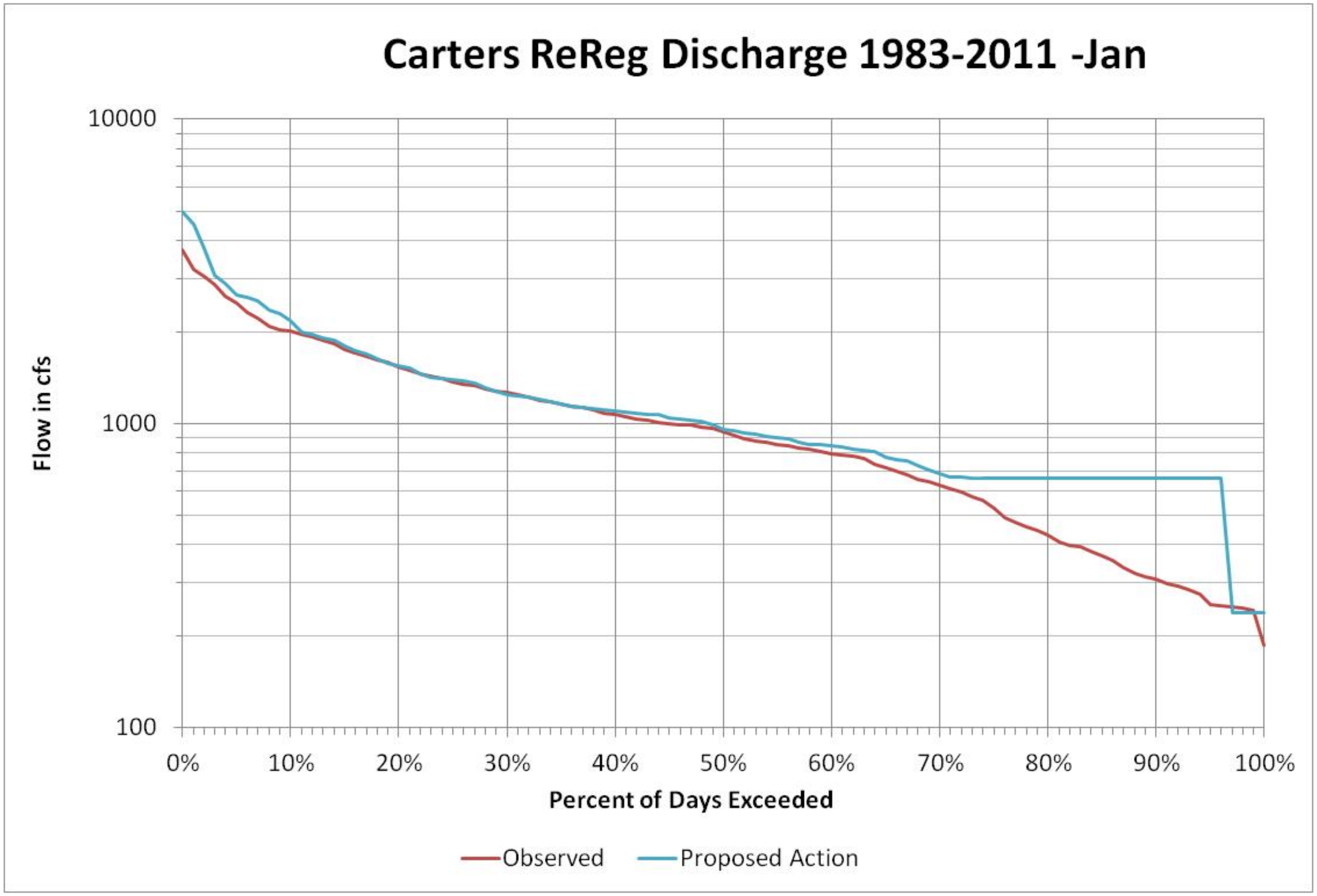


Figure 17. Comparison of Observed Data and Modeled Proposed Action for Average January Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

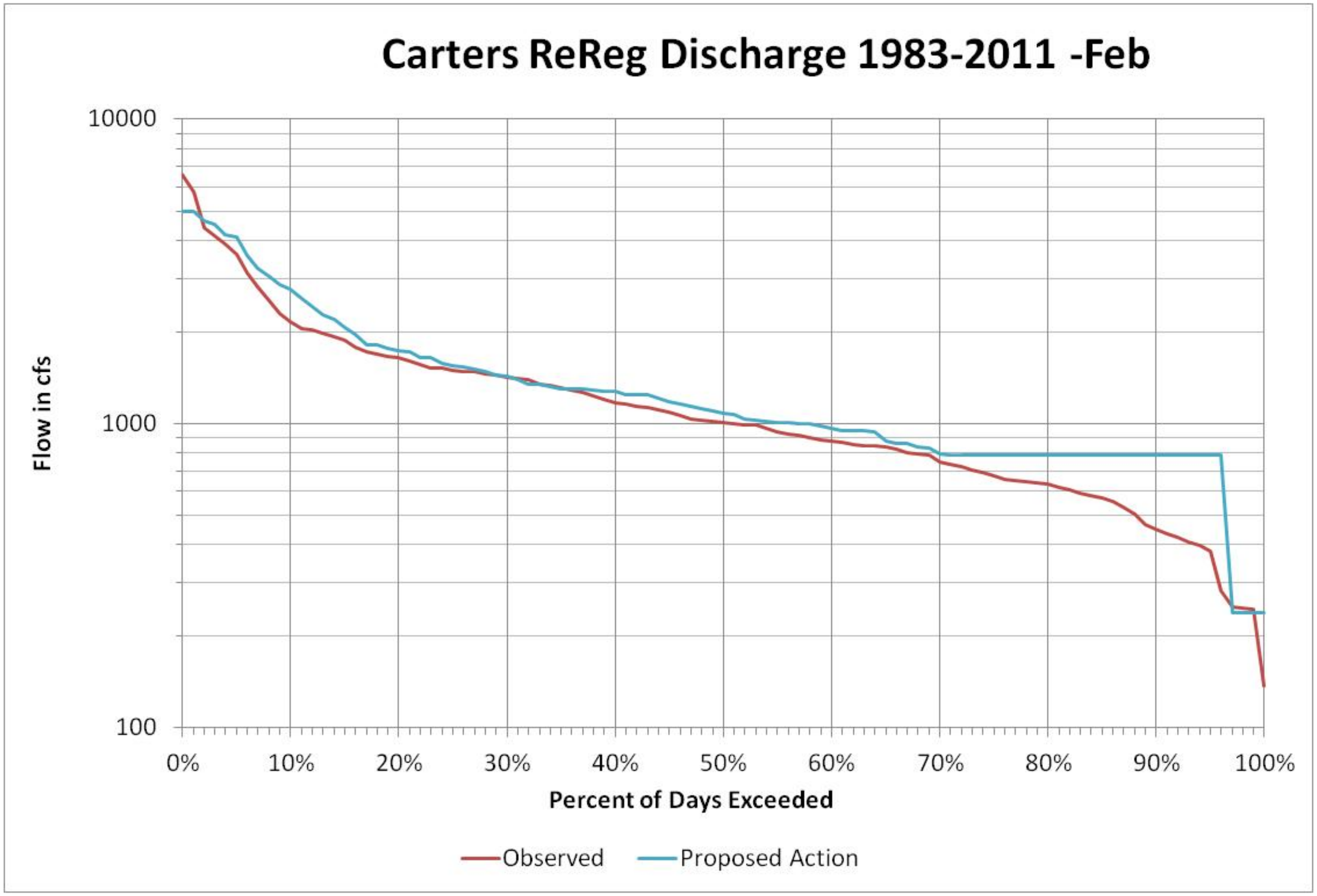


Figure 18. Comparison of Observed Data and Modeled Proposed Action for Average February Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

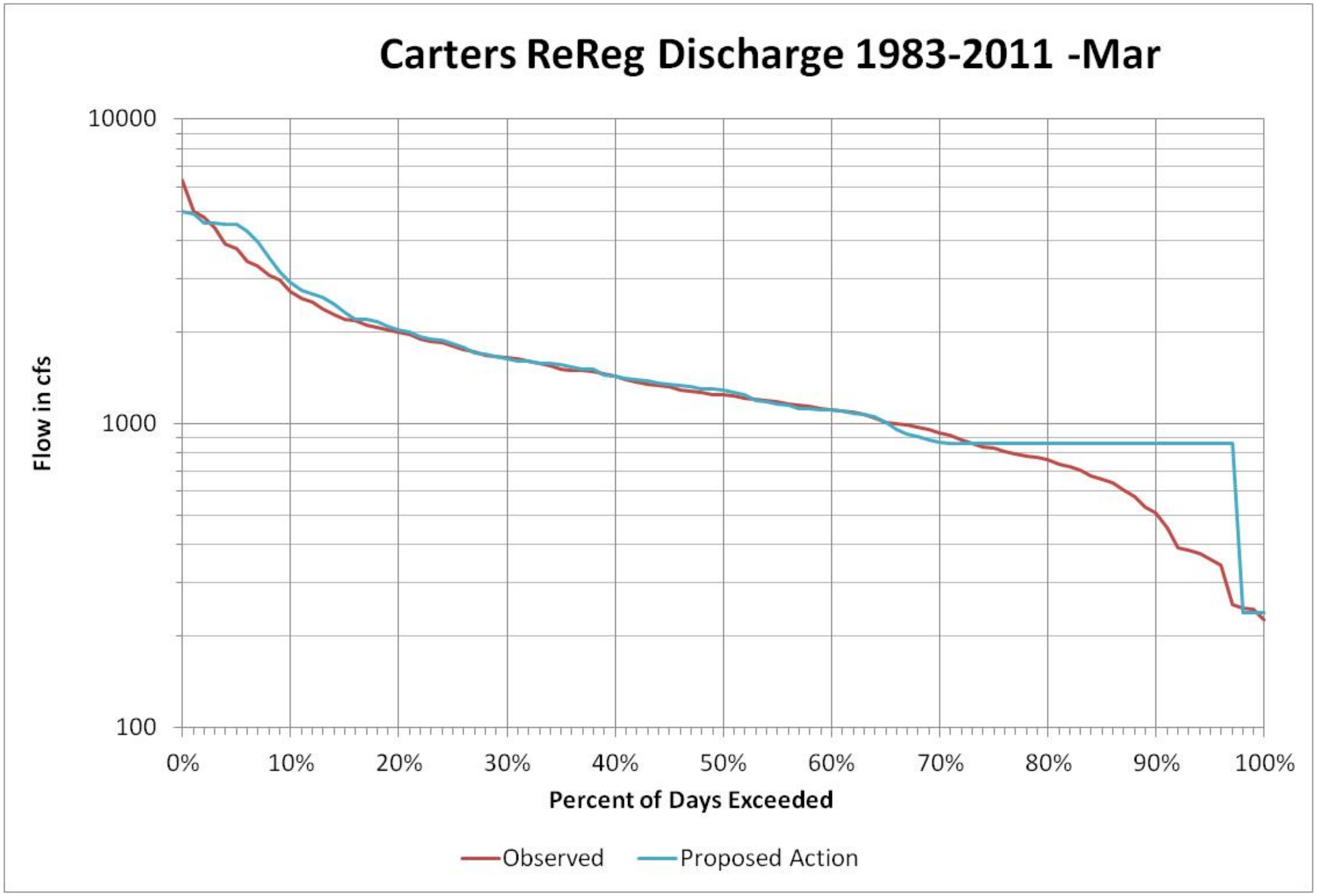


Figure 19. Comparison of Observed Data and Modeled Proposed Action for Average March Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

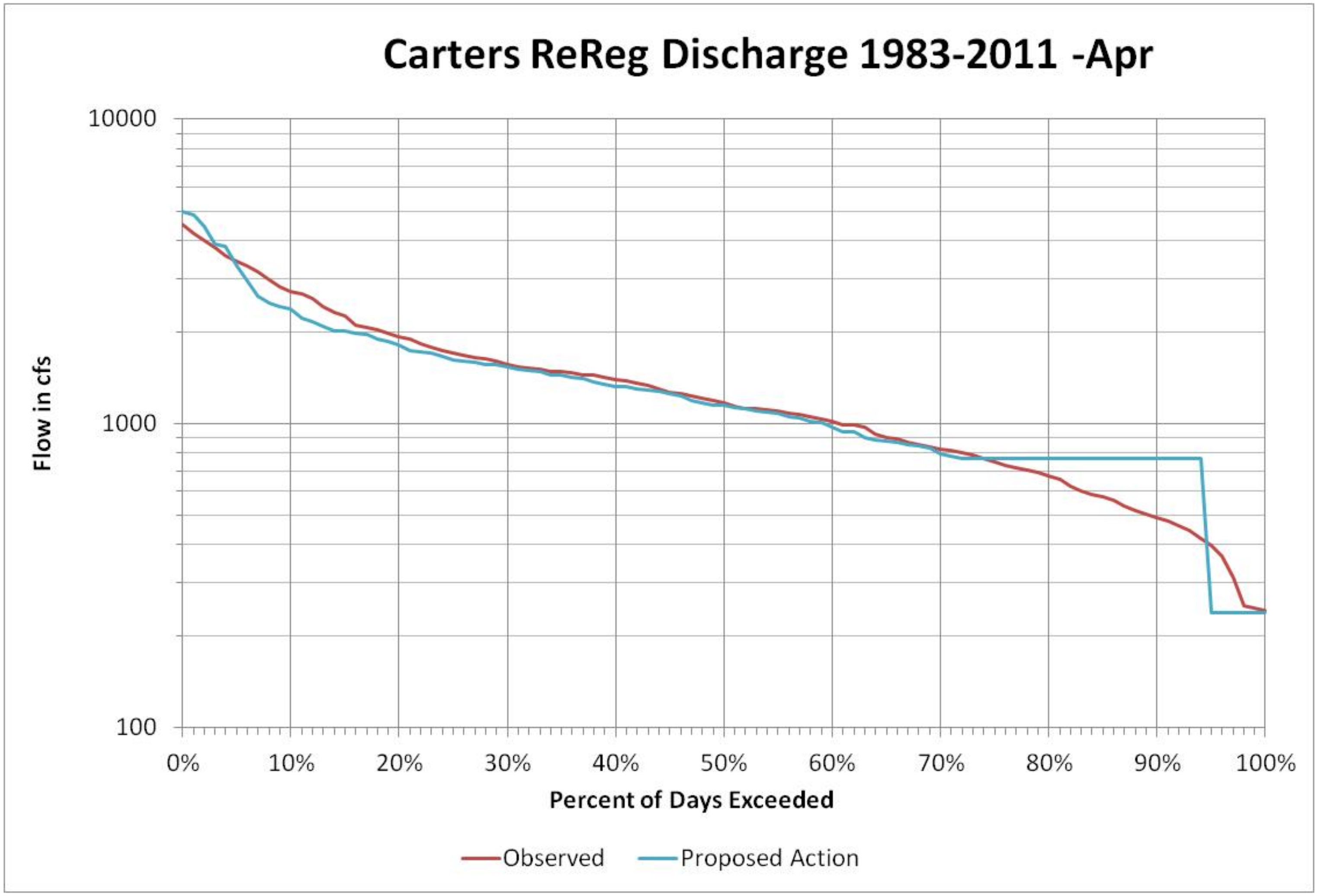


Figure 20. Comparison of Observed Data and Modeled Proposed Action for Average April Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

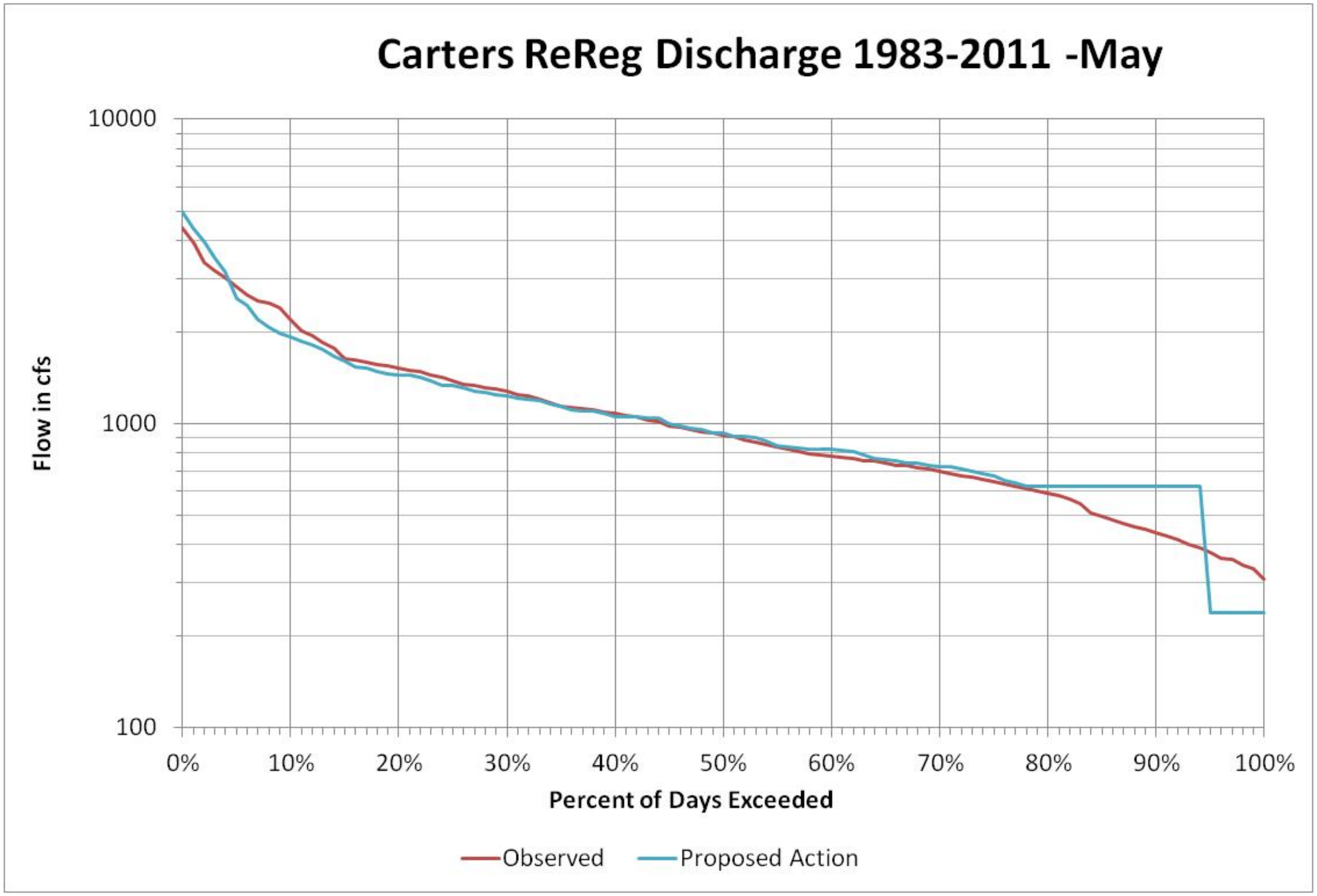


Figure 21. Comparison of Observed Data and Modeled Proposed Action for Average May Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

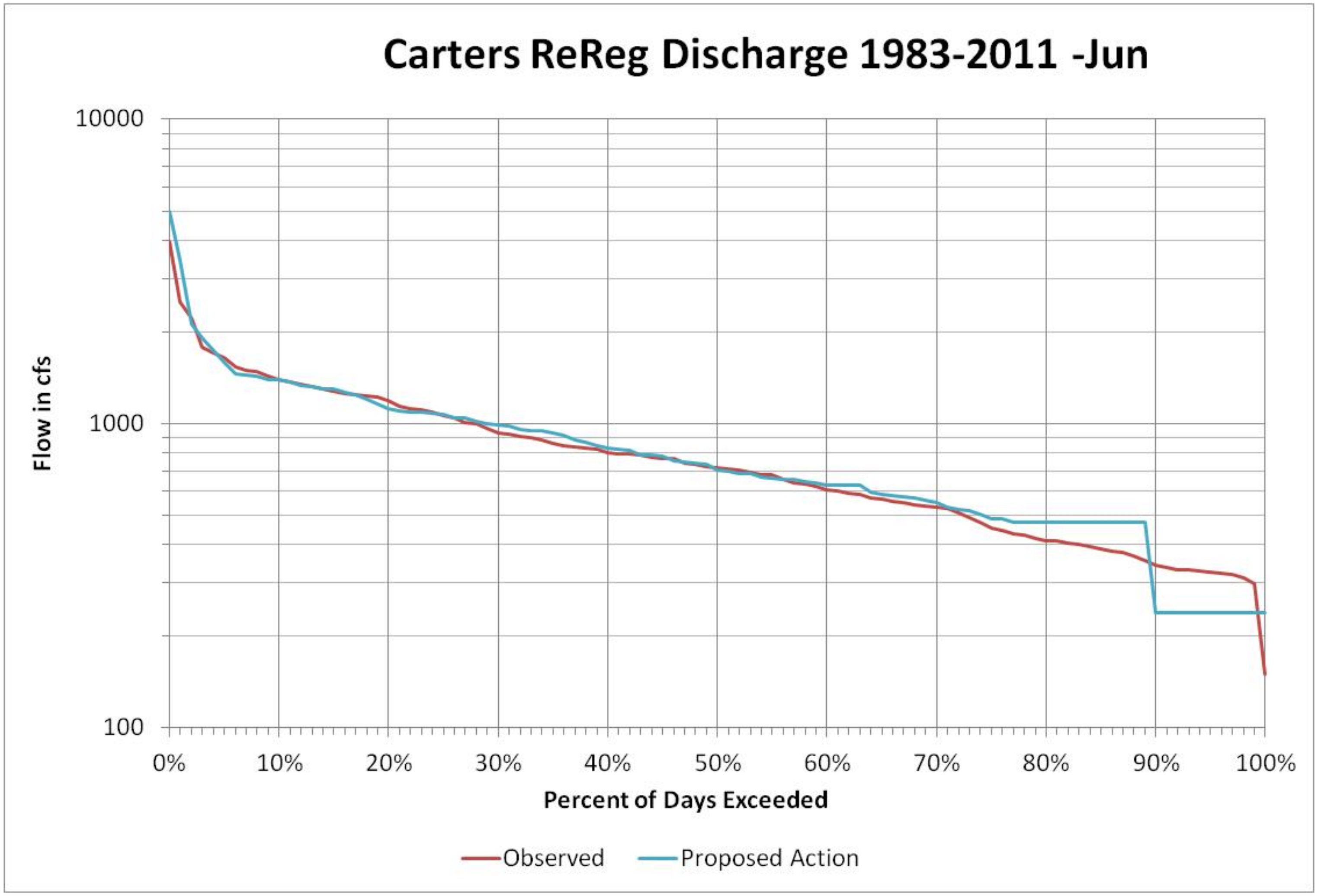


Figure 22. Comparison of Observed Data and Modeled Proposed Action for Average June Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

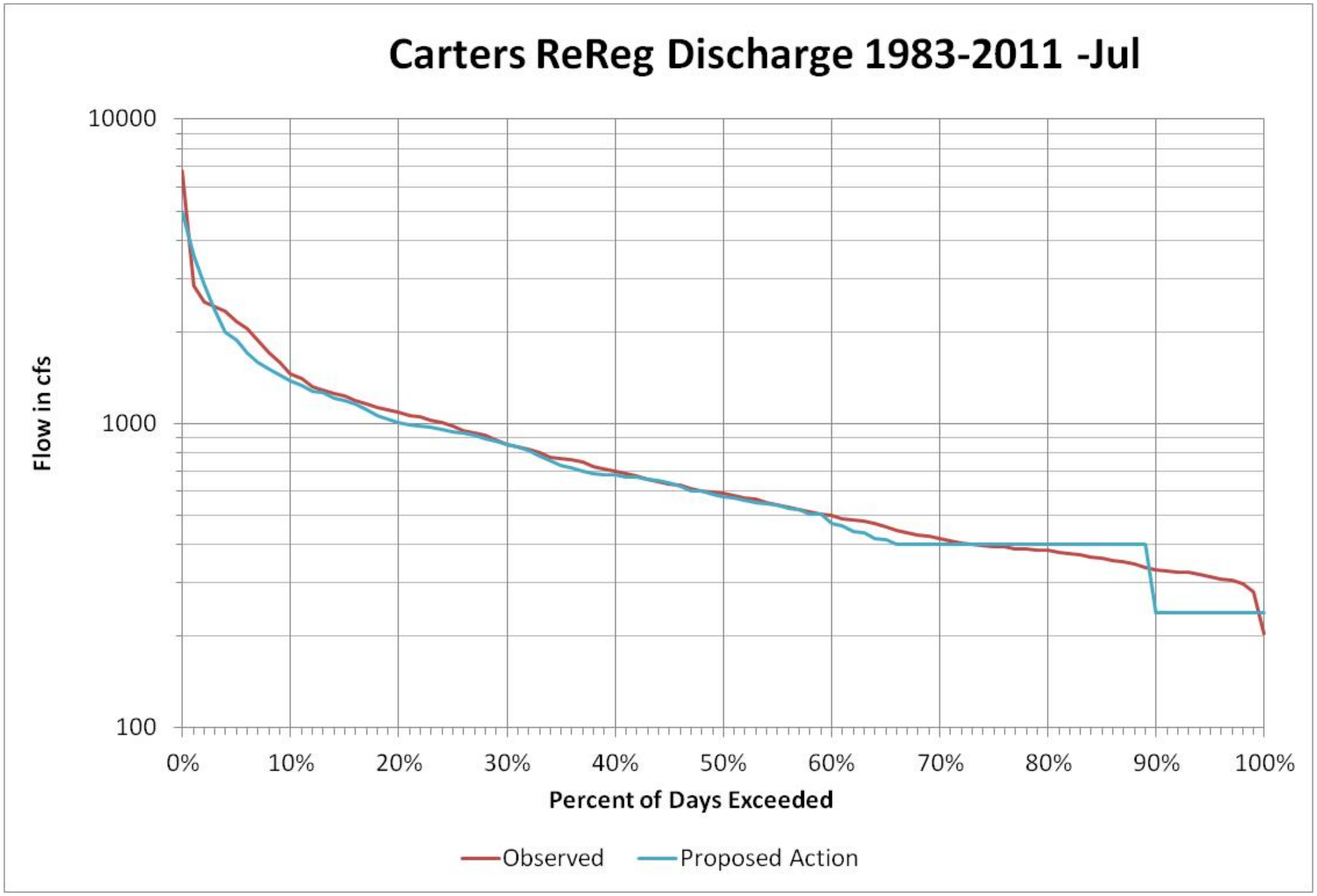


Figure 23. Comparison of Observed Data and Modeled Proposed Action for Average July Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

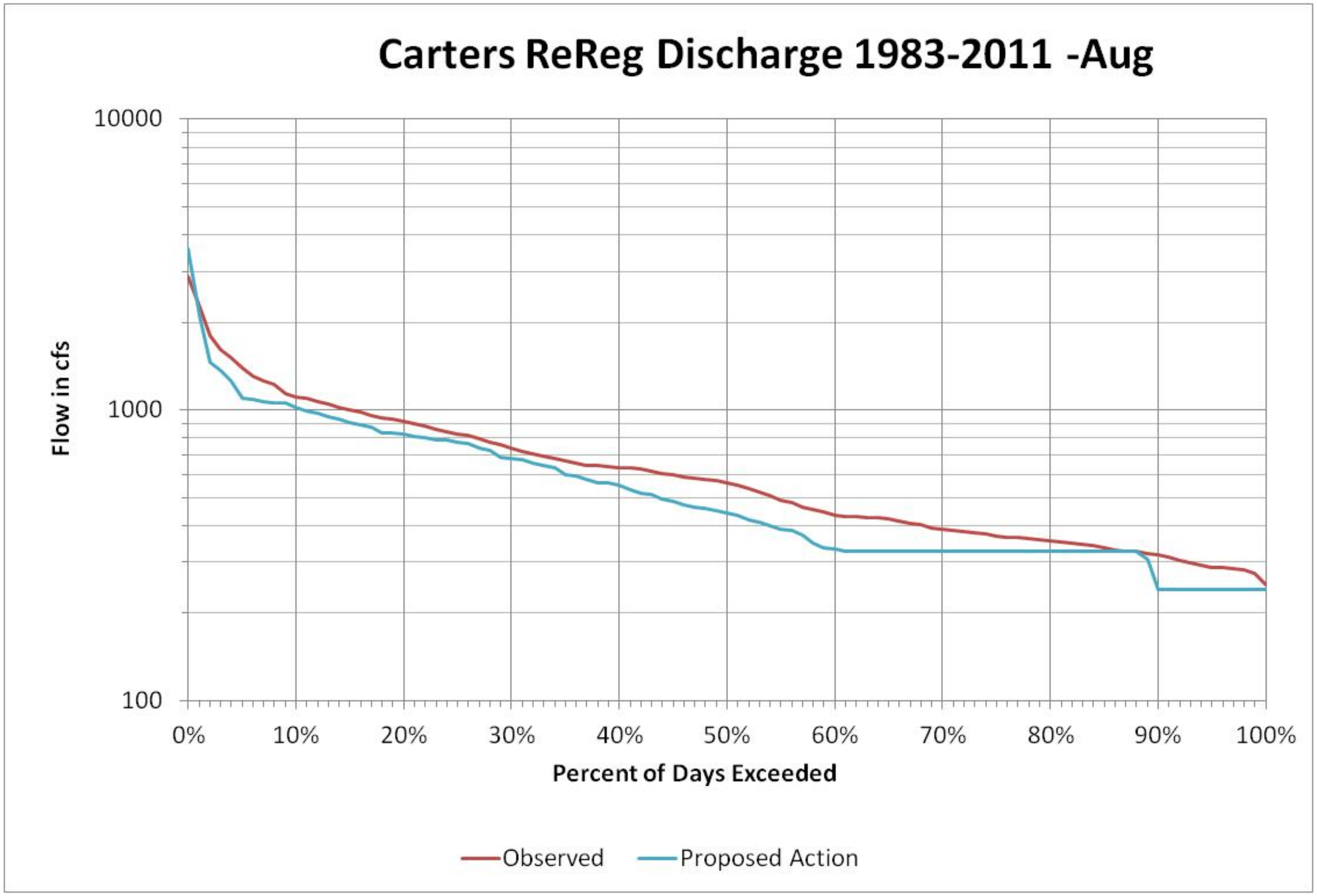


Figure 24. Comparison of Observed Data and Modeled Proposed Action for Average August Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

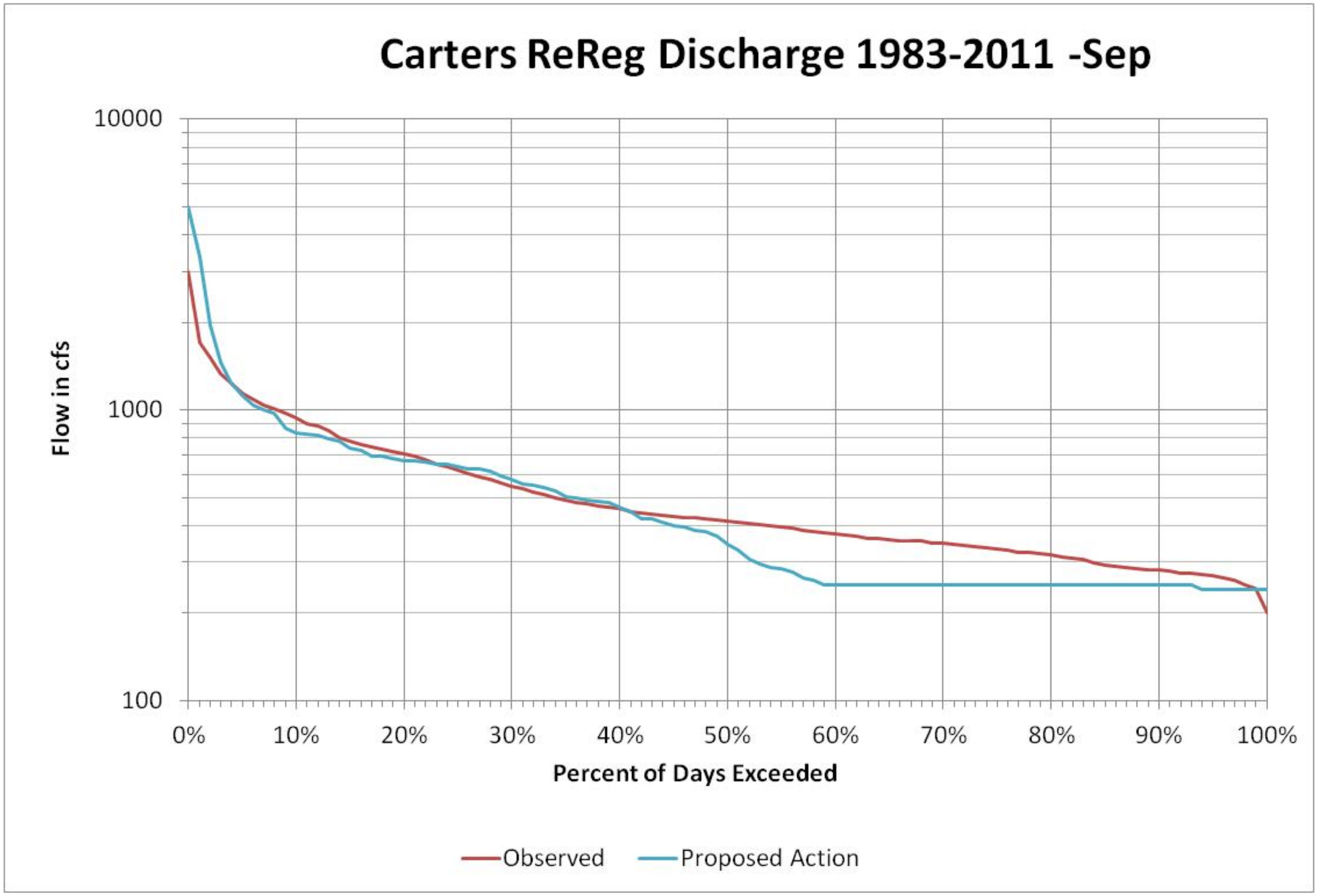


Figure 25. Comparison of Observed Data and Modeled Proposed Action for Average September Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

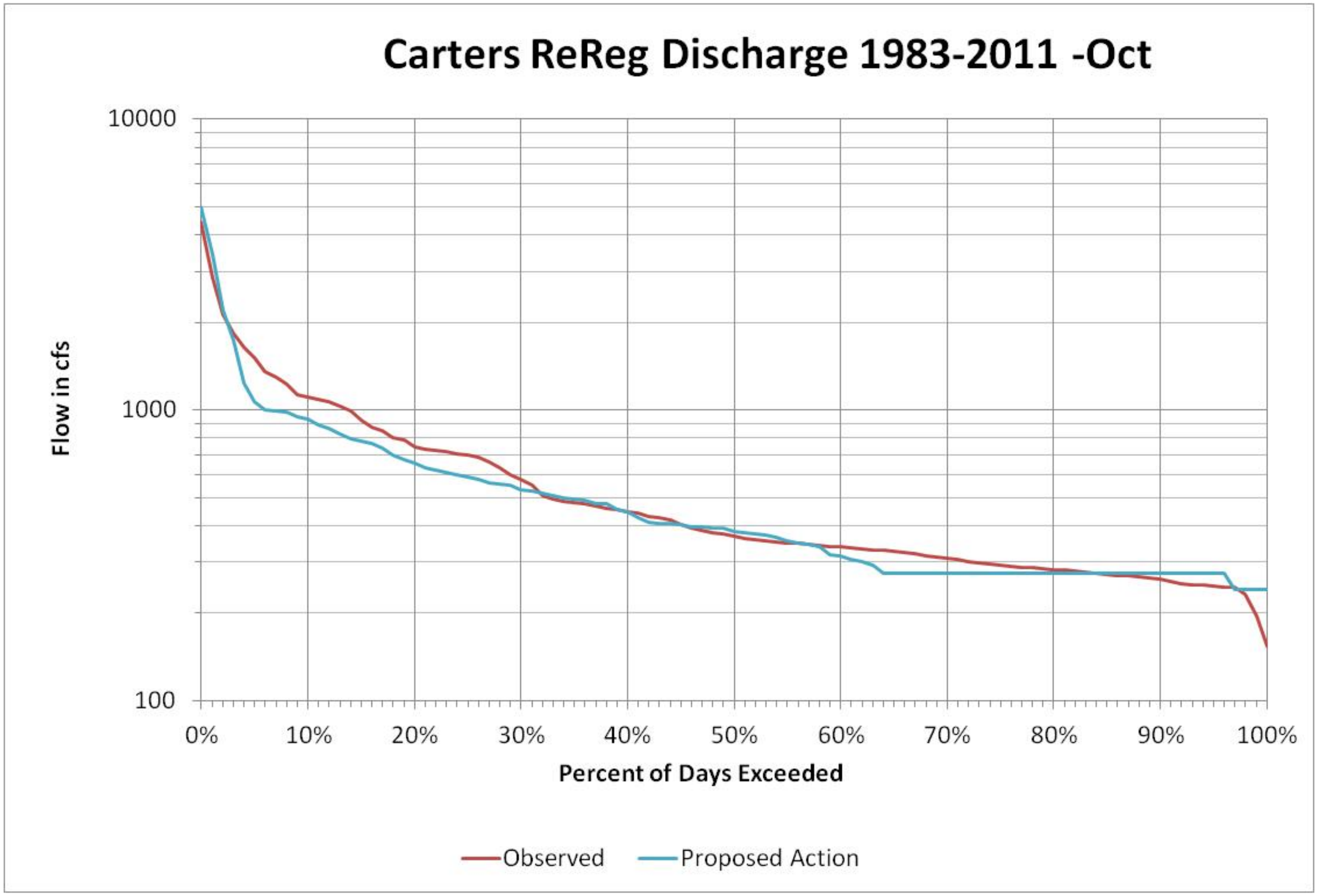


Figure 26. Comparison of Observed Data and Modeled Proposed Action for Average October Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

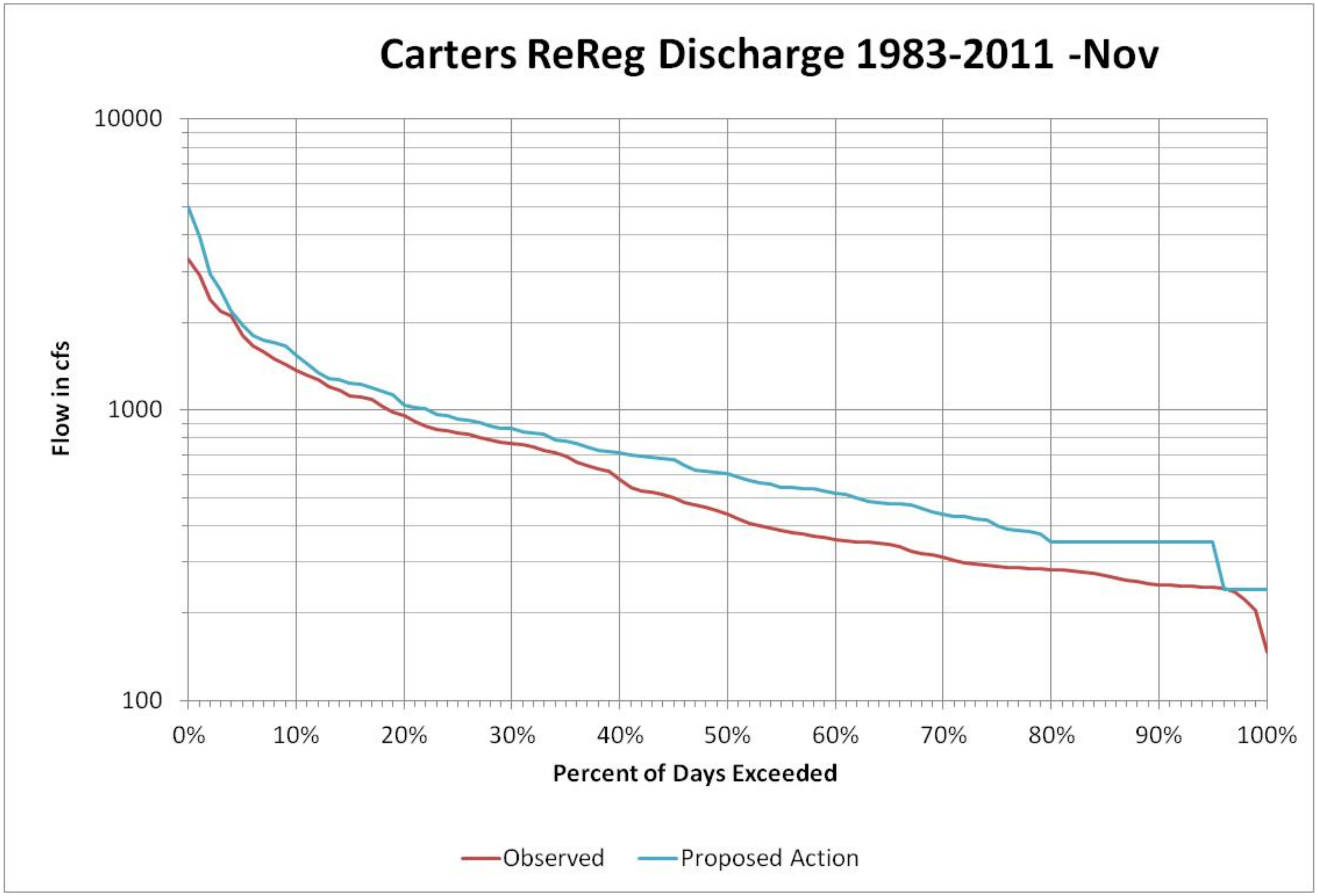


Figure 27. Comparison of Observed Data and Modeled Proposed Action for Average November Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

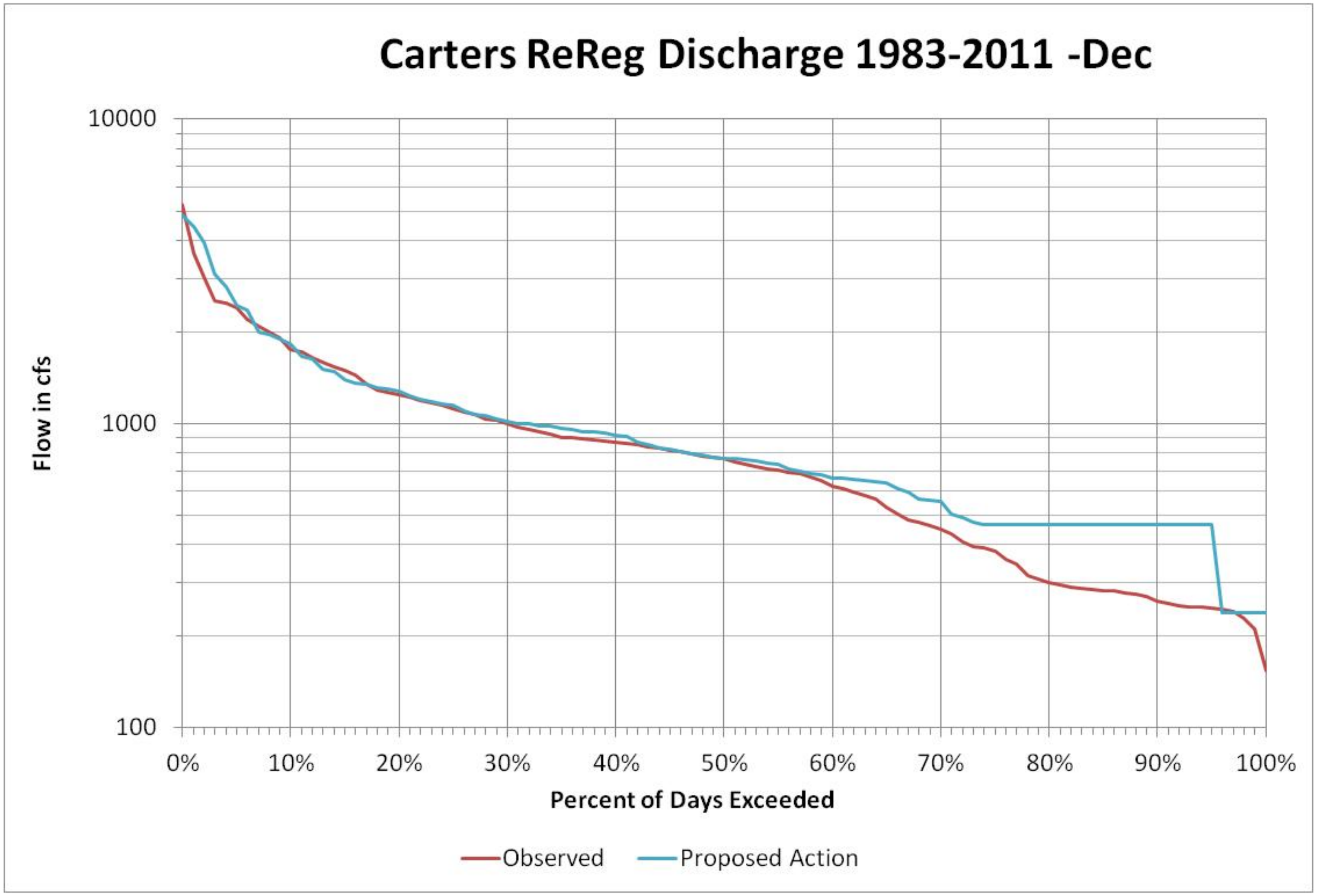


Figure 28. Comparison of Observed Data and Modeled Proposed Action for Average December Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

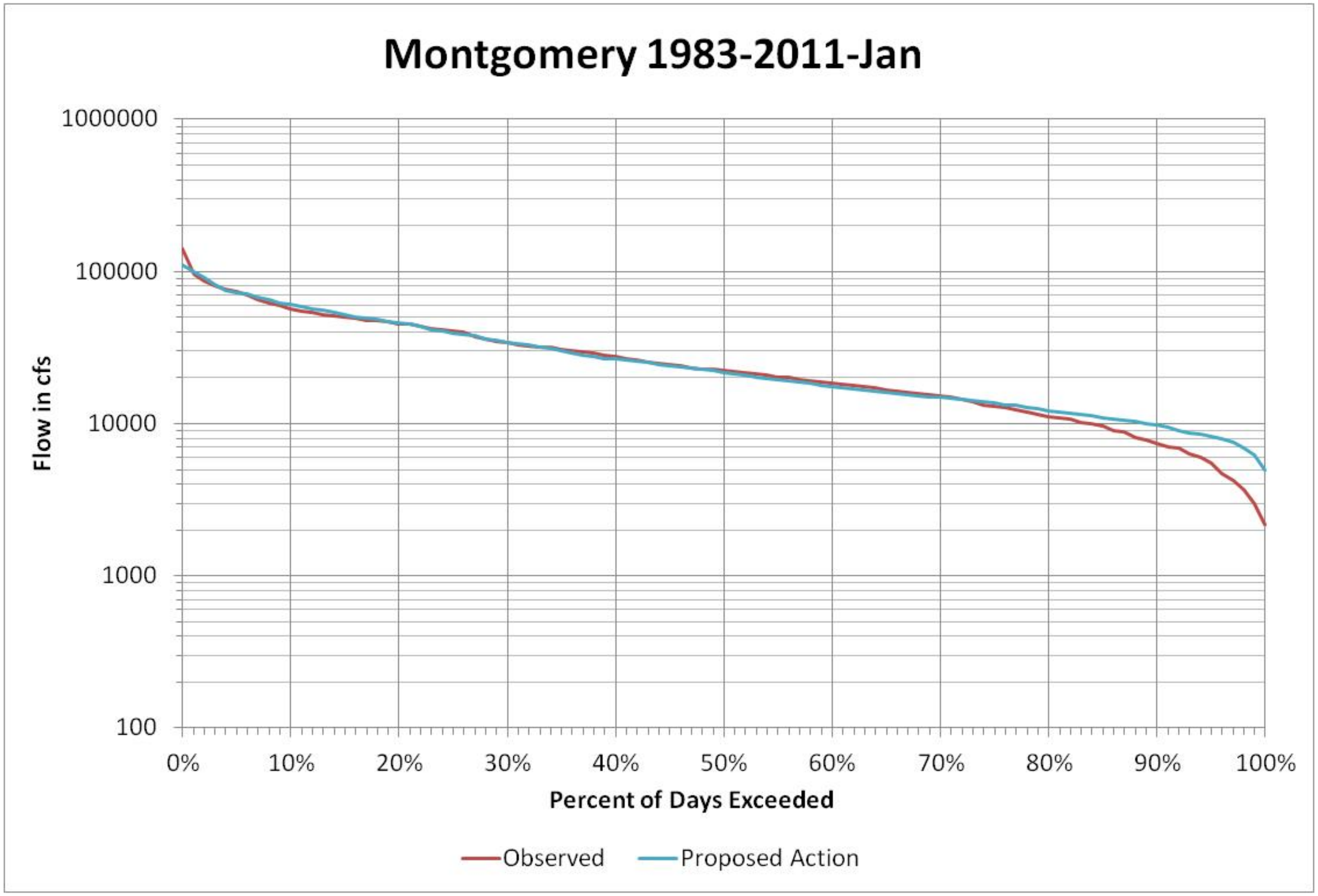


Figure 29. Comparison of Observed Data and Modeled Proposed Action for Average January Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

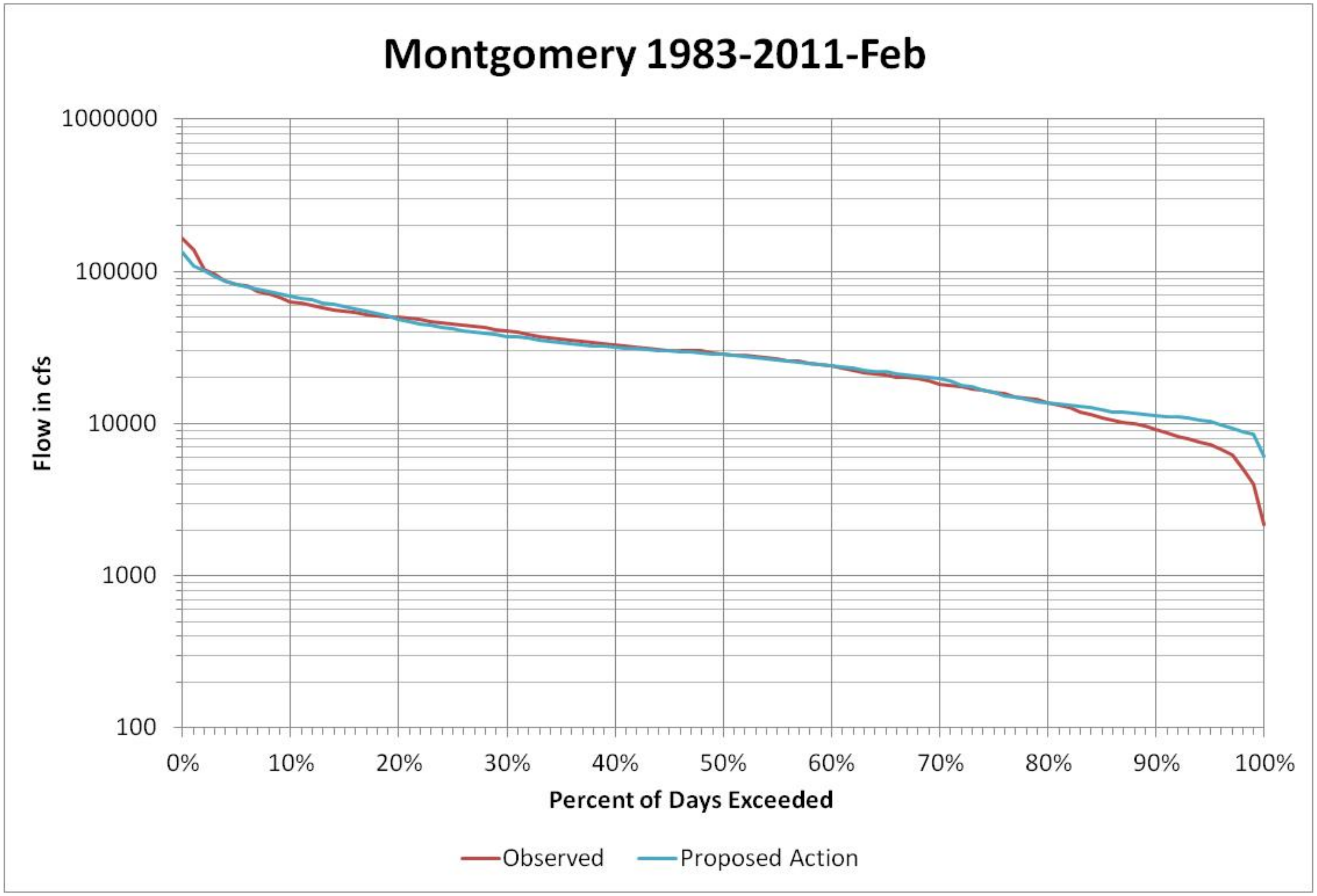


Figure 30. Comparison of Observed Data and Modeled Proposed Action for Average February Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

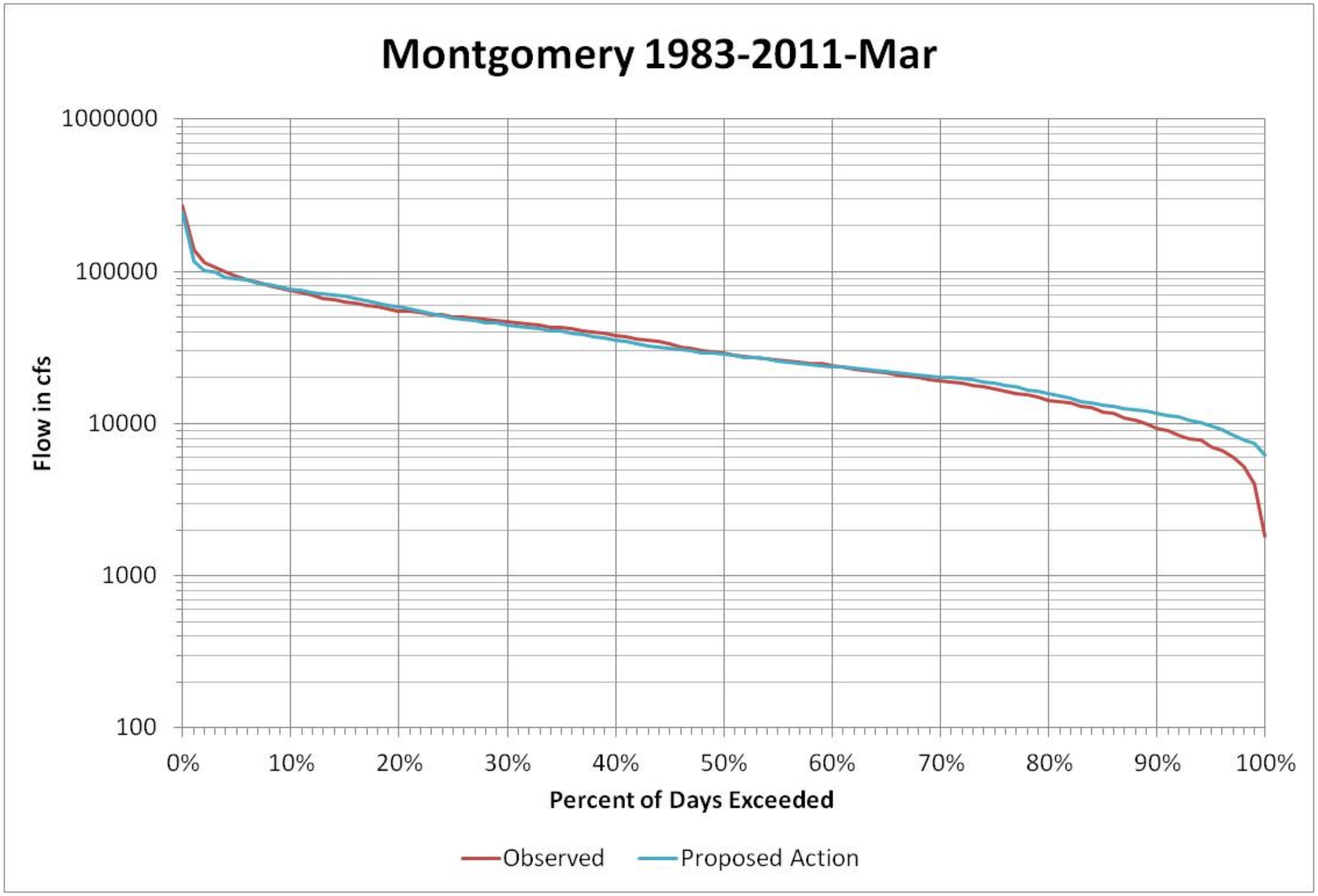


Figure 31. Comparison of Observed Data and Modeled Proposed Action for Average March Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

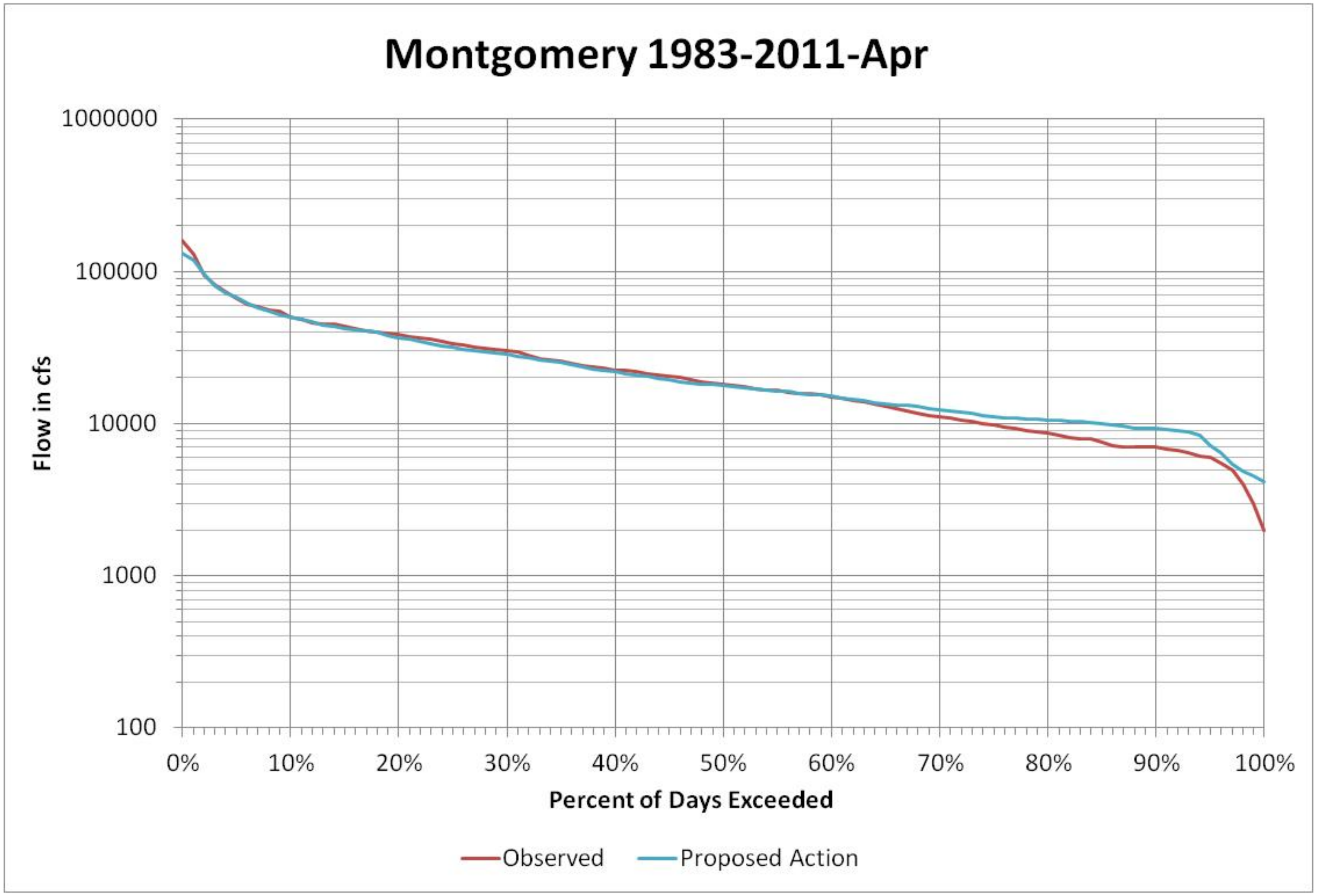


Figure 32. Comparison of Observed Data and Modeled Proposed Action for Average April Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

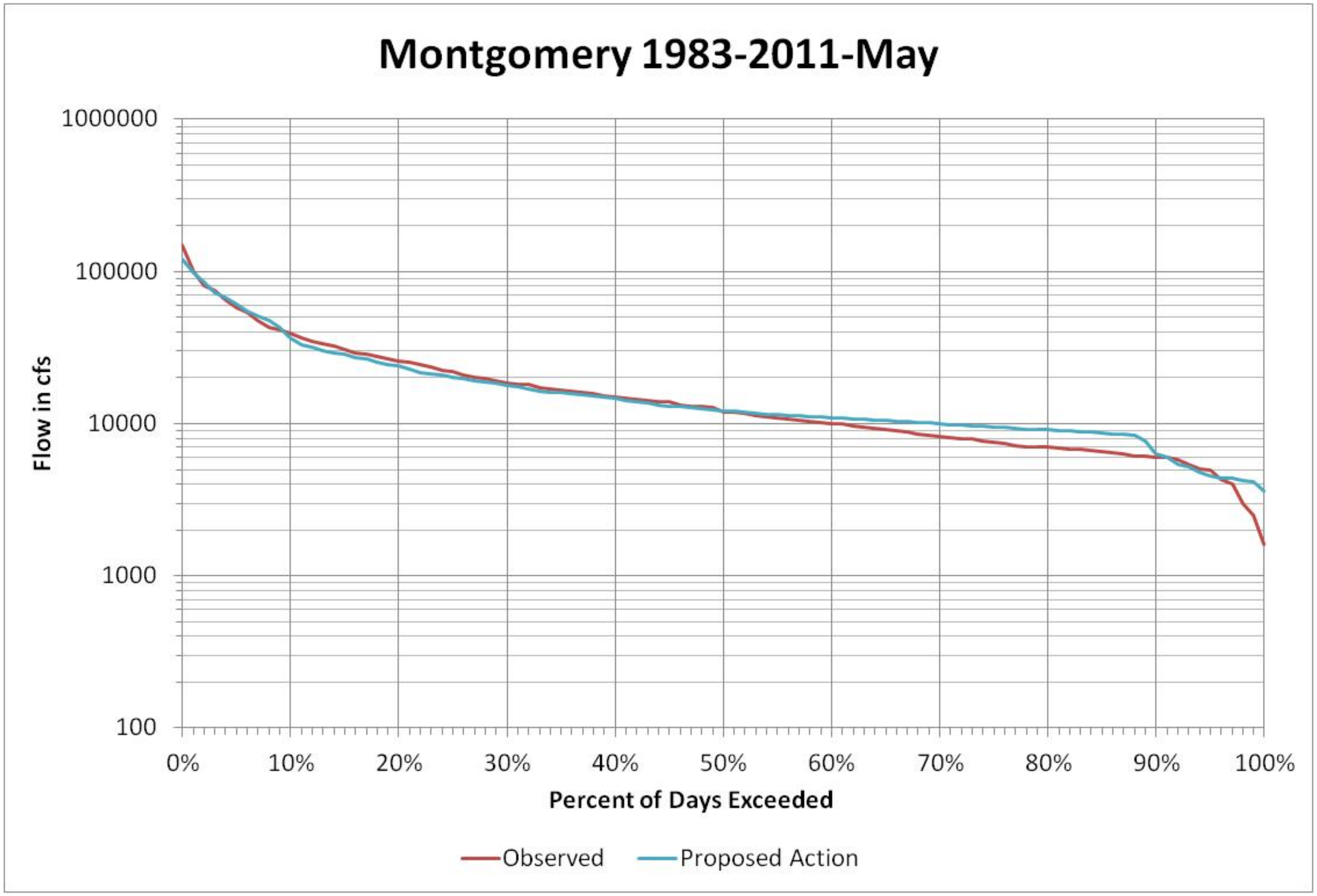


Figure 33. Comparison of Observed Data and Modeled Proposed Action for Average May Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

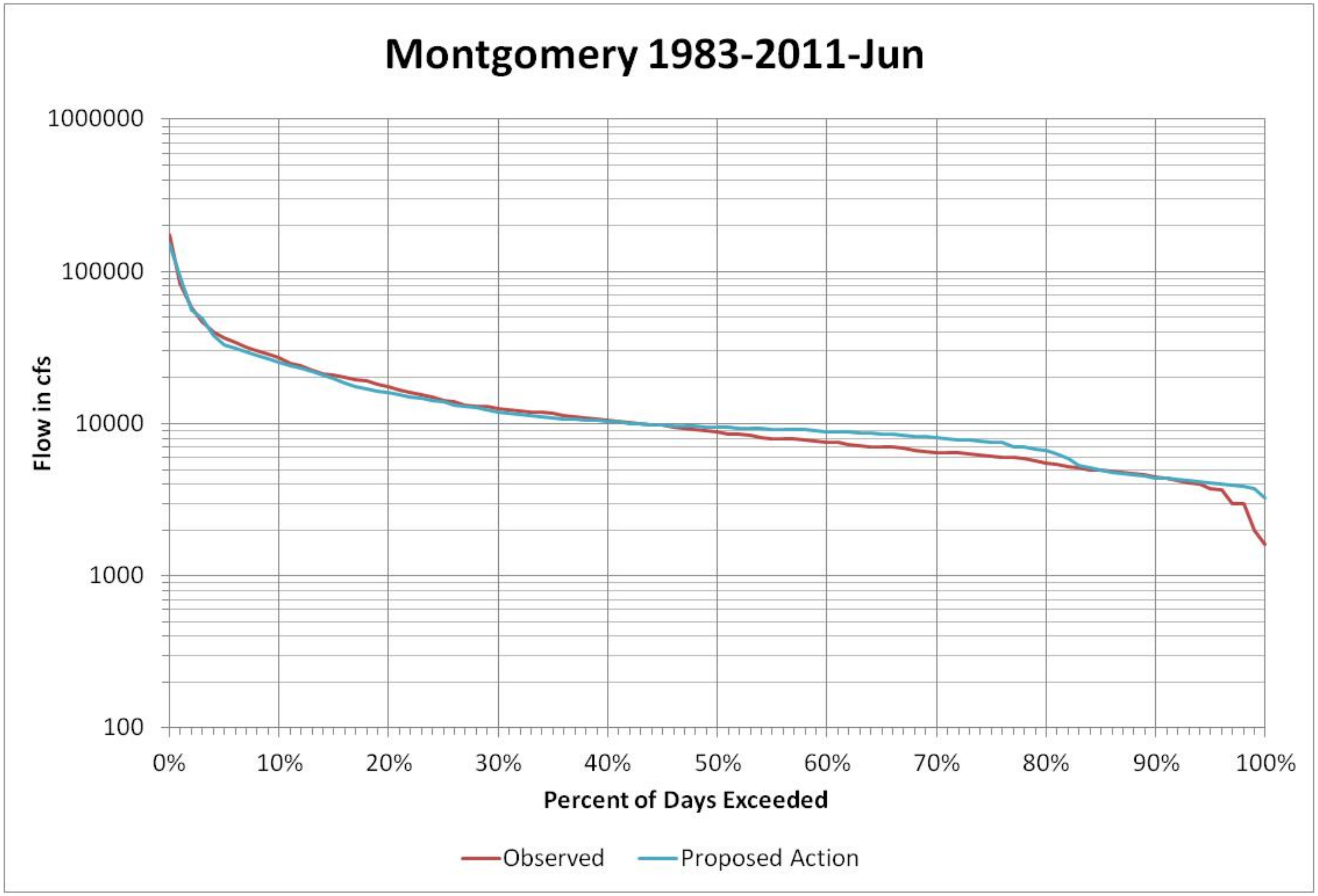


Figure 34. Comparison of Observed Data and Modeled Proposed Action for Average June Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

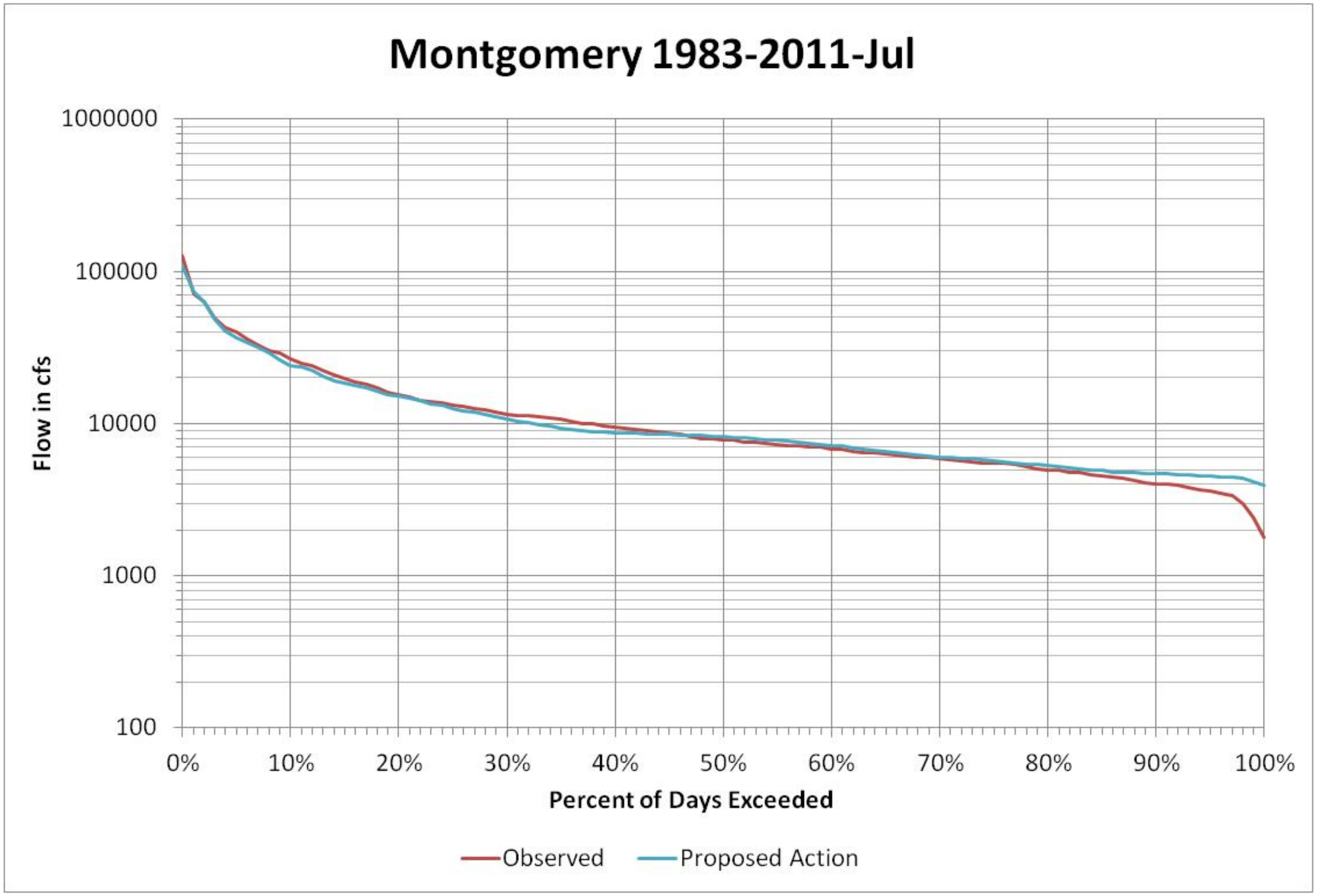


Figure 35. Comparison of Observed Data and Modeled Proposed Action for Average July Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

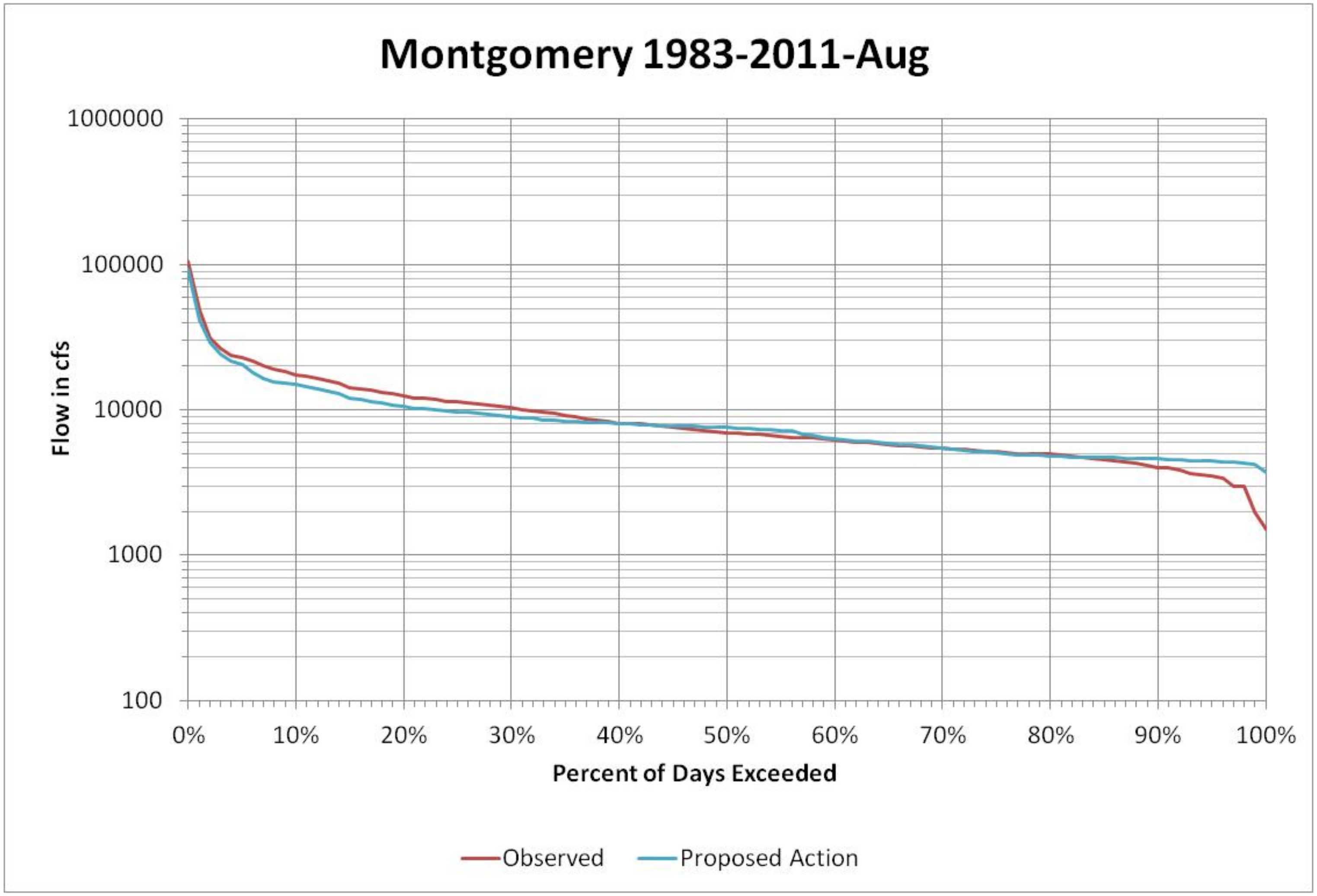


Figure 36. Comparison of Observed Data and Modeled Proposed Action for Average August Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

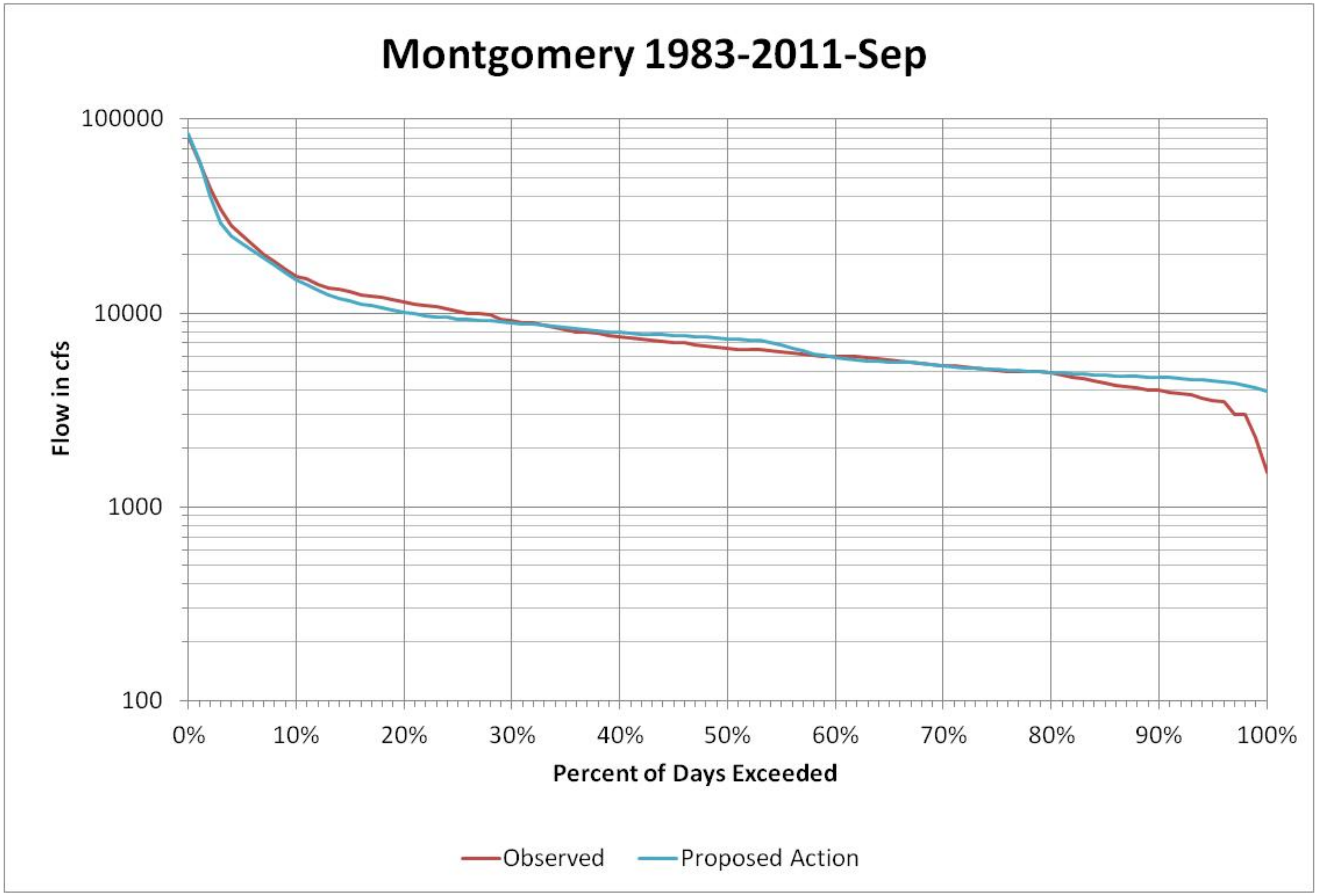


Figure 37. Comparison of Observed Data and Modeled Proposed Action for Average September Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

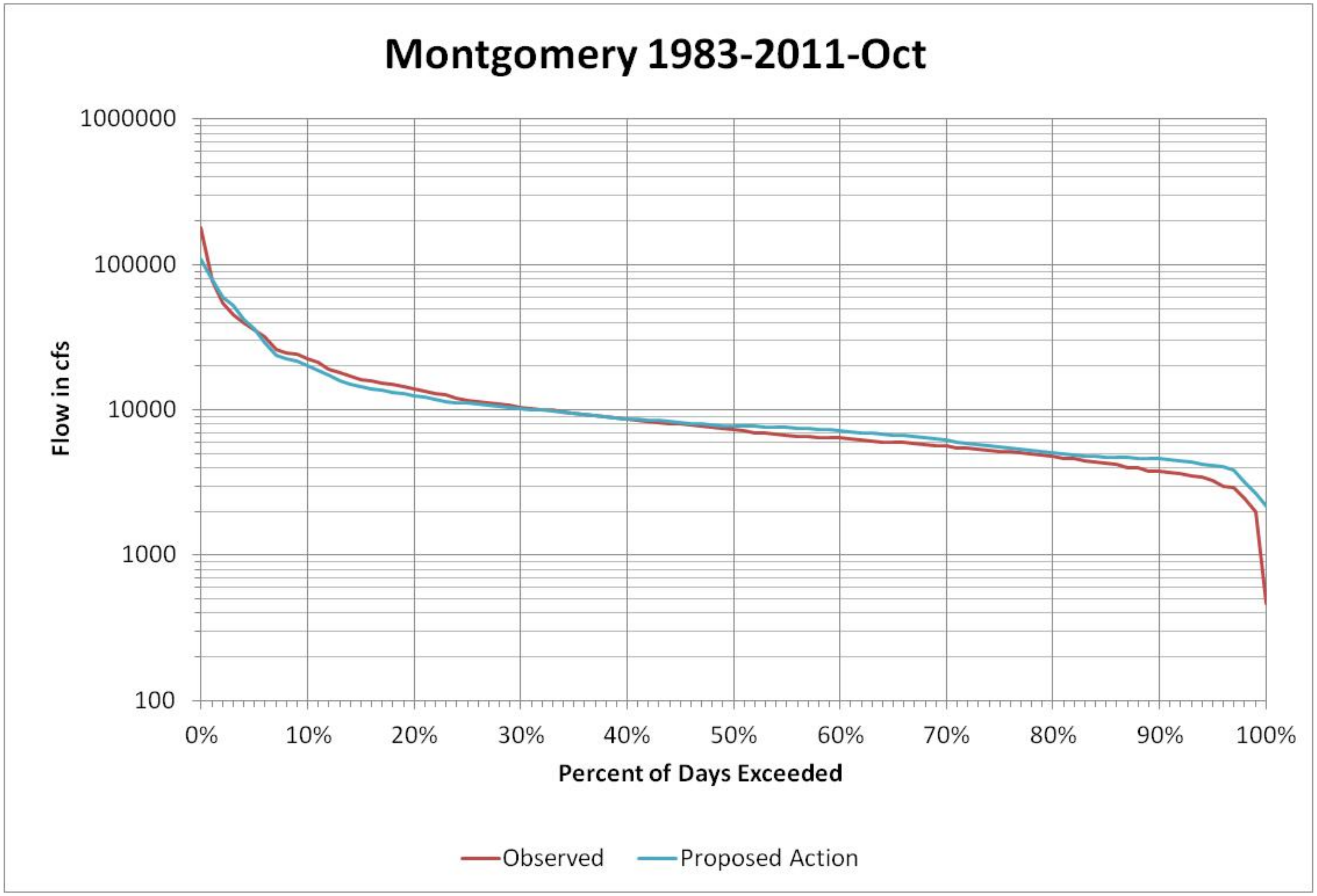


Figure 38. Comparison of Observed Data and Modeled Proposed Action for Average October Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

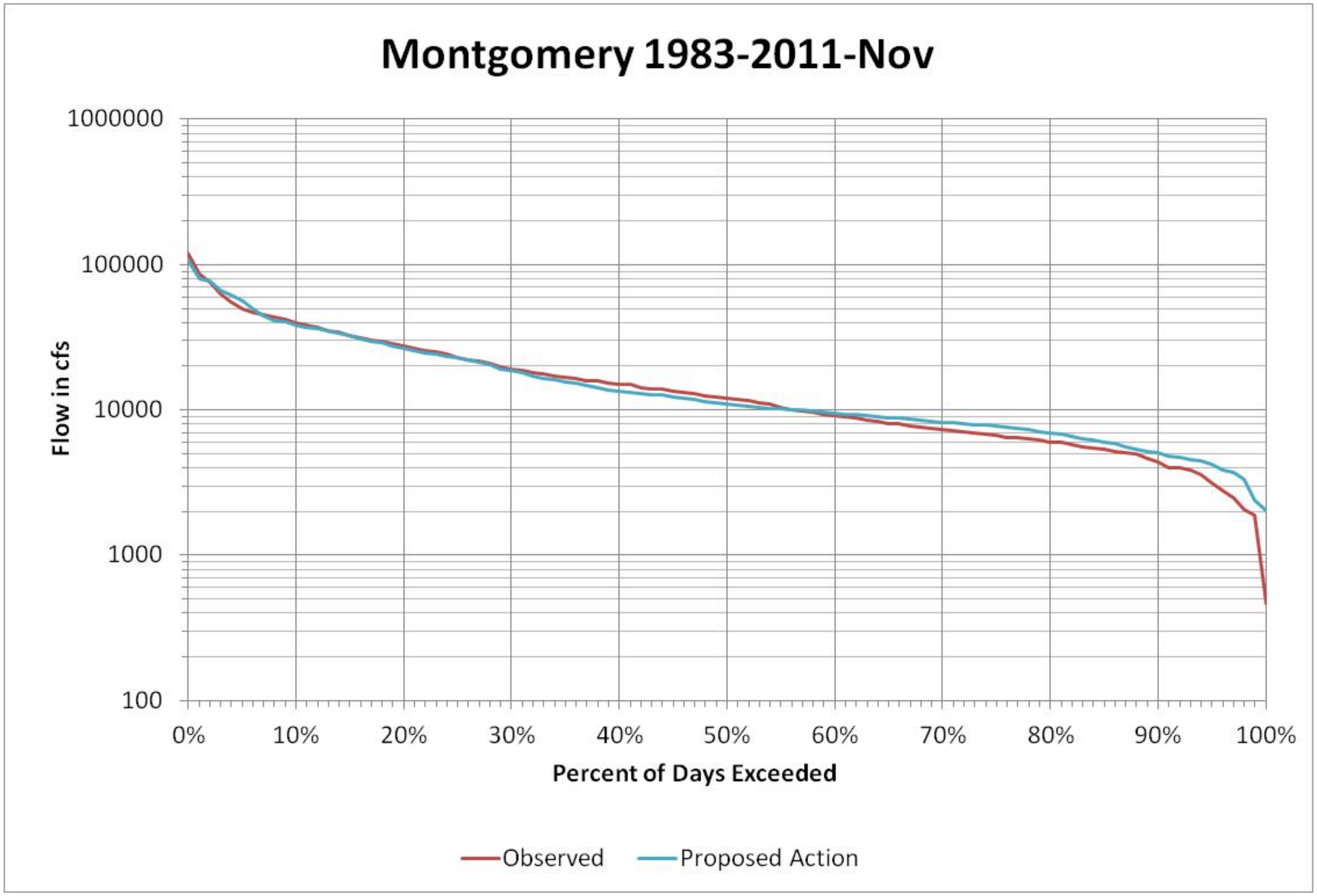


Figure 39. Comparison of Observed Data and Modeled Proposed Action for Average November Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

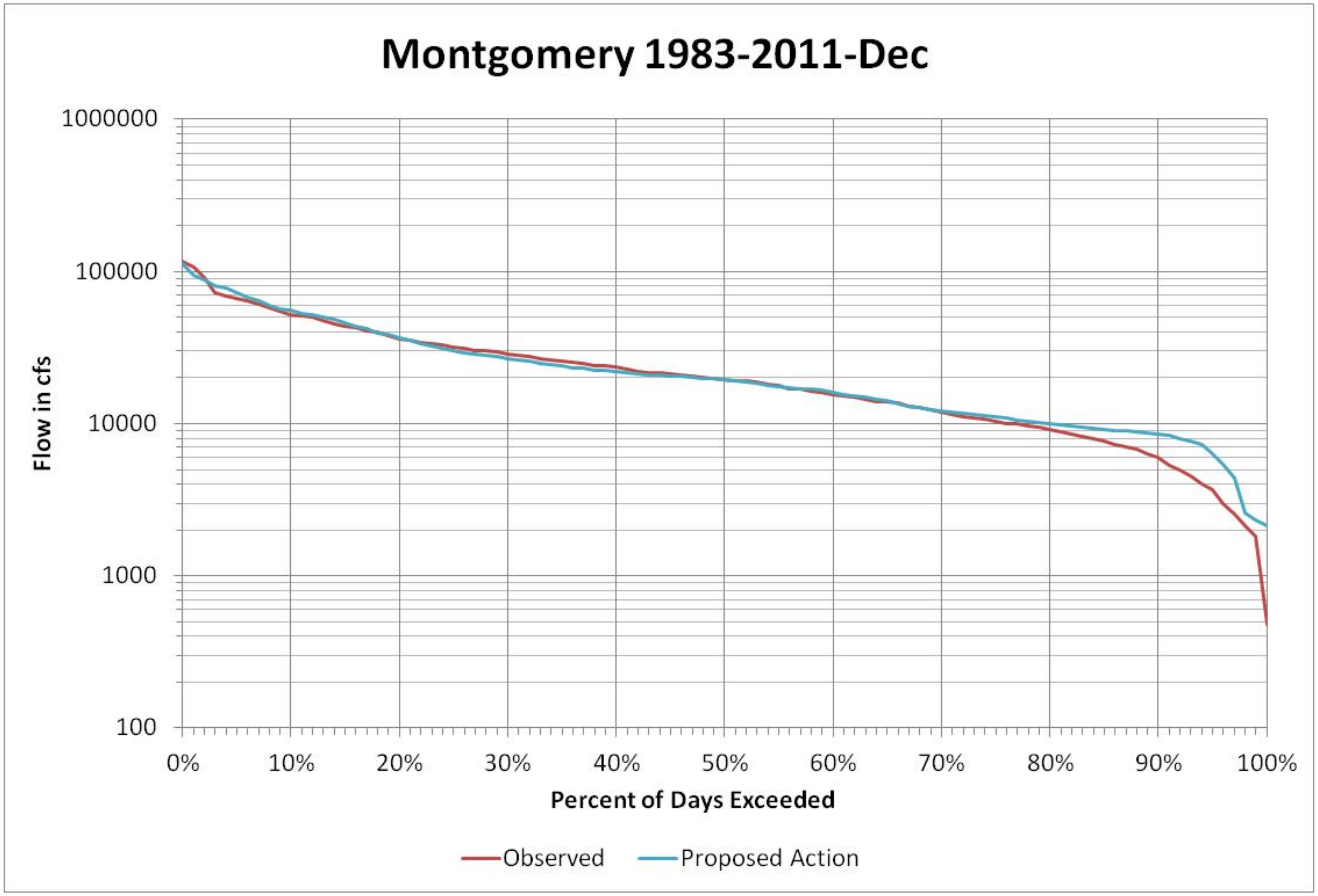


Figure 40. Comparison of Observed Data and Modeled Proposed Action for Average December Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

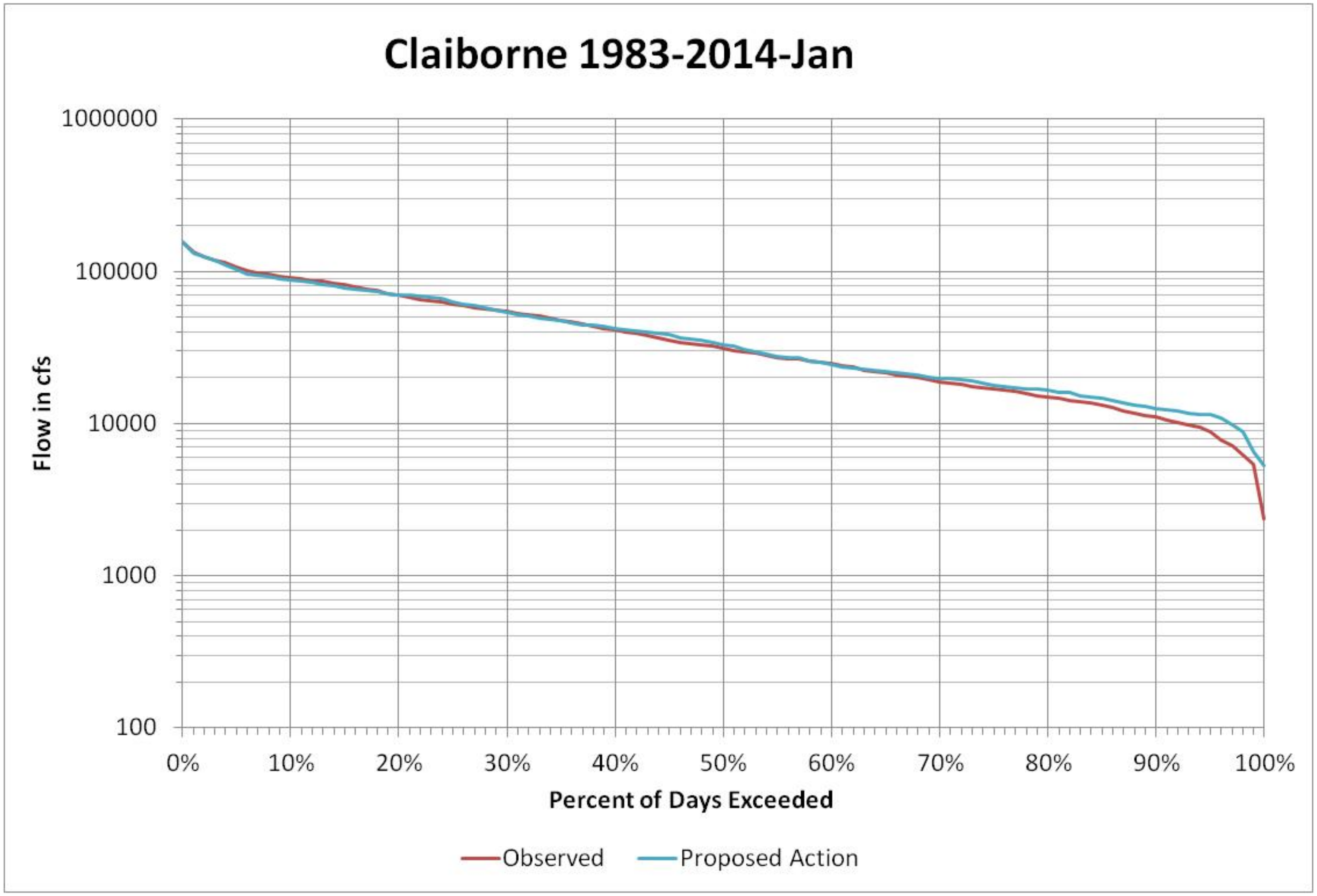


Figure 41. Comparison of Observed Data and Modeled Proposed Action for Average January Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

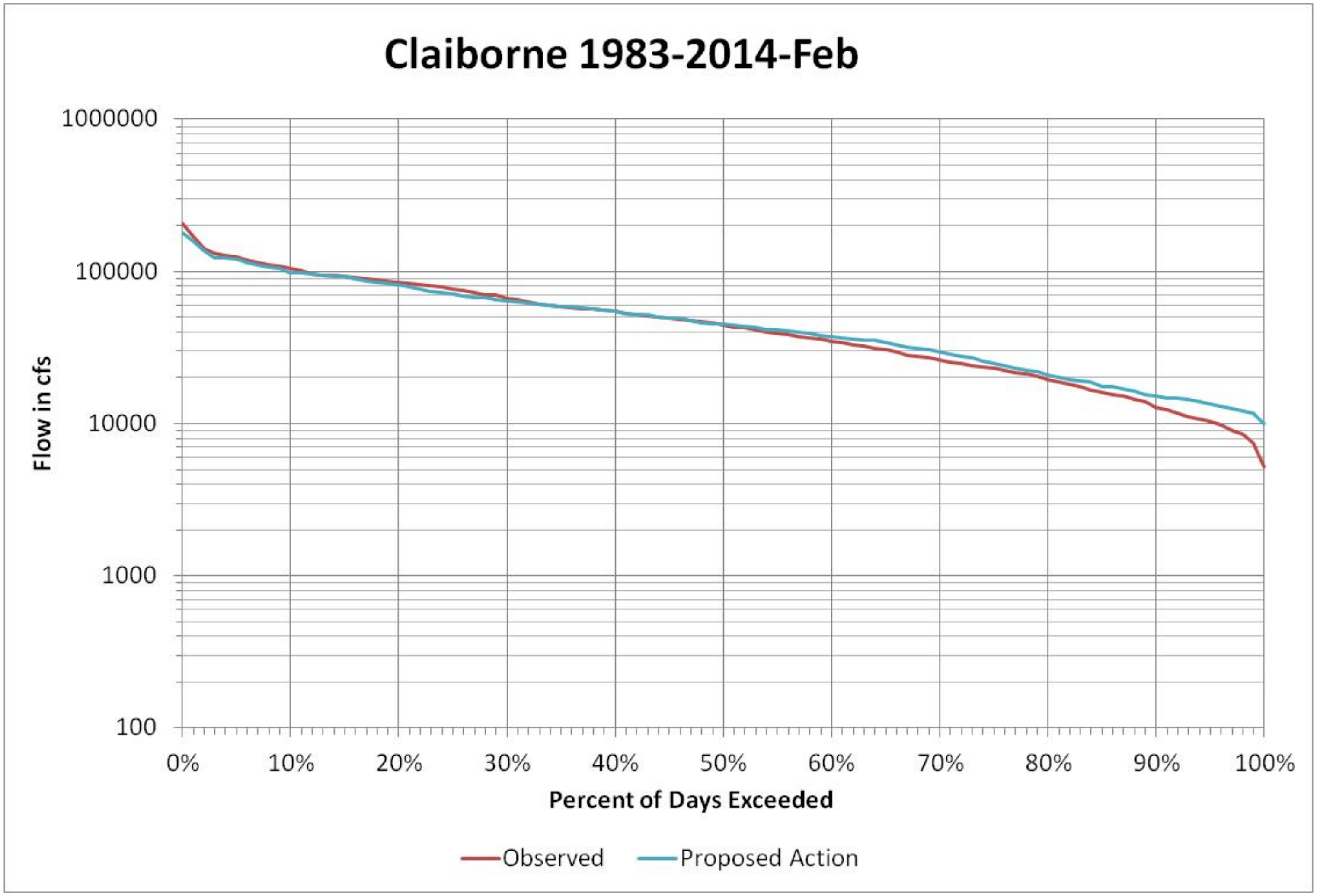


Figure 42. Comparison of Observed Data and Modeled Proposed Action for Average February Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

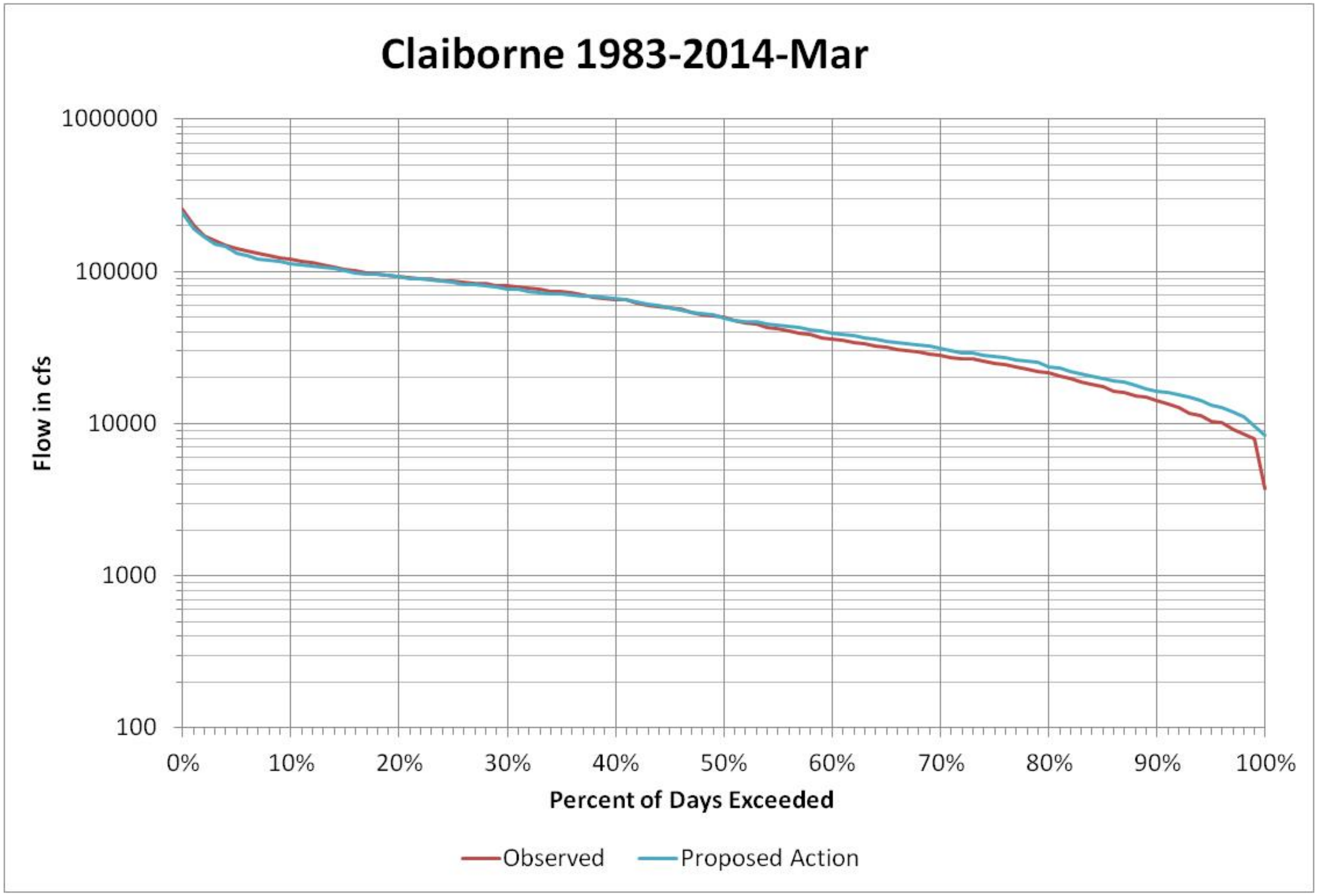


Figure 43. Comparison of Observed Data and Modeled Proposed Action for Average March Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

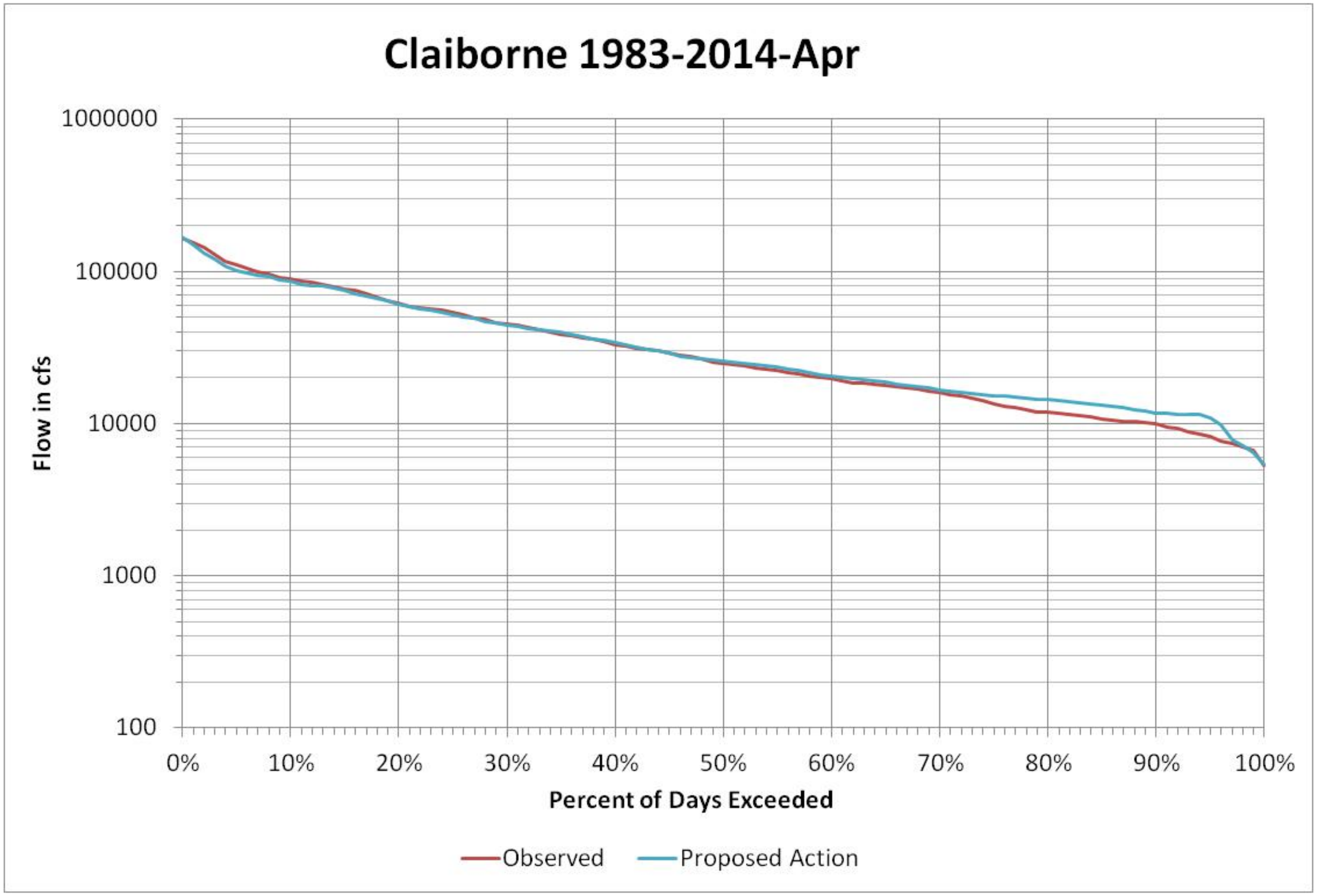


Figure 44. Comparison of Observed Data and Modeled Proposed Action for Average April Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

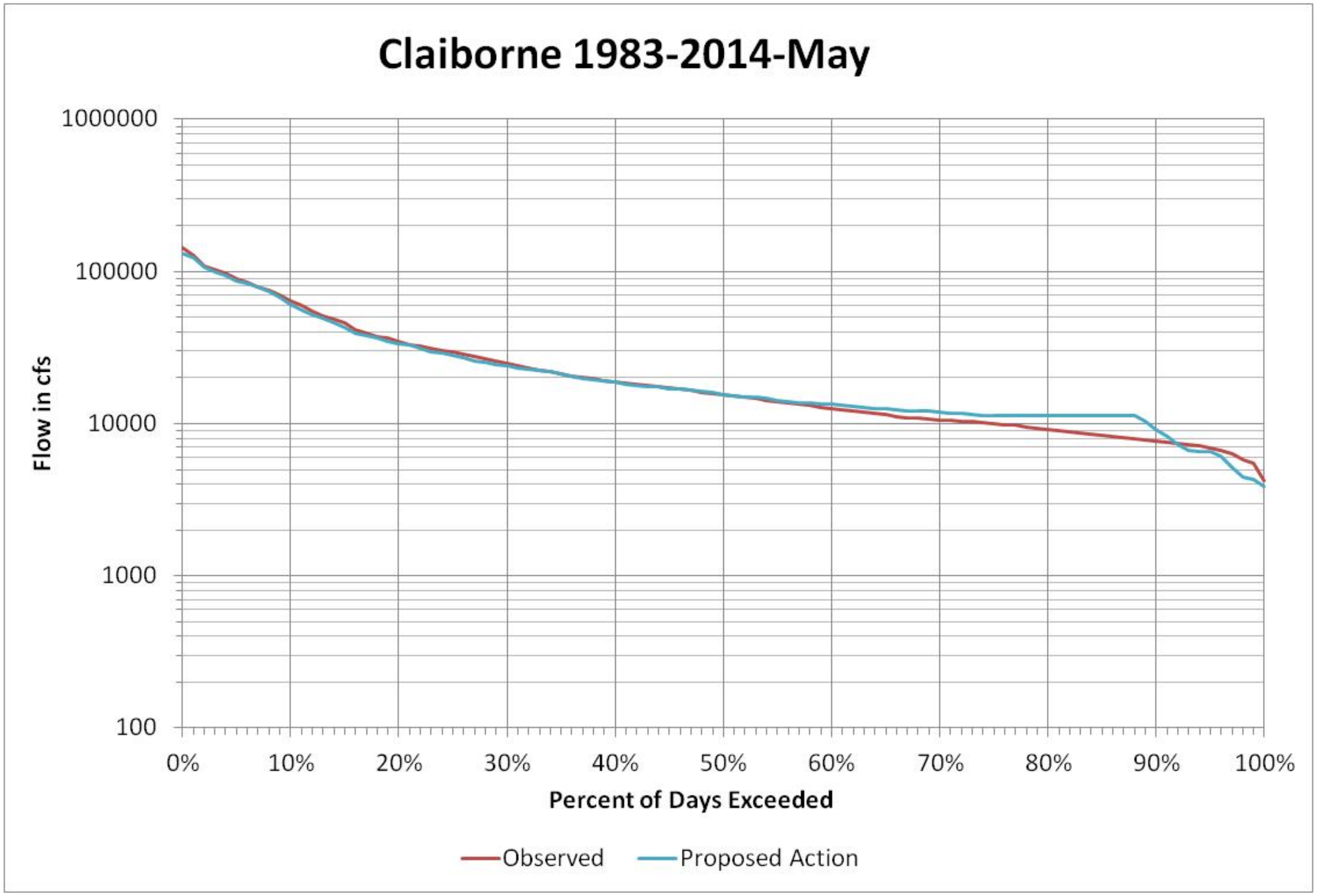


Figure 45. Comparison of Observed Data and Modeled Proposed Action for Average May Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

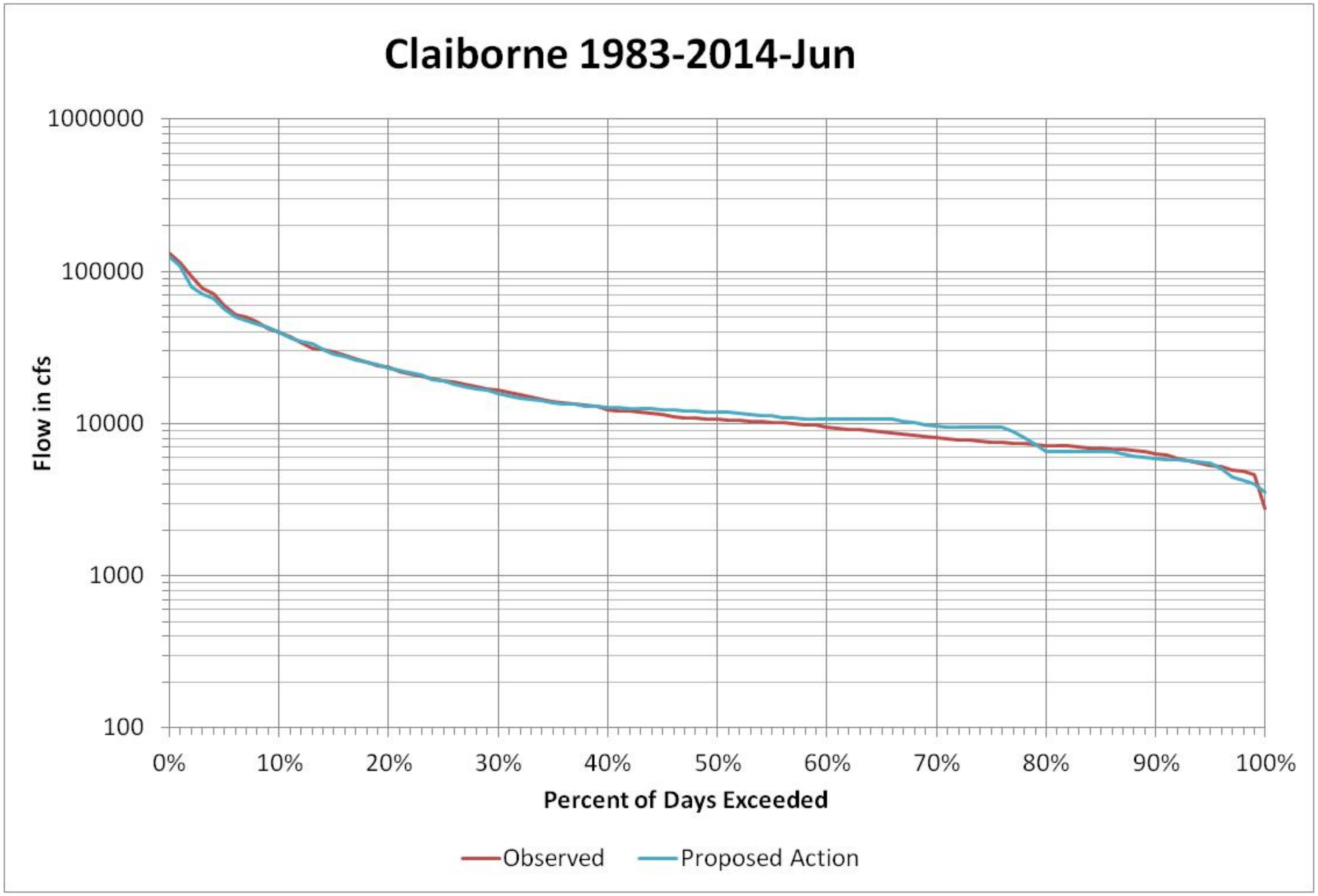


Figure 46. Comparison of Observed Data and Modeled Proposed Action for Average June Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

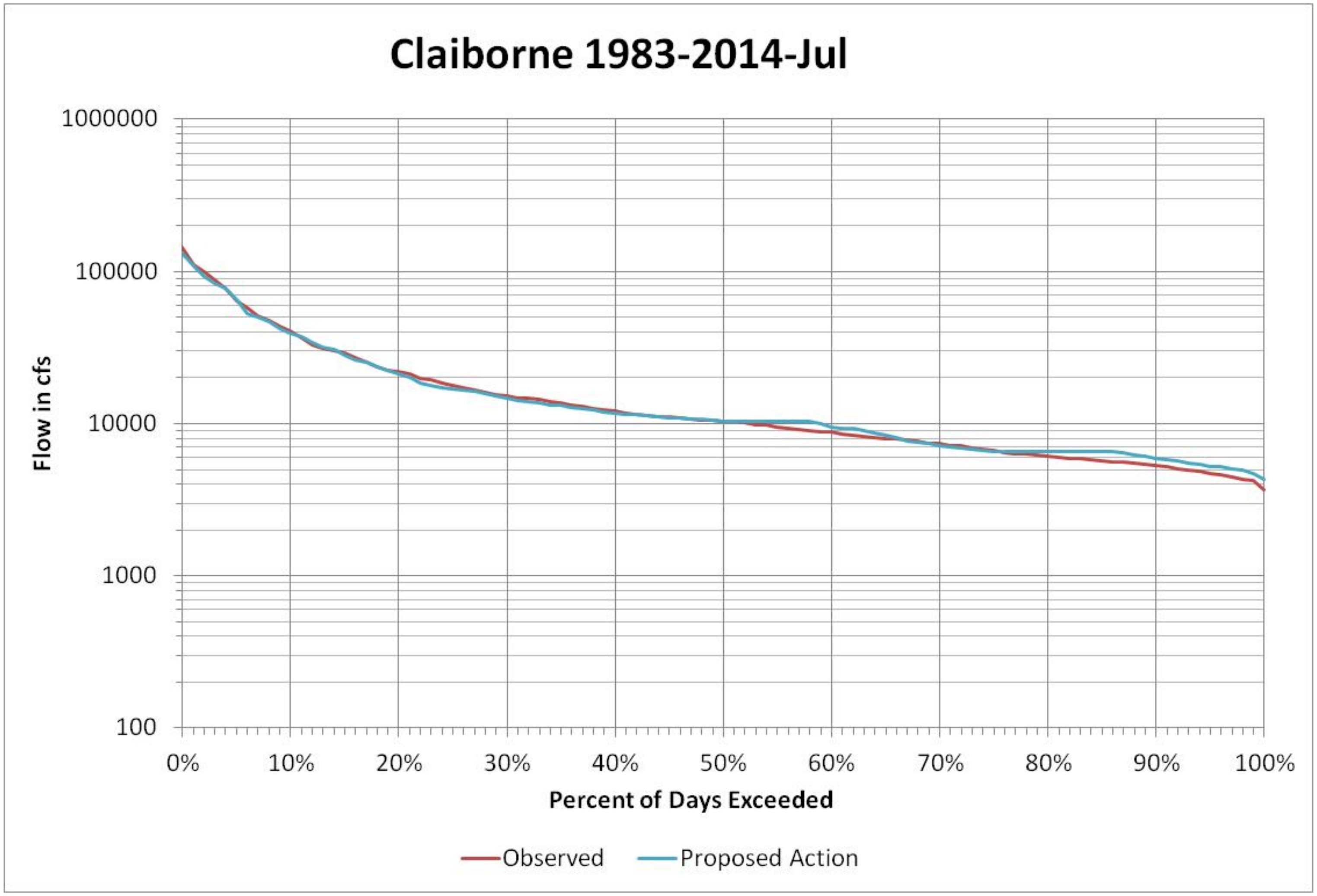


Figure 47. Comparison of Observed Data and Modeled Proposed Action for Average July Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

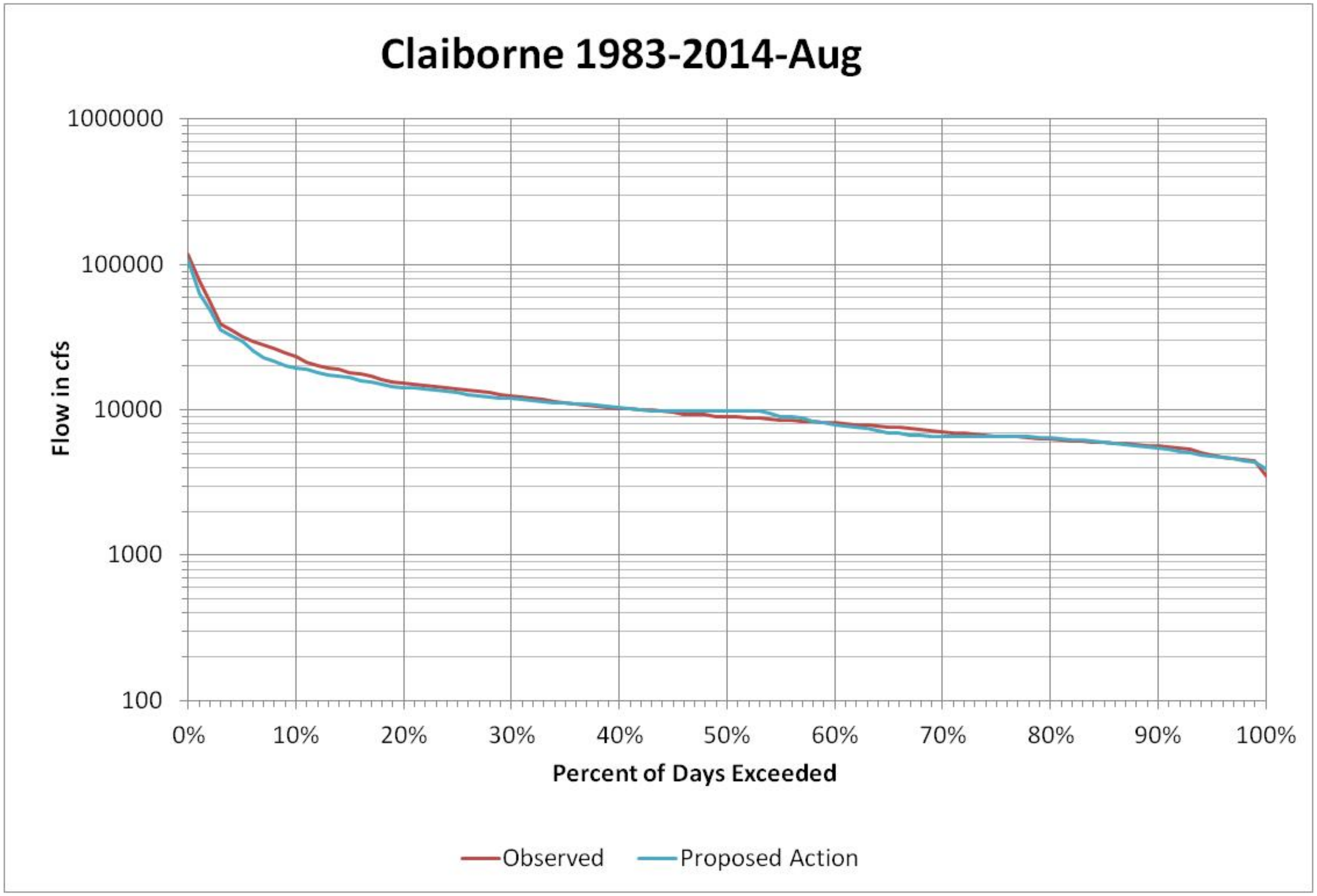


Figure 48. Comparison of Observed Data and Modeled Proposed Action for Average August Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

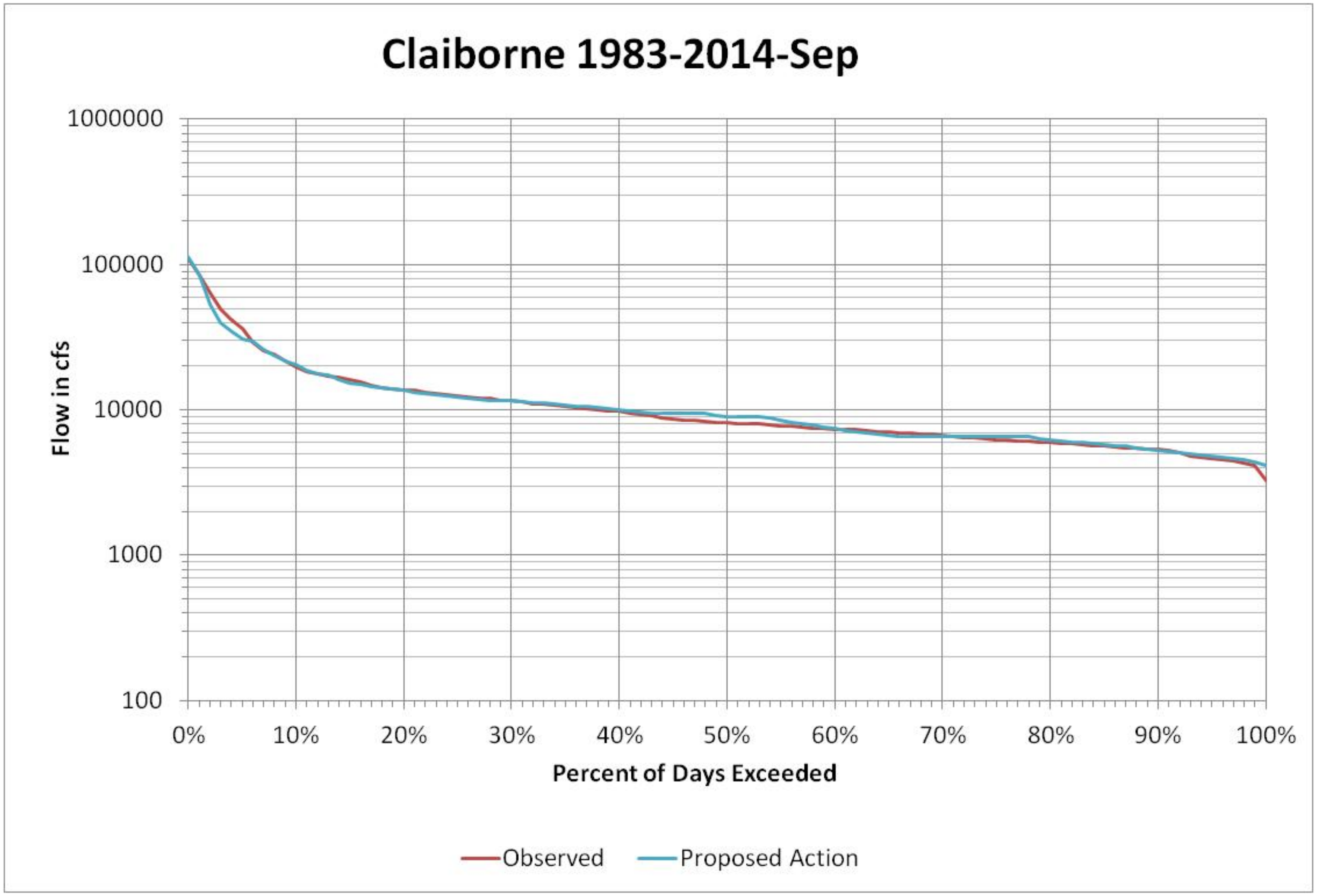


Figure 49. Comparison of Observed Data and Modeled Proposed Action for Average September Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

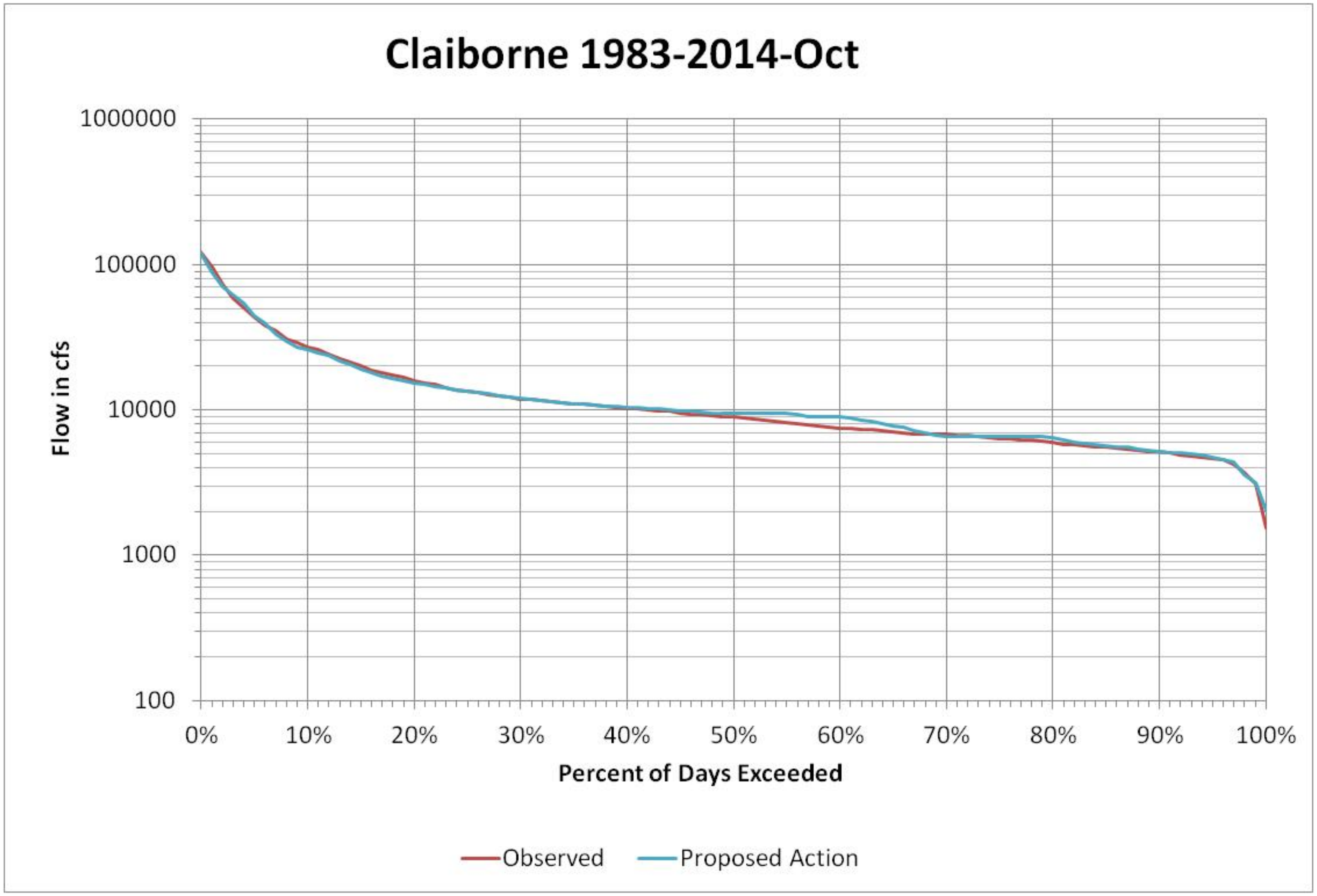


Figure 50. Comparison of Observed Data and Modeled Proposed Action for Average October Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

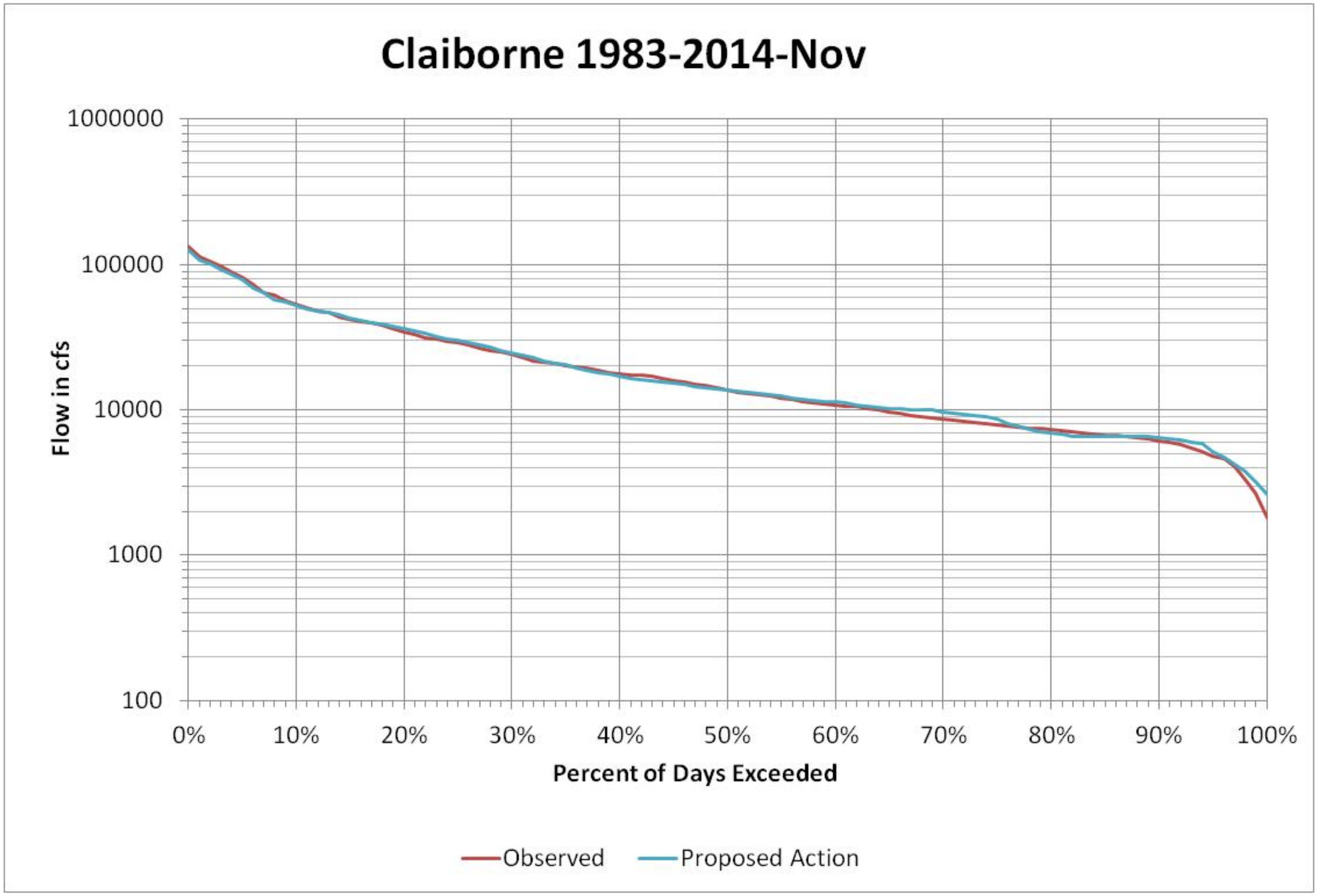


Figure 51. Comparison of Observed Data and Modeled Proposed Action for Average November Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

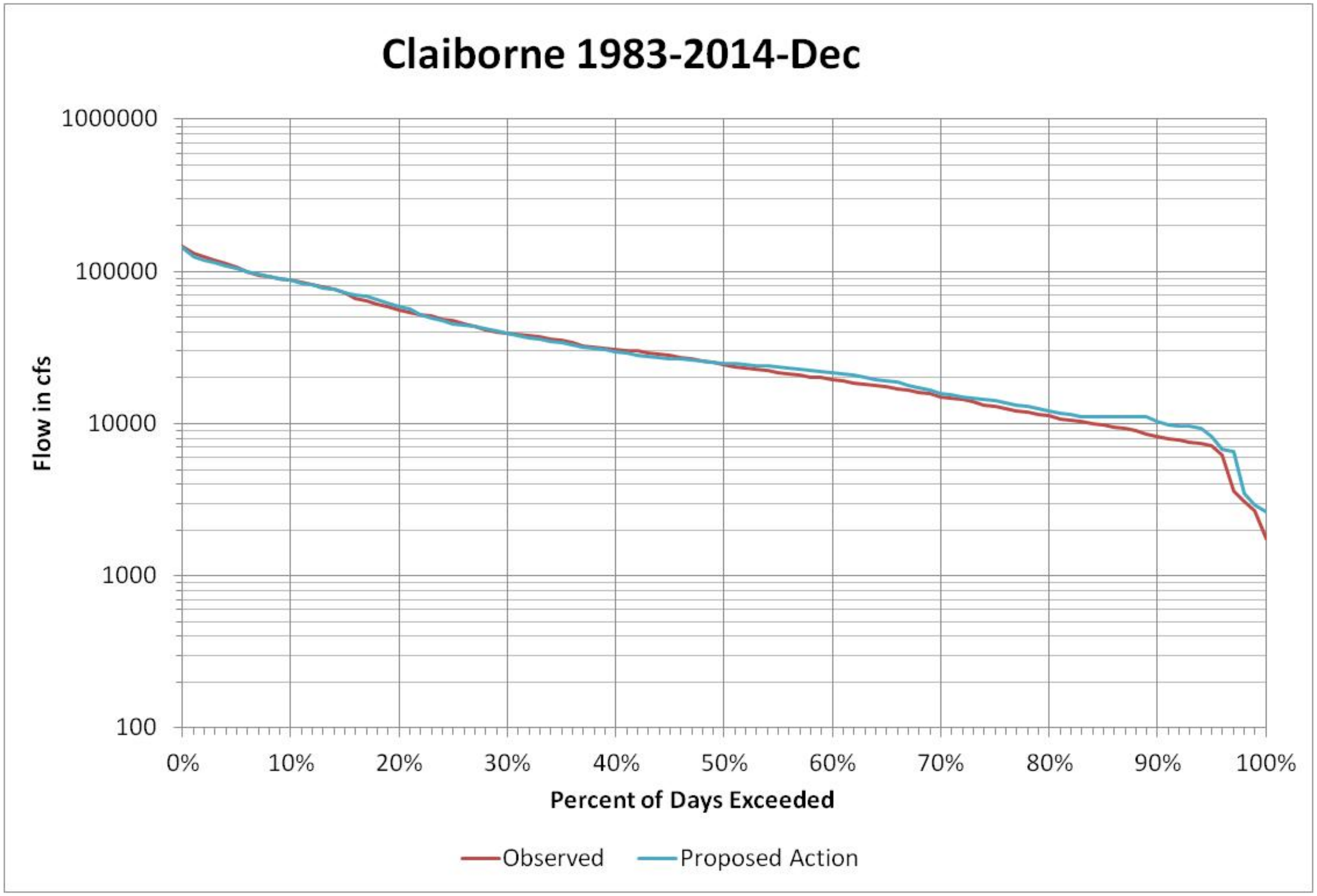


Figure 52. Comparison of Observed Data and Modeled Proposed Action for Average December Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

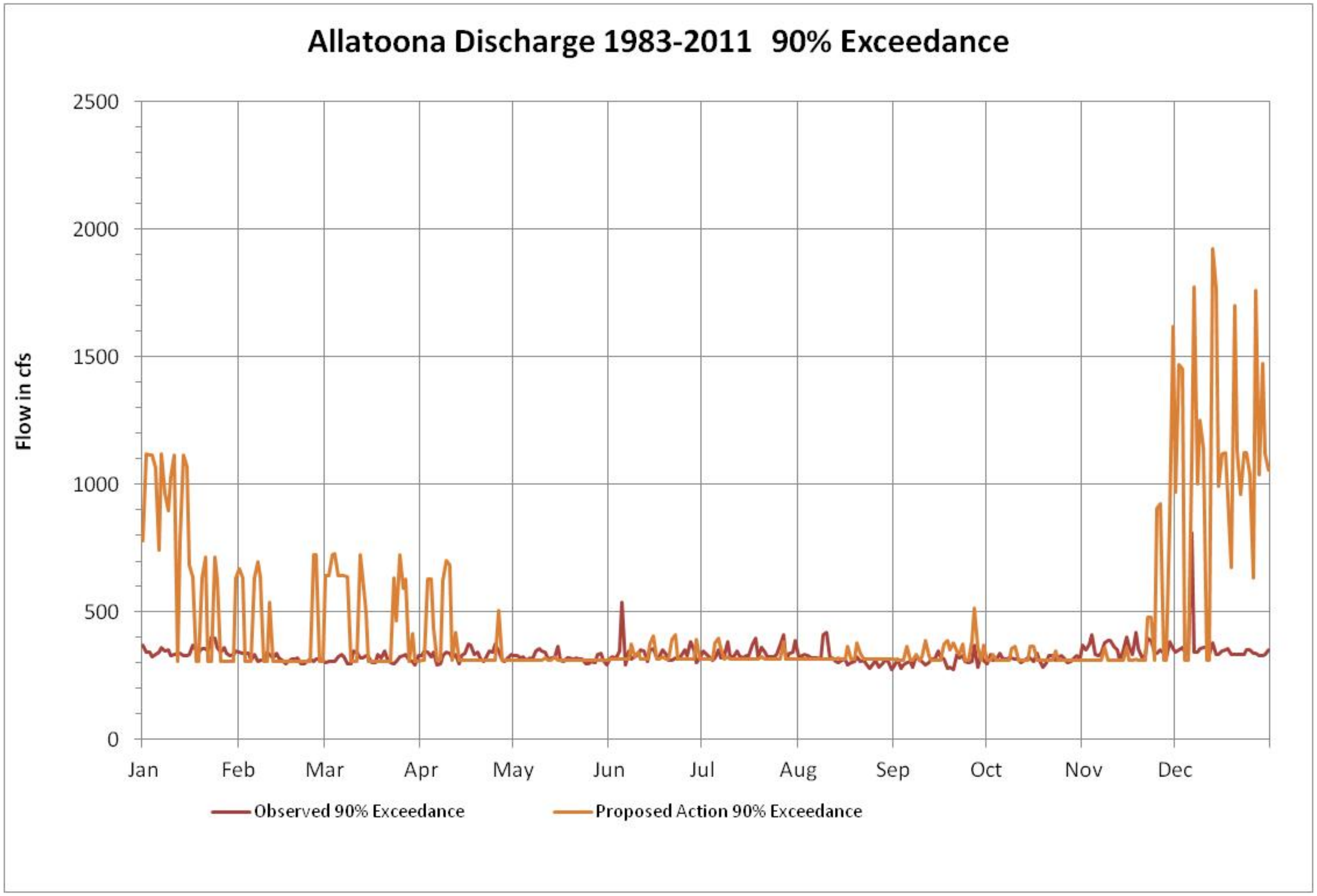


Figure 53. Comparison of Observed Data and Modeled Proposed Action for 90% Exceedance Flow at the Allatoona Dam Tailrace , years 1983-2011.

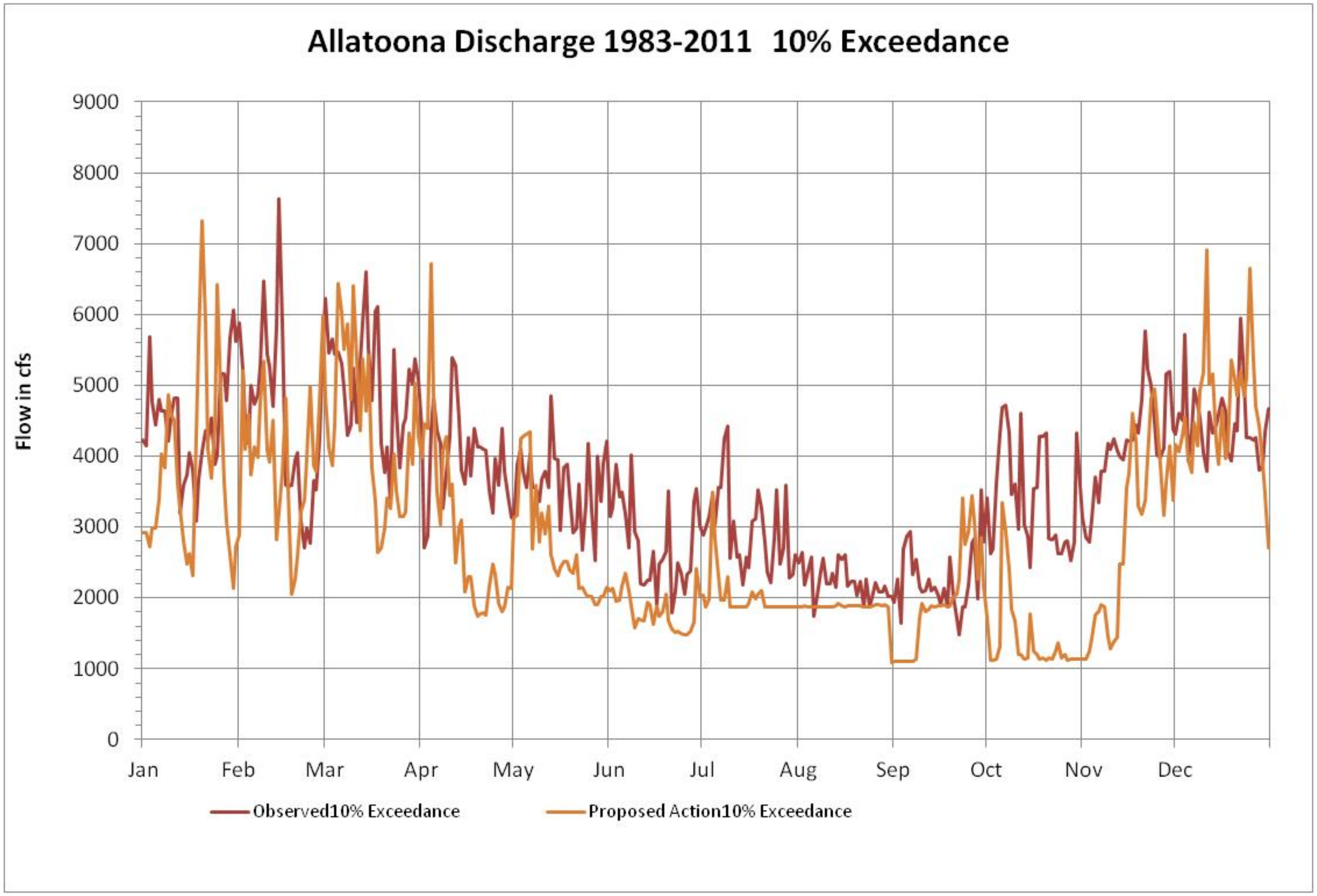


Figure 54. Comparison of Observed Data and Modeled Proposed Action for 10% Exceedance Flow at the Allatoona Dam Tailrace , years 1983-2011.

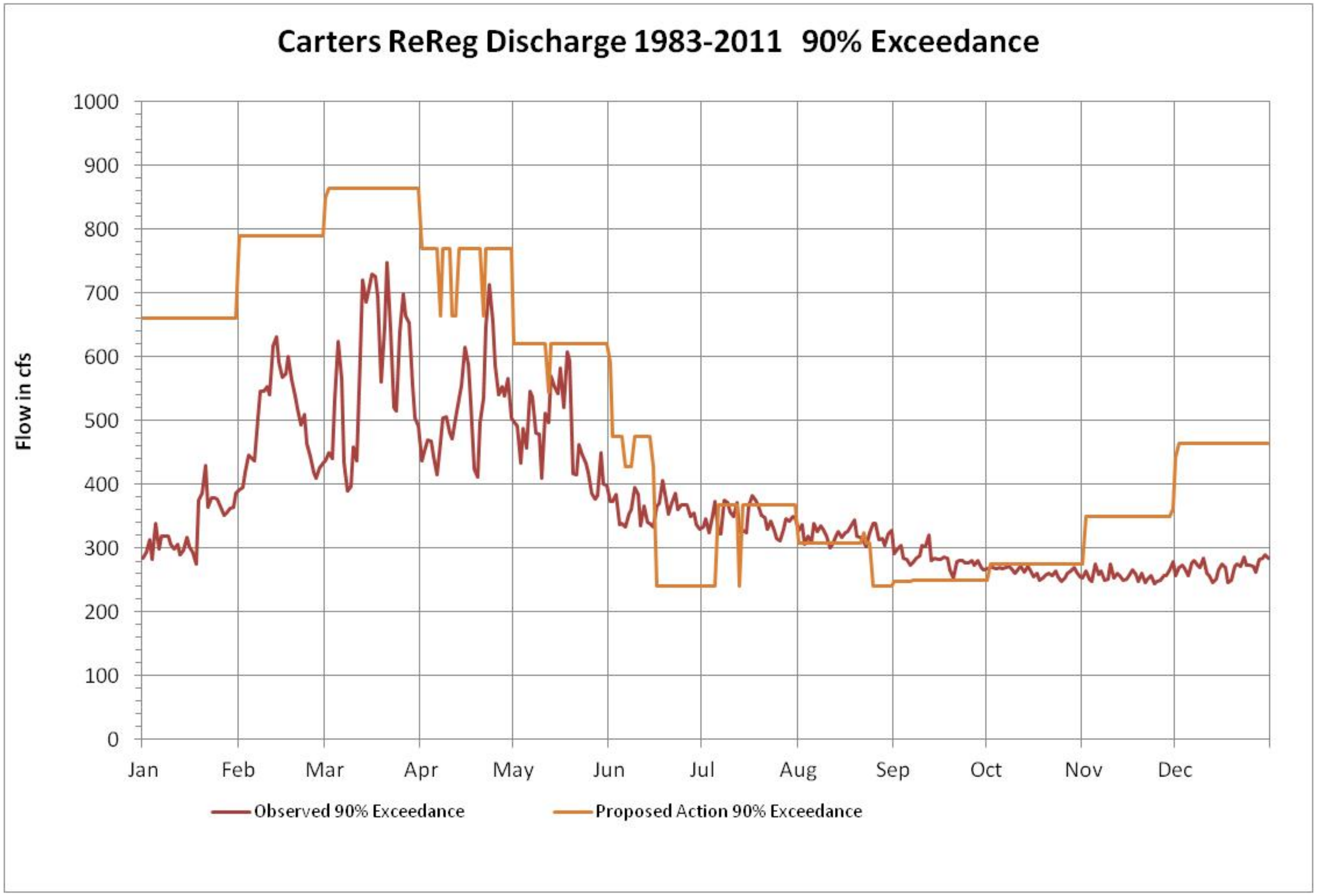


Figure 55. Comparison of Observed Data and Modeled Proposed Action for 90% Exceedance Flow at the Carters Dam Tailrace , years 1983-2011.

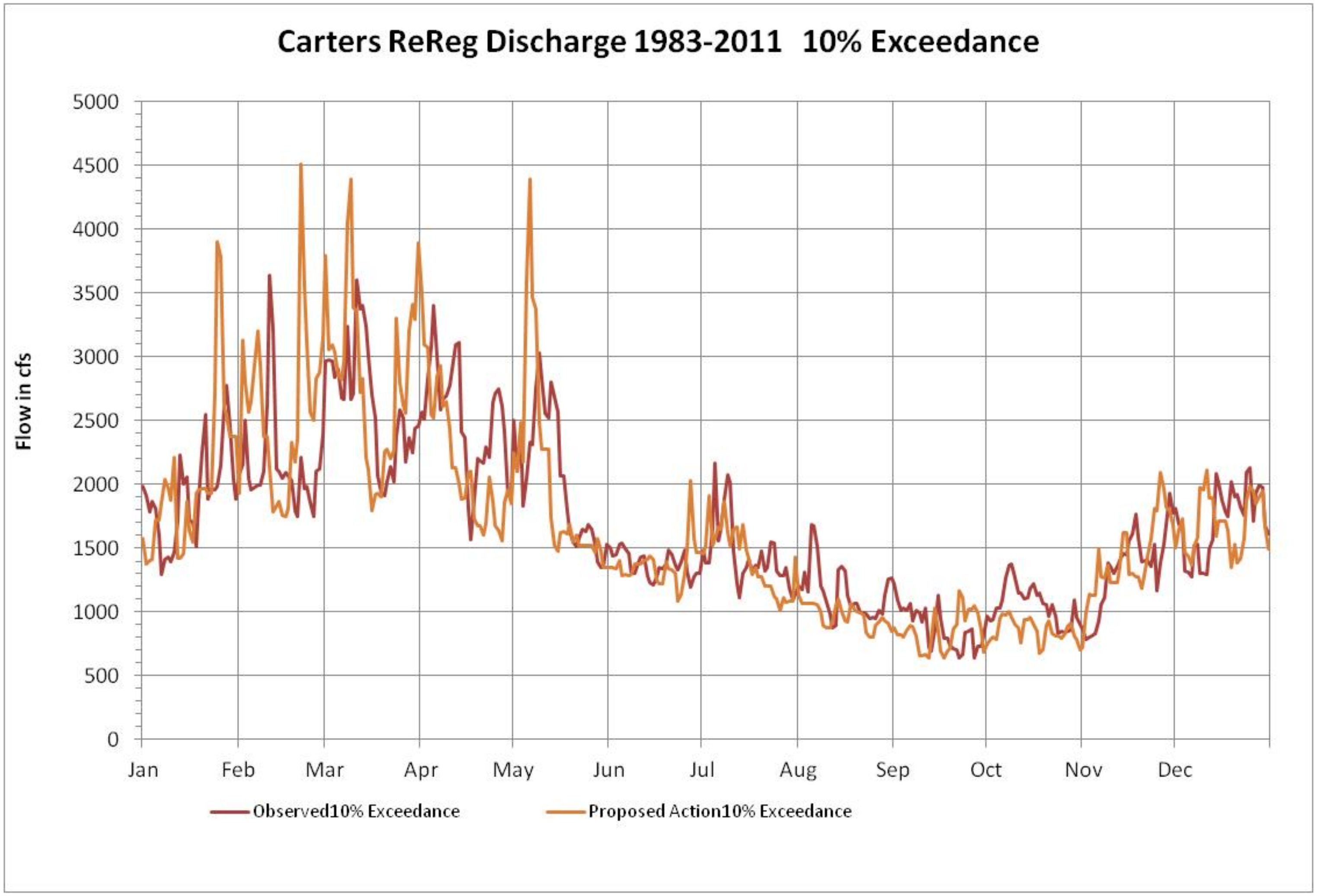


Figure 56. Comparison of Observed Data and Modeled Proposed Action for 10% Exceedance Flow at the Carters Dam Tailrace, years 1983-2011.

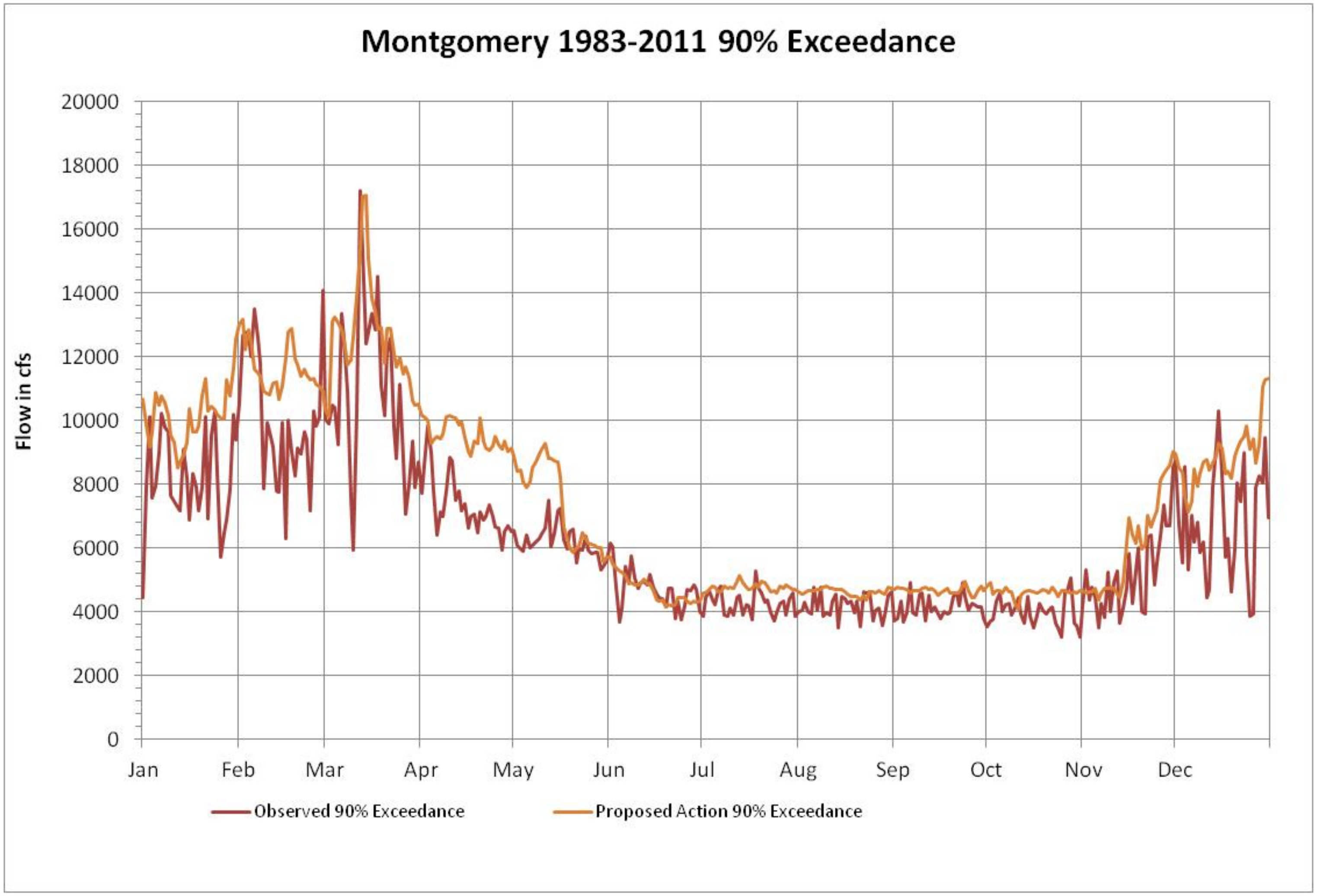


Figure 57. Comparison of Observed Data and Modeled Proposed Action for 90% Exceedance Flow at Montgomery, years 1983-2011.

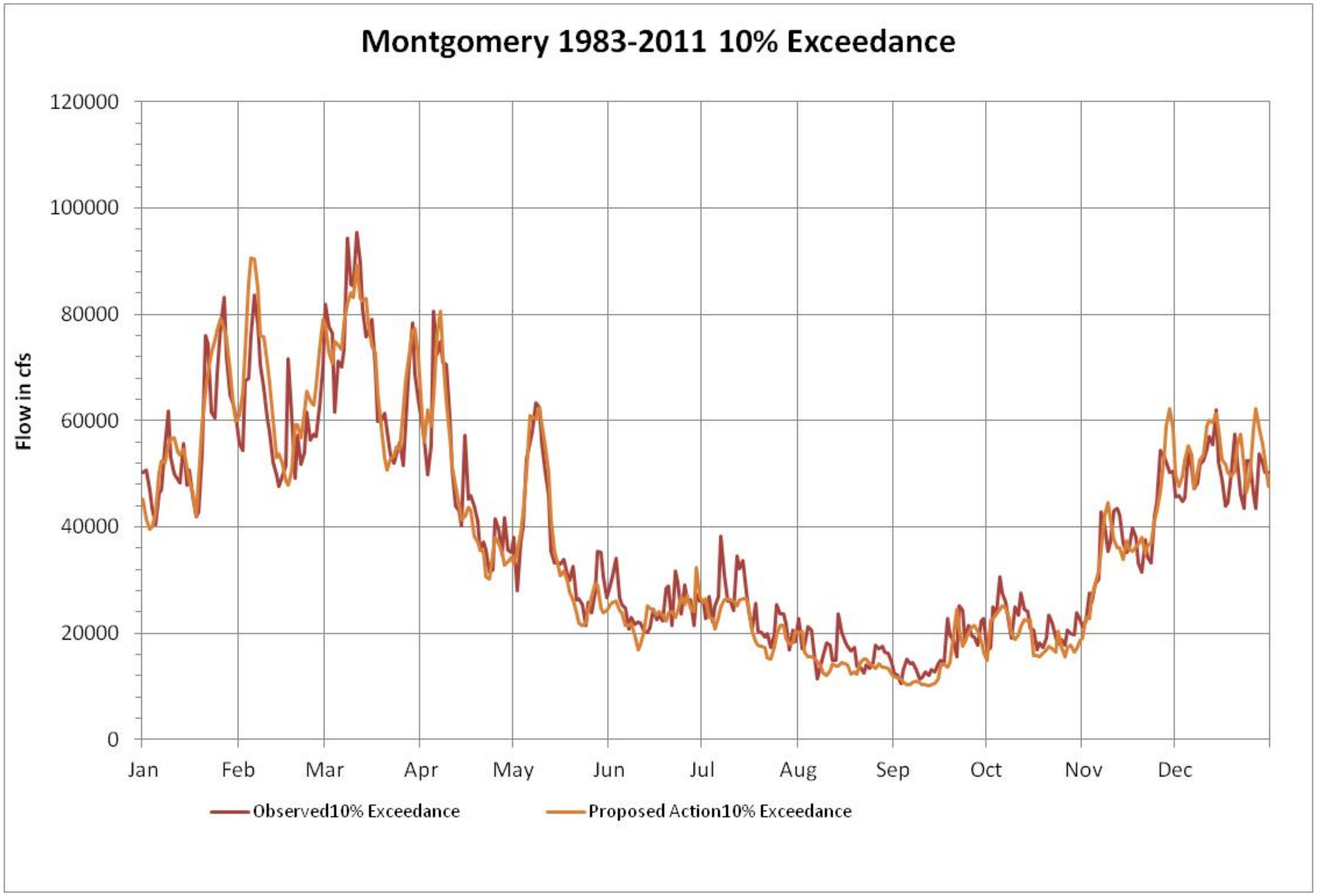


Figure 58. Comparison of Observed Data and Modeled Proposed Action for 10% Exceedance Flow at Montgomery, years 1983-2011.

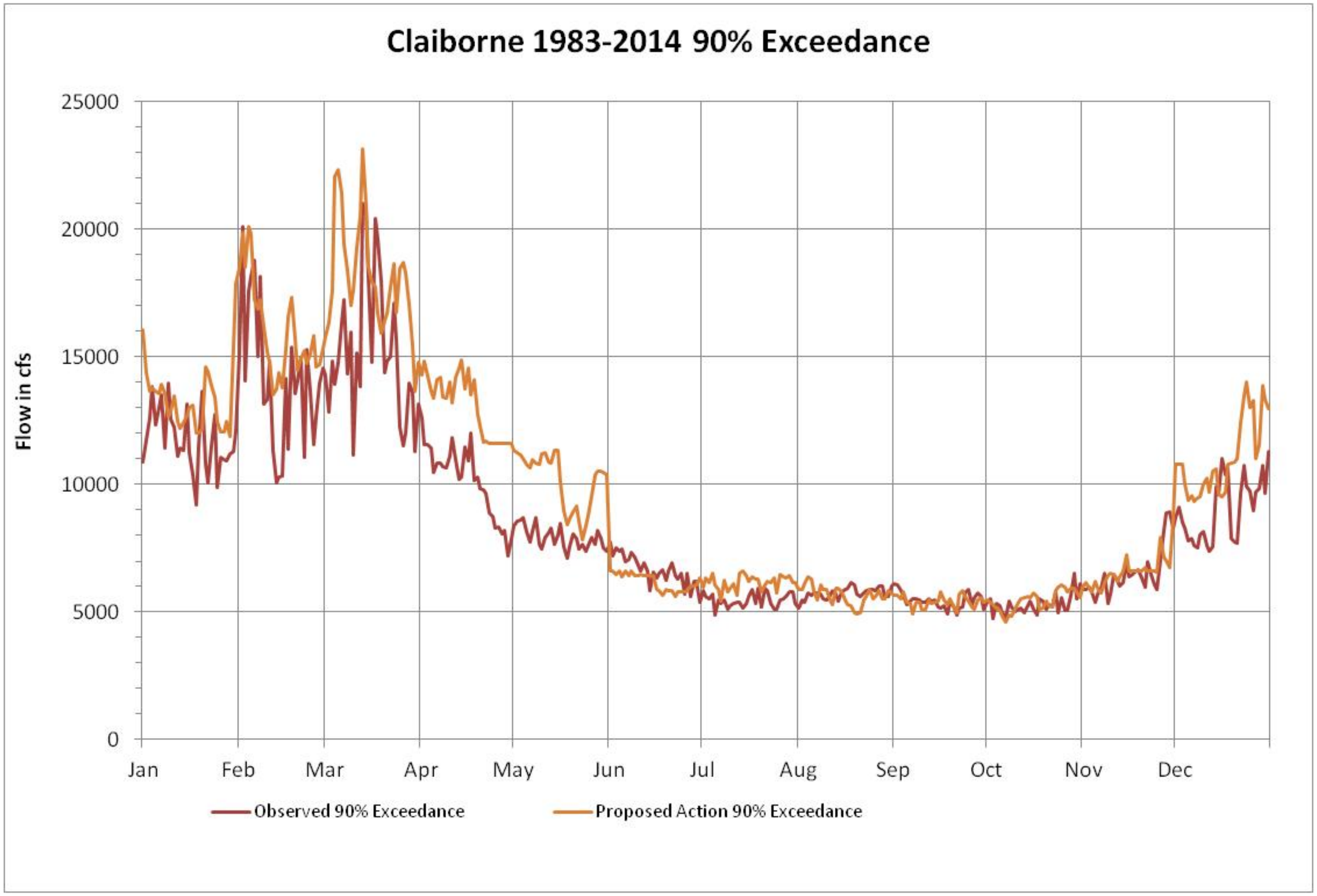


Figure 59. Comparison of Observed Data and Modeled Proposed Action for 90% Exceedance Flow at the Claiborne Dam Tailrace , years 1983-2011.

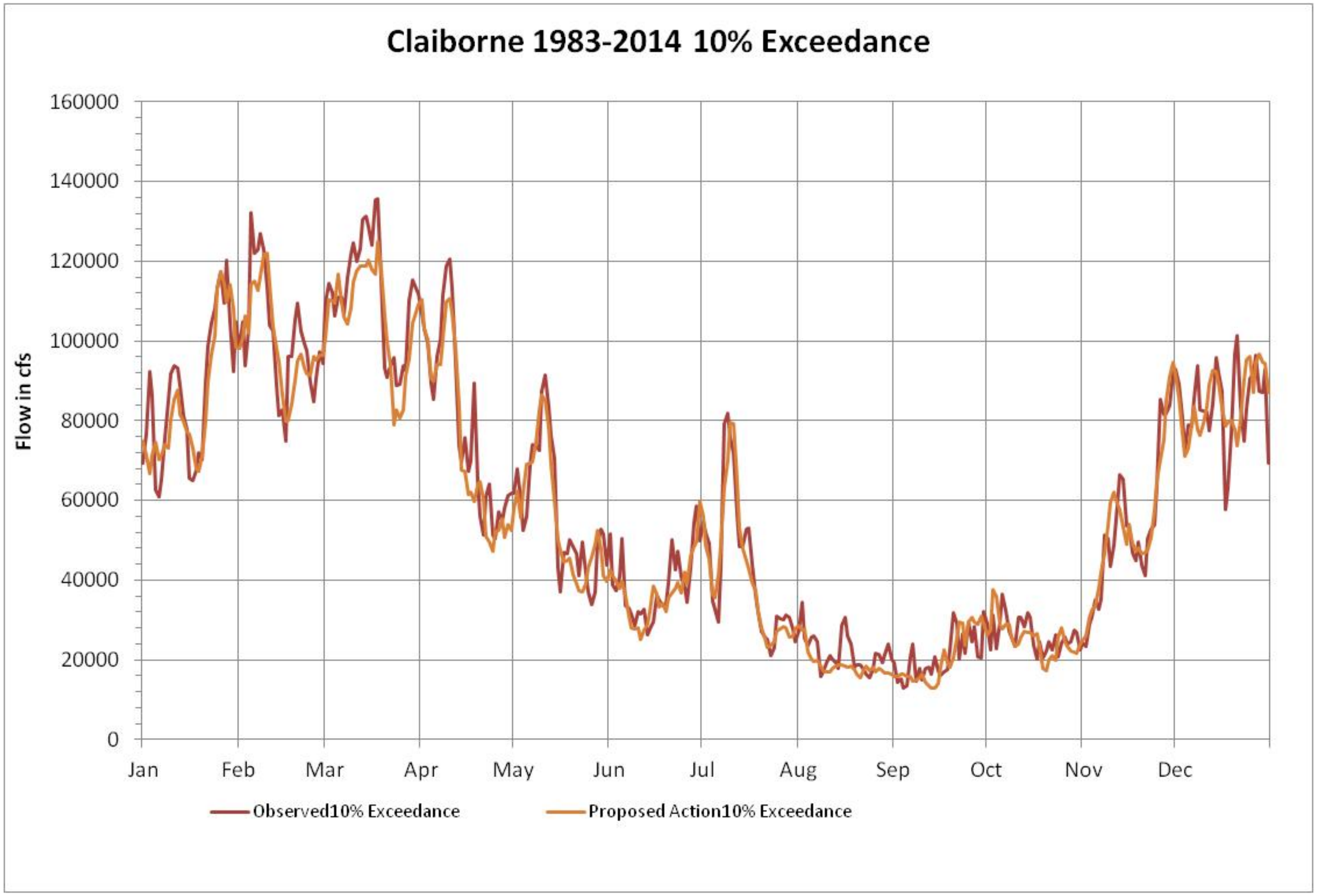


Figure 60. Comparison of Observed Data and Modeled Proposed Action for 10% Exceedance Flow at the Claiborne Dam Tailrace , years 1983-2011.

APPENDIX B ADDENDUM TO BIOLOGICAL ASSESSMENT — PROPOSED UPDATE TO THE WATER CONTROL MANUAL FOR THE ALABAMA-COOSA-TALLAPOOSA RIVER BASIN IN GEORGIA AND ALABAMA, CONSERVATION MEASURES TO BE IMPLEMENTED (2014)

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

March 19, 2014

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Mr. William Pearson
Field Supervisor
U.S. Fish and Wildlife Service
1208-B Main Street
Daphne, Alabama 36526

Dear Mr. Pearson:

I am writing in regards to U.S. Army Corps of Engineers (USACE) Biological Assessment (BA) for the proposed Water Control Manual update for the Alabama-Coosa-Tallapoosa River basin. The BA was provided to you by letter dated February 18, 2014. The enclosed addendum to the BA provides further information that we wish to include.

Thank you for your continued assistance in the update of the WCM. If you have any questions regarding the BA, this addendum or wish to discuss it or the proposed action either by telephone or in person, please contact Mr. Chuck Sumner at (251) 694-3857 or email at lewis.c.sumner@usace.army.mil.

Sincerely,

for

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosure

ADDENDUM TO BIOLOGICAL ASSESSMENT

PROPOSED UPDATE OF THE WATER CONTROL MANUAL FOR THE ALABAMA-COOSA-TALLAPOOSA RIVER BASIN IN GEORGIA AND ALABAMA, CONSERVATION MEASURES TO BE IMPLEMENTED

Based on continuing discussion and consultation between USACE and the Service, and pursuant to informal consultation procedures of the Endangered Species Act, the following conservation measures will be implemented by USACE. The purpose of the measures is to confirm that there would be no adverse affect to amber darter and mussel Critical Habitat in the Coosawattee River below Carters Dam. A specific plan of implementation for each measure will be developed jointly by the Service and USACE within 60 days of Service concurrence with the "may affect but not likely to adversely affect" determination as stated within the BA. The schedule for implementation of the measures would be subject to currently available and future funding.

1. **Quantify the stage-discharge relationships at ungaged sites in the Coosawattee River.**

   Measurements will be taken to determine the relationship between flow releases at Carters Re-regulation dam and river stage at specific locations below the dam. The exact number and locations will be determined in further collaboration but is estimated to not exceed three sites including existing gage sites at Pine Chapel and Carters at four flow rates.

   Rationale: Stage-discharge relationships for ungaged locations are critical for determining water level changes in response to dam operation changes. Water level increases or decreases can result in a change in the net amount or spatial distribution of mesohabitats. Recording water level in the lower river during known flows will aid in the evaluation of effects at the mesohabitat scale.

2. **Assess the spatial distribution and amount of shallow mesohabitats as a function of discharge.**

   Shallow water habitat suitable for Amber Darter continued survival and reproduction will be mapped from near Carters Re-regulation Dam to the confluence with the Conasauga River forming the Oostanaula River. This task will primarily involve identification of shoals and riffles, and general sediment descriptions, with a goal to identify the number, location and extent of those areas. Combined with the stage-discharge relationships, effects on both the net area and spatial distribution of shallow habitats can be assessed. The specific methodology is to be determined in collaboration, but will generally involve multiple transects the length of the river mapping bathymetry and sediment characteristics.

Rationale: Approximately 20 sites have previously been identified by the Service as potential shallow-water amber darter habitat locations in the Coosawattee River. However, these locations were crudely characterized using limited technologies, and were identified at a range of discharges, thereby confounding the identification of shallow locations. However, it was concluded that shallow habitats seemed to be limited in the Coosawattee River. Additional detailed habitat mapping is needed to determine the number and extent of the sites.

3. **Characterize habitat characteristics within representative shallow mesohabitats at a range of discharges.**

   A subset of the number of sites identified from task 2 above will be sampled to determine suitable microhabitat within them. The task will involve determining bed sediment size, vegetative cover, water depth, and velocity along transects at a minimum of four discharges. The specific methodology will be determined in collaboration but is estimated to include ten shoal habitat locations previously identified.

   Rationale: The amount of suitable microhabitat within shoals and riffles varies with flow magnitude. This general methodology will enable USACE to determine the extent to which the microhabitats that are nested within mesohabitats are affected.

If, as a result of tasks 1-3 listed above, a determination is made that a degradation of the extent or quality of amber darter shoal habitat in the Coosawattee River is occurring as a result of the proposed action and that such degradation could over time lead to an adverse affect to the species, further consultation with the Service would be conducted to determine appropriate further actions such as fish sampling or other conservation measures.

4. **Assess potential bank erosion rate as a function of discharge.**

   River bank erosion will be estimated by visual identification of likely erosion sites, followed by physical measurement of bank locations compared to fixed points such as stakes, trees, pilings, etc. Photographic evidence of erosion will be made and included as part of a determination of overall effect of the proposed action on river bank erosion in the Coosawattee River. The estimated rate of bank erosion due to the proposed action will be compared to the baseline erosion rate under current conditions. The baseline rate will be estimated using visual identification and measurement as described above and any other available information such as existing stage-discharge data from existing gages and any available historic aerial photography. The specific methodology will be determined in collaboration and will include specific sites and flows for inclusion.

   Rationale: The geomorphic response to baseflow alteration under the Proposed Action Alternative is not expected to be extreme. There may be minor effects to channel morphology, suspended sediment load, and bed sediment composition should channel banks erode at rates that exceed erosion rates under the No Action Alternative. Alteration to the bed sediment composition could affect habitat used by both Amber Darter and mussel Critical Habitat in the river.

If, as a result of task 4, a determination is made that excessive bank erosion in the Coosawattee River is occurring as a result of the proposed action and that such erosion could over time lead to an adverse affect to listed mussel Critical Habiat, further consultation with the Service would be conducted to determine appropriate further actions.

APPENDIX C USFWS LETTER OF CONCURRENCE WITH 2014 BIOLOGICAL ASSESSMENT (MARCH 20, 2014)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1208-B Main Street
Daphne, Alabama 36526

IN REPLY REFER TO
2010-I-0141

MAR 20 2014

Colonel Jon J. Chytka
U.S. Army Corps of Engineers, Mobile District
P.O. Box 2288
Mobile, AL 36628-0001

Dear Colonel Chytka:

This letter responds to your Biological Assessment (BA), received on February 20, 2014, and your request for concurrence that all effects of the Proposed Action, the Water Control Manual (WCM) updates for the Alabama-Coosa-Tallapoosa (ACT) River Basin, will have either "no effect" or "may affect, but not likely to adversely affect" endangered or threatened species. We have reviewed the information and provide the following comments in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. § 1531 *et seq.*). It should be noted that the scheduling of hydropower per the Corps-Southeastern Power Administration (SEPA) contract is a federal action that is separate, but related to the federal action of the WCM update. Hence, consultation regarding the SEPA contract is not covered under this consultation. Our comments regarding compliance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. § 661 *et seq.*), and the Migratory Bird Treaty Act (40 Stat. 755, as amended; 16 U.S.C. § 703 *et seq.*) were provided in the Draft Fish and Wildlife Coordination Act Report, dated December 21, 2012. Those comments remain valid.

Proposed Action

Below is a summary of operations under the Proposed Action. Details of the operations can be found in Section 5 of the Draft Environmental Impact Statement. Operations under the Proposed Action include the following:

• Implement a revised drought plan, the Alabama Drought Response Operations Proposal (ADROP), with enhancements recommended by the Service.

• Provide for seasonal navigation releases to support commercial navigation in the Alabama River for a 9.0-ft or 7.5-ft channel depth as long as sufficient basin inflow above the APC projects is available. When sufficient flows cannot be provided to continue to support a minimum 7.5-ft navigation channel, navigation could be impeded and flows at Montgomery would be reduced to 4,640 cfs (7Q10). If one or more of the ADROP drought operations triggers are met, minimum flows at Montgomery would be dropped below 4,640 cfs.

PHONE: 251-441-5181 FAX: 251-441-6222

•Alabama Power Company (APC) projects would continue to operate under their current Federal Energy Regulatory Commission licenses with specific operational requirements.

• The APC project, H. Neely Henry Lake (Coosa River), which operates with a revised guide curve under a FERC license variance (with Corps concurrence) would continue to operate under its revised guide curve.

• Allatoona Reservoir would continue to provide for a 240-cfs minimum flow.

• The existing guide curve at Allatoona Reservoir would be revised to implement a phased fall drawdown period from early September through December. Refined operations at Allatoona Reservoir would include use of four action zones shaped to mimic the seasonal demands for hydropower.

• Refined operations at Carters Reservoir would include the use of two action zones to manage downstream releases. The current minimum flow requirement would remain 240 cfs from Carters Reregulation Dam when in zone 2. Zone 1 operations include a seasonally varying minimum flow.

• The Corps reserves 6,371 ac-ft of storage space in Allatoona Reservoir for water supply for the City of Cartersville, GA and 13,140 ac-ft for the Cobb County Marietta Water Authority. Total storage space allocated to water supply is 19,511 ac-ft.

• The Corps reserves 818 ac-ft in Carters Reservoir for water supply for the City of Chatsworth, GA.

• The Corps would continue to manage fish spawning operations at Allatoona Reservoir.

• The Corps would continue migratory fish passage operations at Claiborne Lock and Dam and Millers Ferry Lock and Dam.

Conservation Measures

Conservation measures have been agreed upon by the Corps and the U.S. Fish and Wildlife Service (Service) on the Coosawattee River below Carters Dam, in a March 19, 2014, Addendum to the BA which was provided by your staff. The purpose of the measures is to confirm that there would be no adverse affect to the amber darter and mussel Critical Habitat in the Coosawattee River below Carters Dam. A specific plan of implementation for each measure will be developed jointly by the Service and Corps within 60 days of this letter. We look forward to implementing the monitoring plan included in the conservation measures and to future coordination with the Corps.

Recommendations

To protect the integrity of the ACT Basin and provide enhancements for listed species we provide the following recommendations:

- Continue migratory fish passage operations at Claiborne Lock and Dam and Millers Ferry Lock and Dam. We recommend the Corps continue working with the Alabama River Fish Passage Working Group and support further research to determine the efficacy of conservation lockages.
- Develop a basin wide Conservation Plan pursuant to Section 7(a)(1) of the ESA which requires all Federal agencies to use their authorities to carry out programs for the conservation (i.e., recovery) of endangered and threatened species and includes specific conservation measures that are contingent upon opportunity and annual appropriations, and other authority and budgetary constraints.
- Continue communication with the Alabama Drought Response Operations Proposal (ADROP) partnership.
- Develop an adaptive management plan and monitoring program to allow greater understanding of riverine ecosystem response to complex variables programs, to determine the effects the updated operations on federally protected species, migratory and resident fishes, and macroinvertebrates (e.g., mussel and snail populations) and add additional data to models as more data are collected.
- The May 3, 2010, Planning Aid Letter identifies research that is useful for the management of natural resources and river flows in an informed manner. These research needs remain pertinent, and we look forward to addressing them in collaboration with you.
- Future modifications to Corps dams (e.g. replacement of turbines, generators, or parts therein) or contracts may require consultation, and temporary maintenance activities may represent research opportunities. Therefore, we recommend semiannual meetings between the Service and the Corps to discuss foreseeable modifications and maintenance activities.

Conclusion

We have reviewed the information provided in your correspondence and concur with your determination that the proposed action will have either "no effect" or "may affect, but not likely to adversely affect" federally endangered or threatened species or adversely modify critical habitat. In view of this, we believe that requirements of section 7 of the ESA have been satisfied. However, obligations under section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner that was not previously considered; (2) this action is subsequently modified in a manner not previously considered in this assessment; or, (3) a new species is listed or critical habitat determined that may be affected by the identified action

If you have any questions, please contact Alabama Ecological Services Field Office staff biologist Jennifer Pritchett (251) 441-6633 or Georgia Ecological Services Field Office staff biologists Alice Lawrence or Will Duncan at (706) 613-9493.

Sincerely,

William J. Pearson
Field Supervisor
Alabama Ecological Services Field Office

cc: Georgia Ecological Services Field Office, attention Will Duncan and Alice Lawrence

APPENDIX D WATER QUANTITY AND WATER QUALITY FIGURES

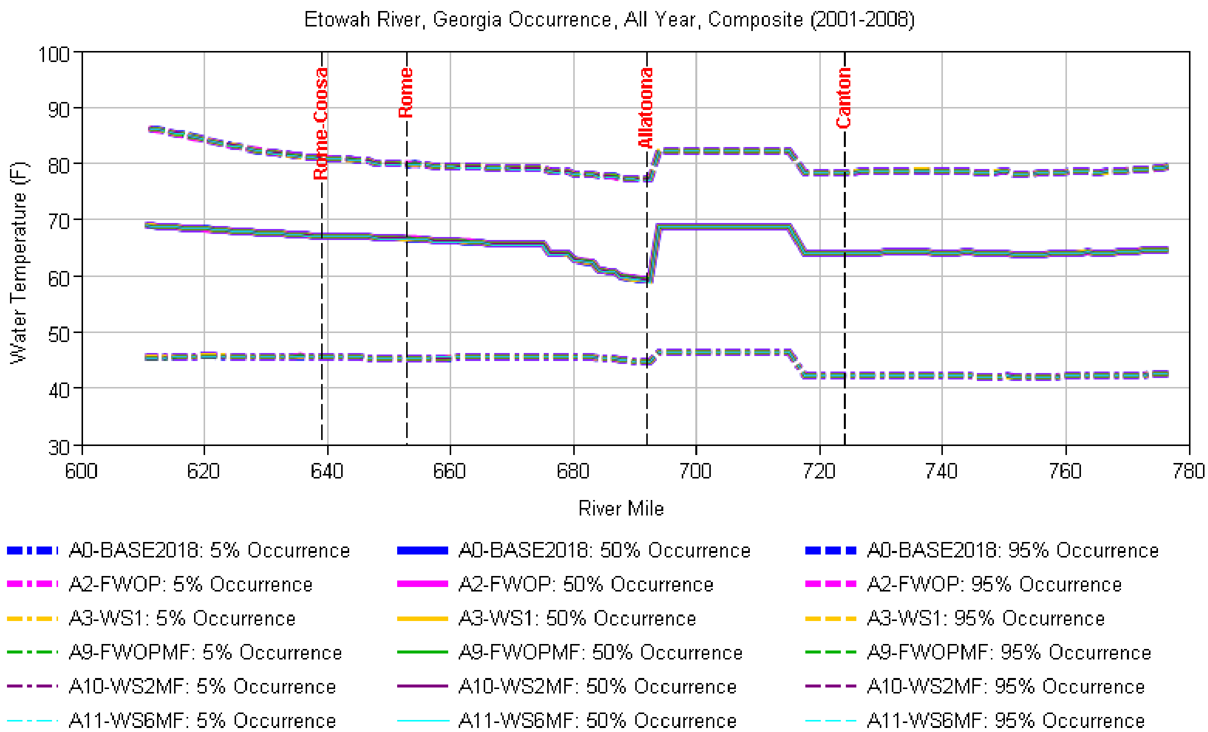


Figure D-1. ***Water Temperature Occurrence for the Etowah River (2001–2008).***

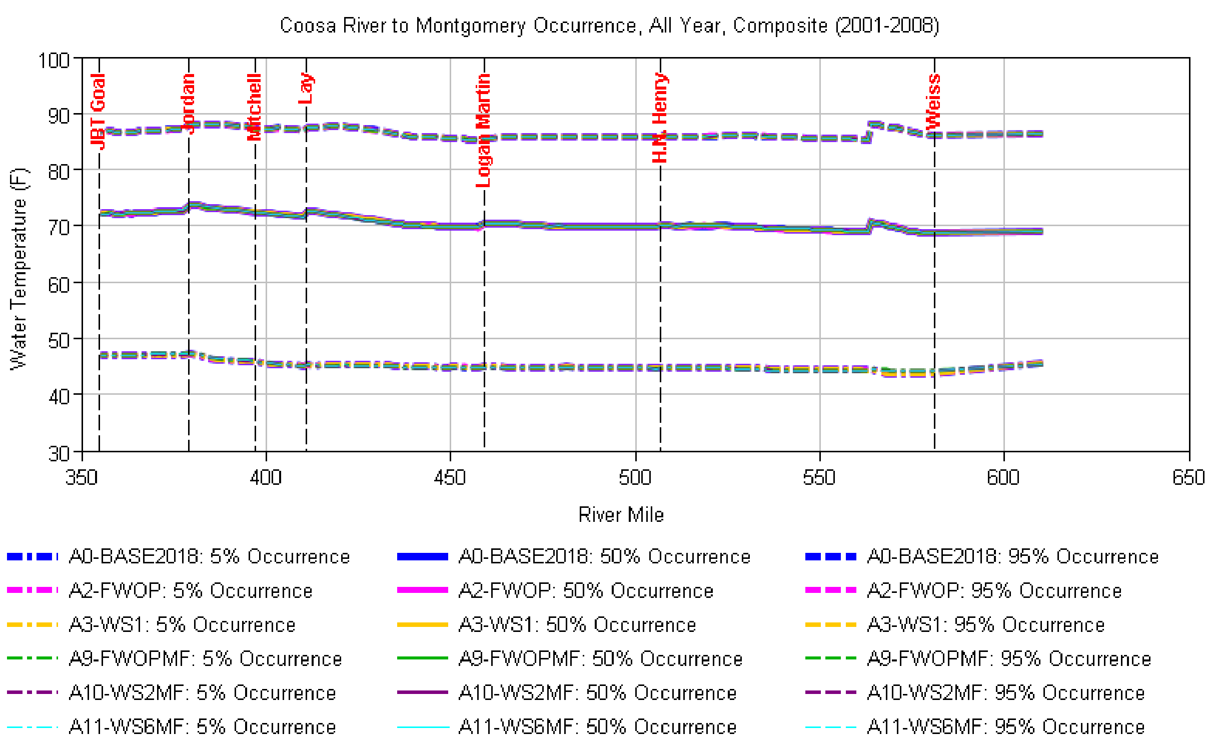


Figure D-2. Water Temperature Occurrence for the Coosa River (2001–2008).

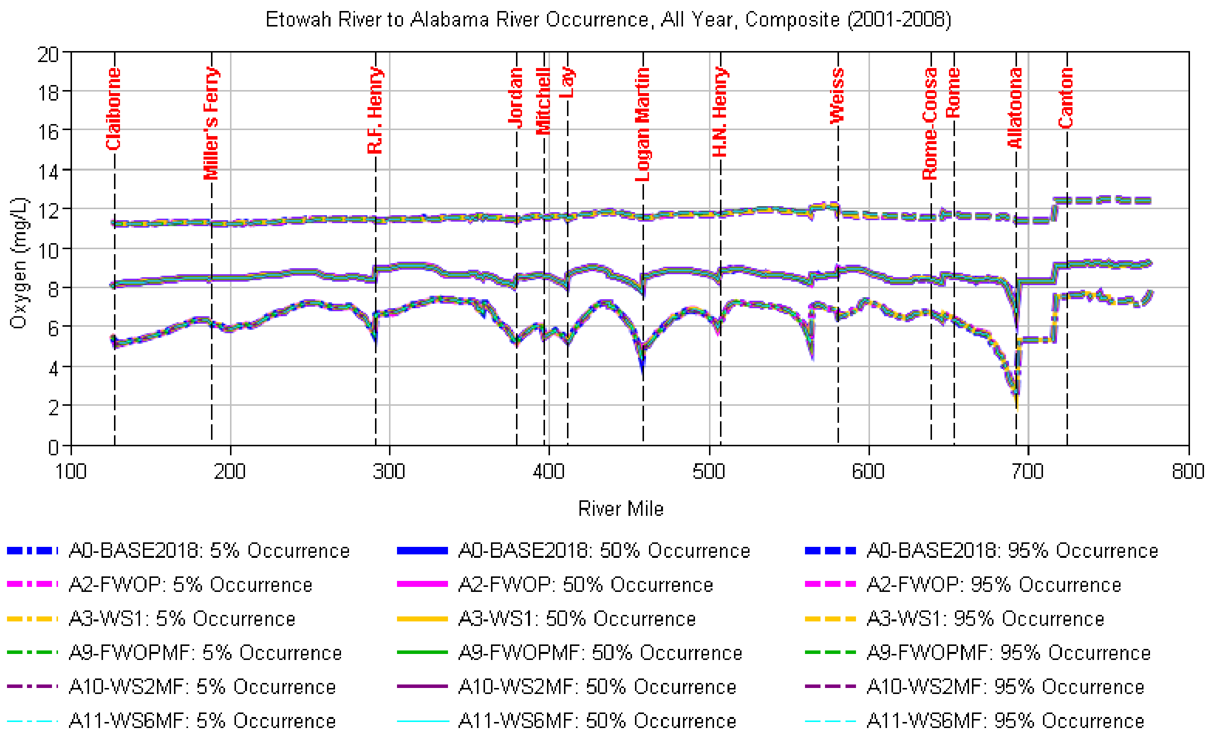


Figure D-3. DO Occurrence for the Etowah River (2001–2008).

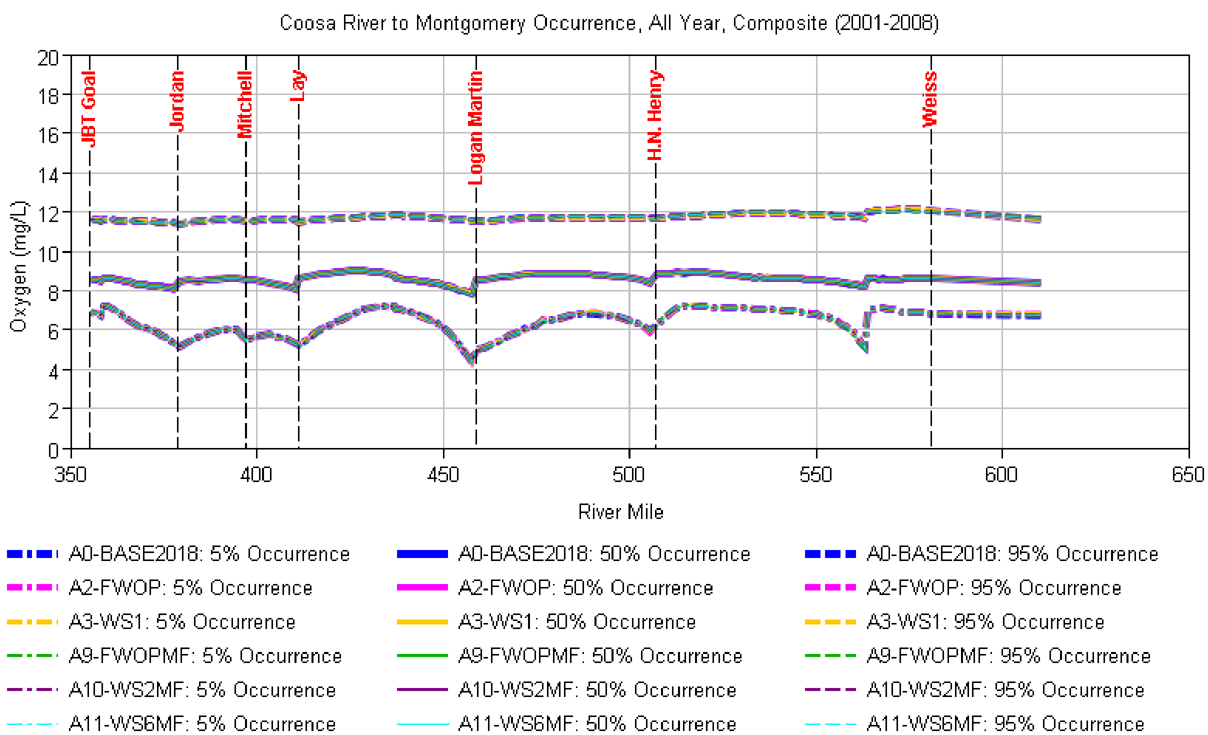


Figure D-4. DO Occurrence for the Coosa River (2001–2008).

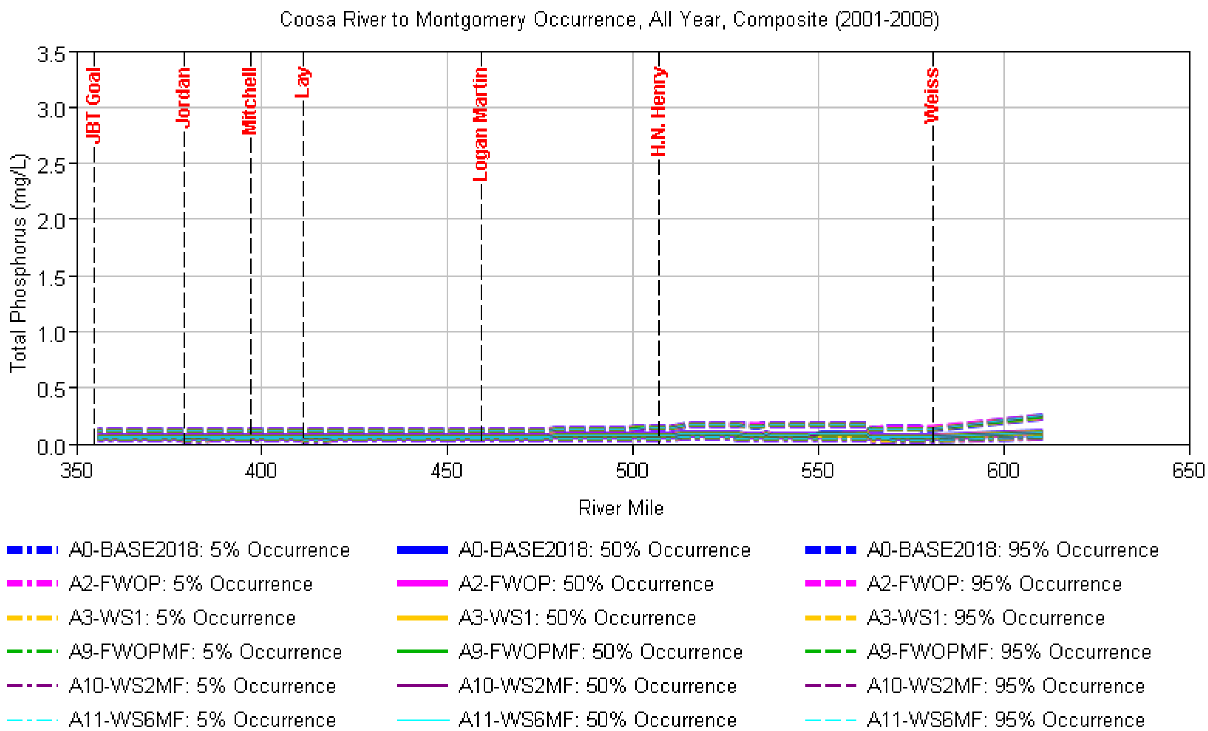


Figure D-5. TP Occurrence for the Coosa River (2001–2008).

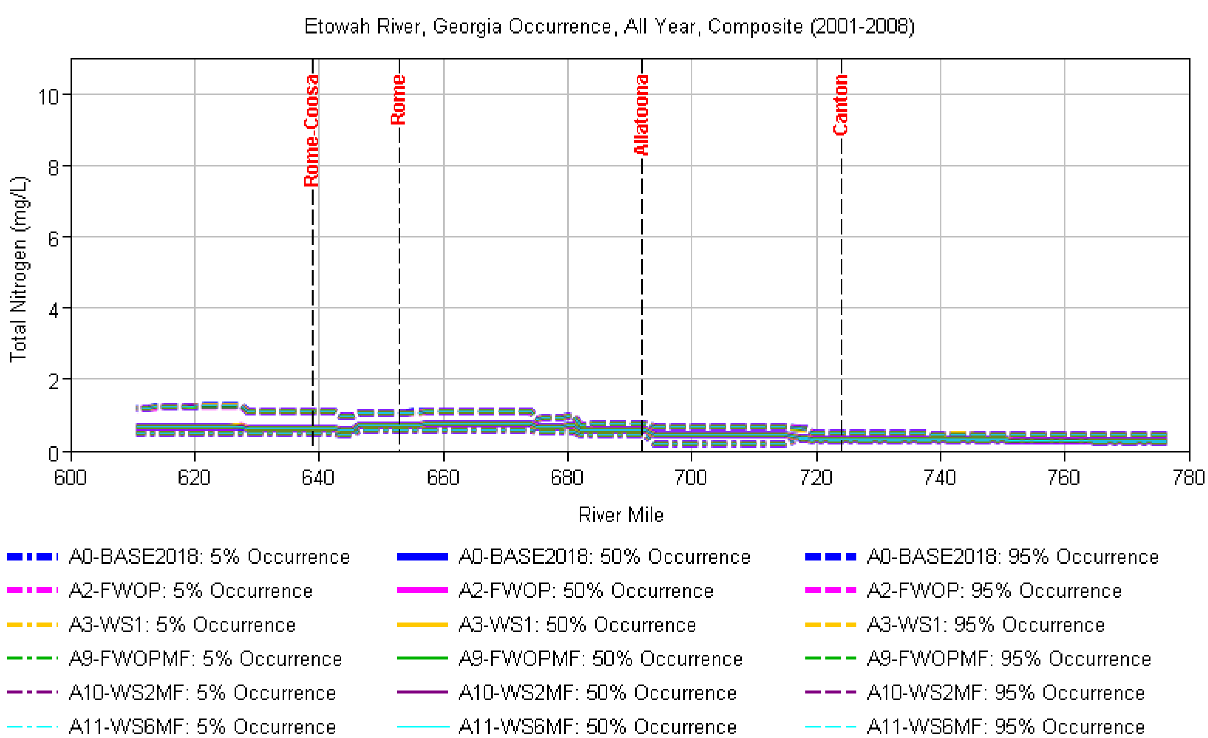


Figure D-6. TN Occurrence for the Etowah River (2001–2008).

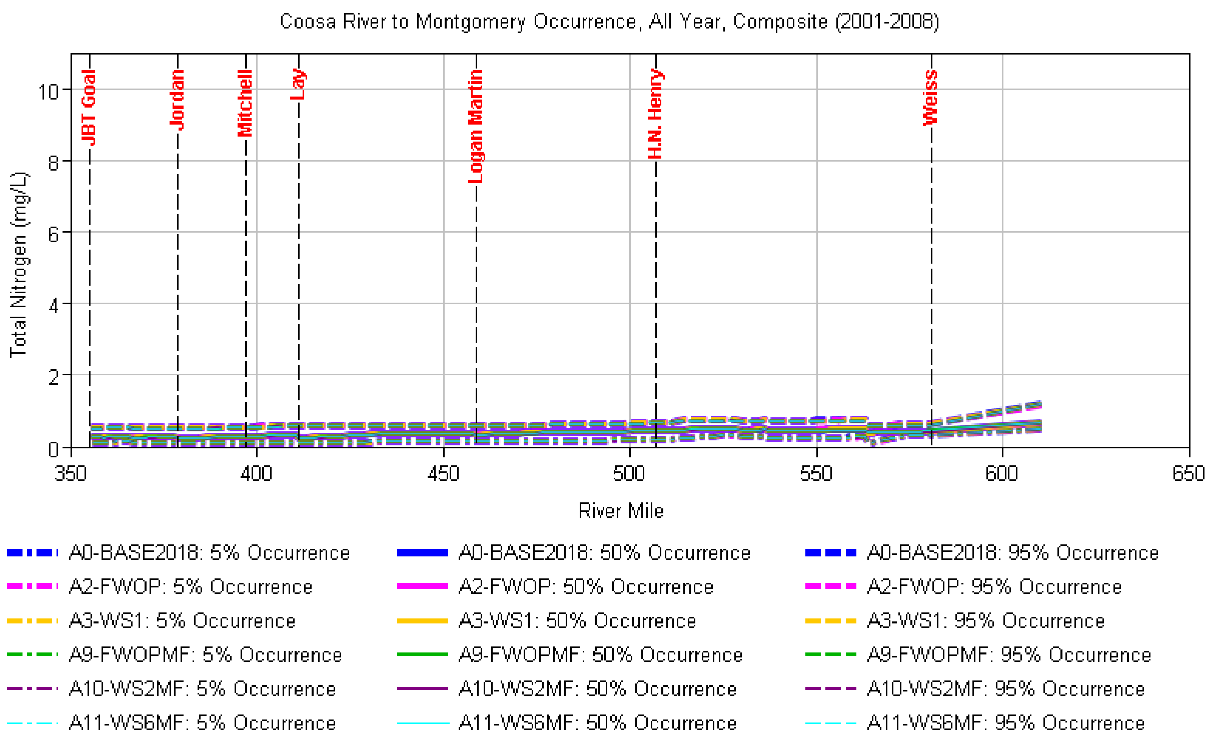


Figure D-7. TN Occurrence for the Coosa River (2001–2008).

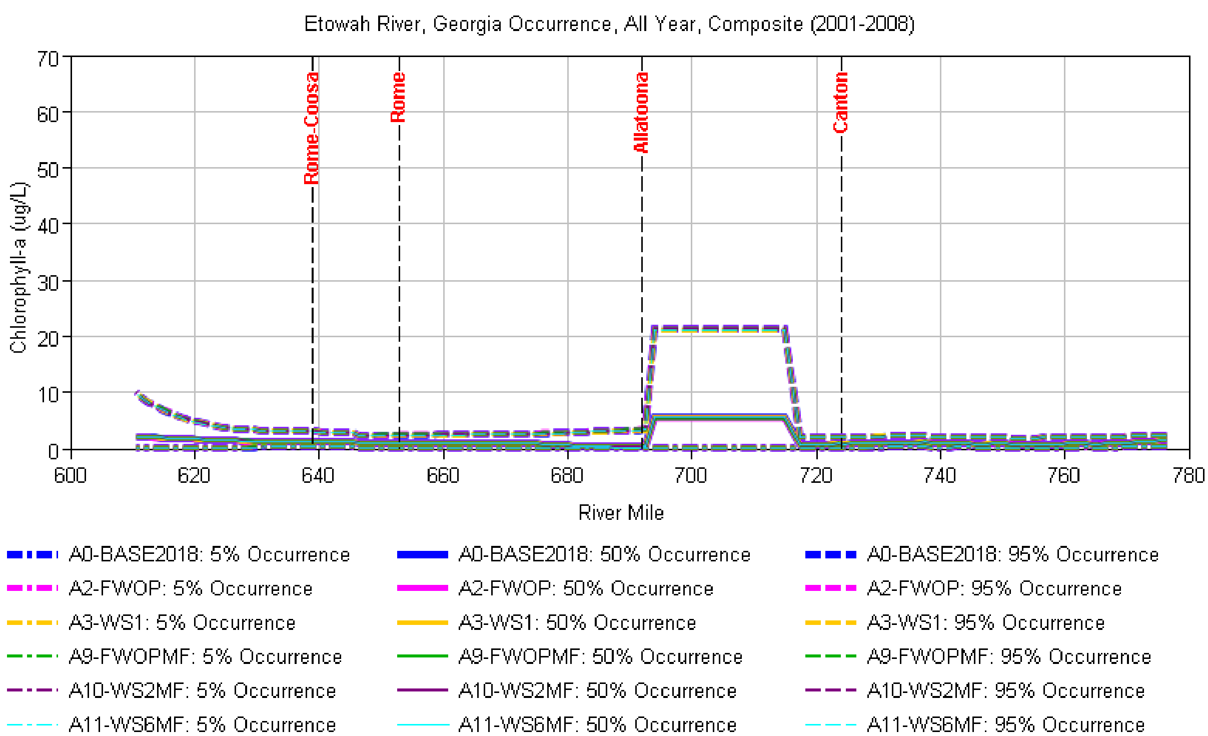


Figure D-8. Chlorophyll a Occurrence for April–November for the Etowah River (2001–2008).

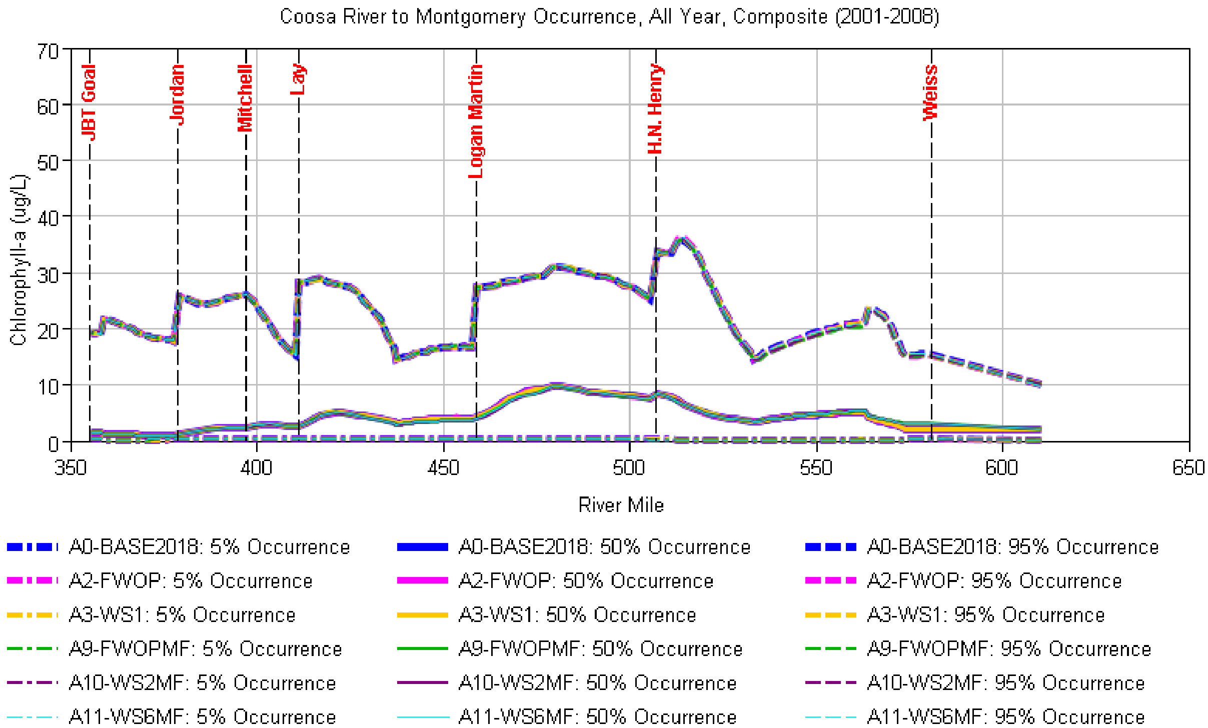


Figure D-9. Chlorophyll a Occurrence for April–November for the Coosa River (2001–2008).

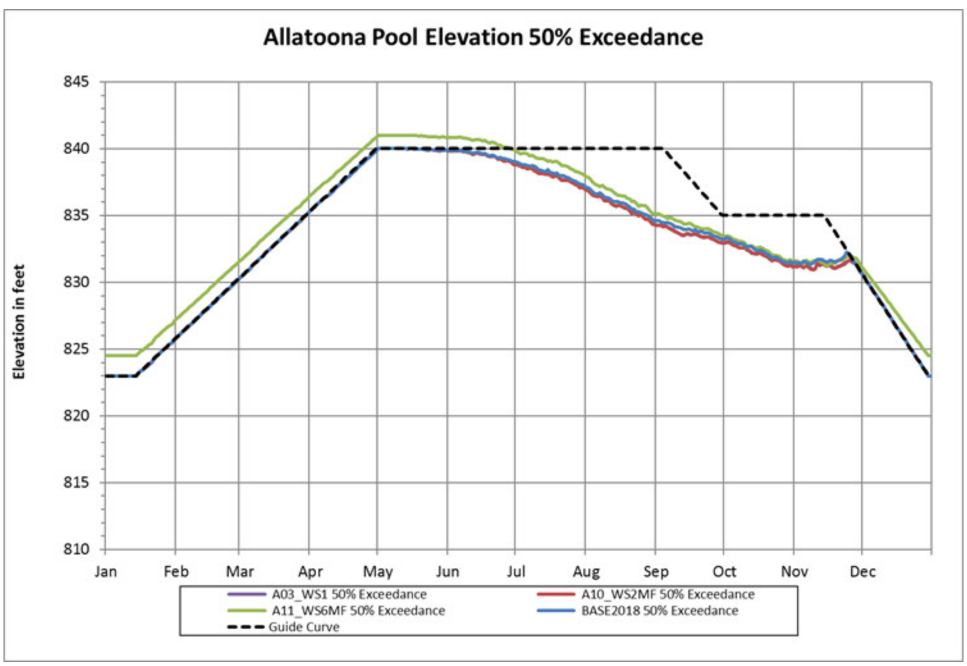


Figure D-10. Allatoona Lake—Median Daily Pool Elevation over the Modeled Period of Record.

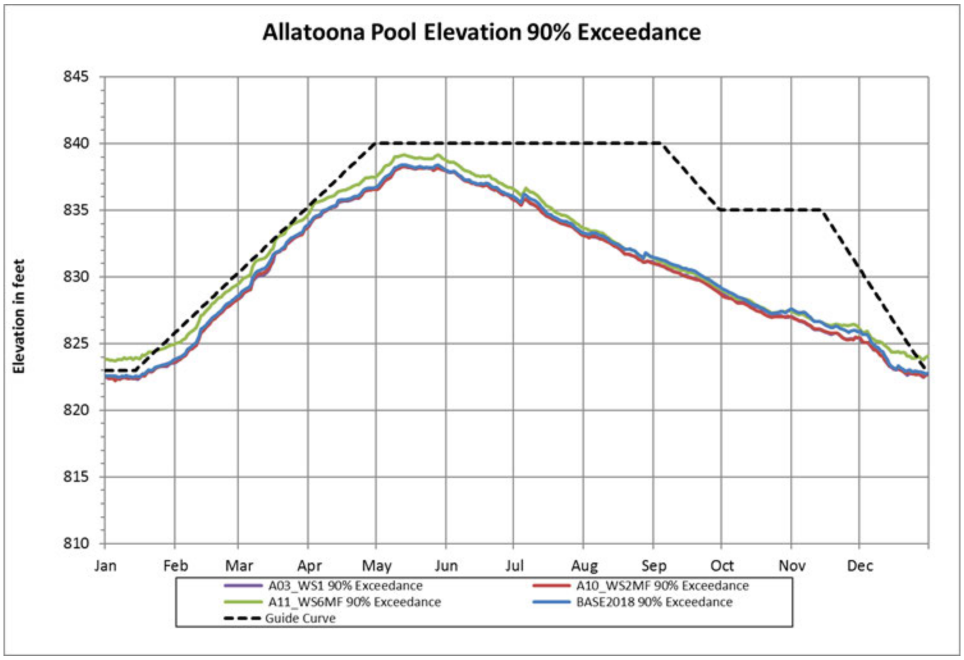


Figure D-11. Allatoona Lake—Daily Pool Elevations Exceeded 90 Percent of the Time over the Modeled Period of Record.

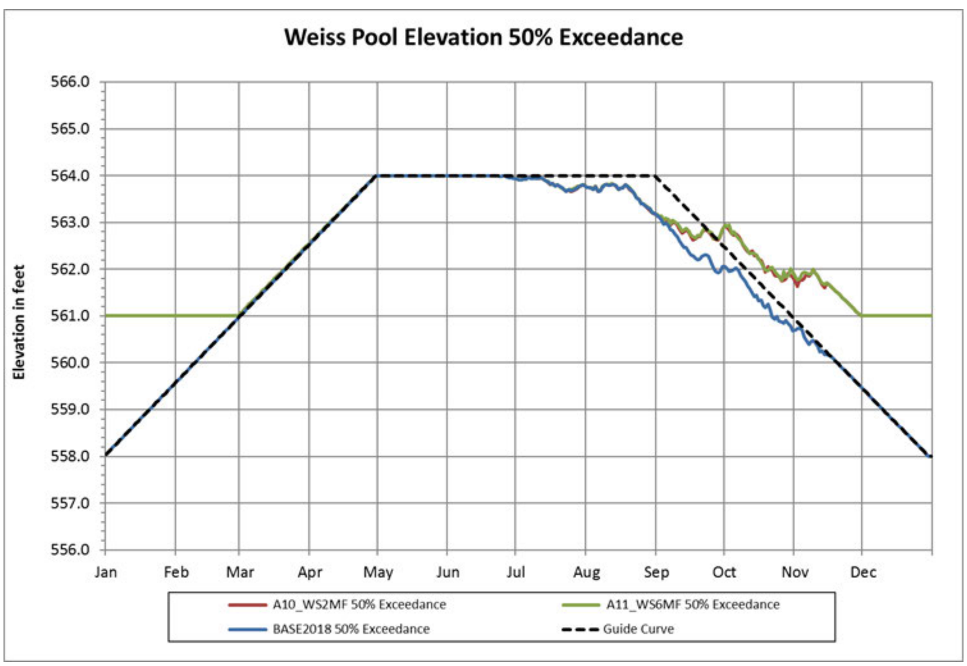


Figure D-12. Weiss Lake—Median Daily Pool Elevation over the Modeled Period of Record.

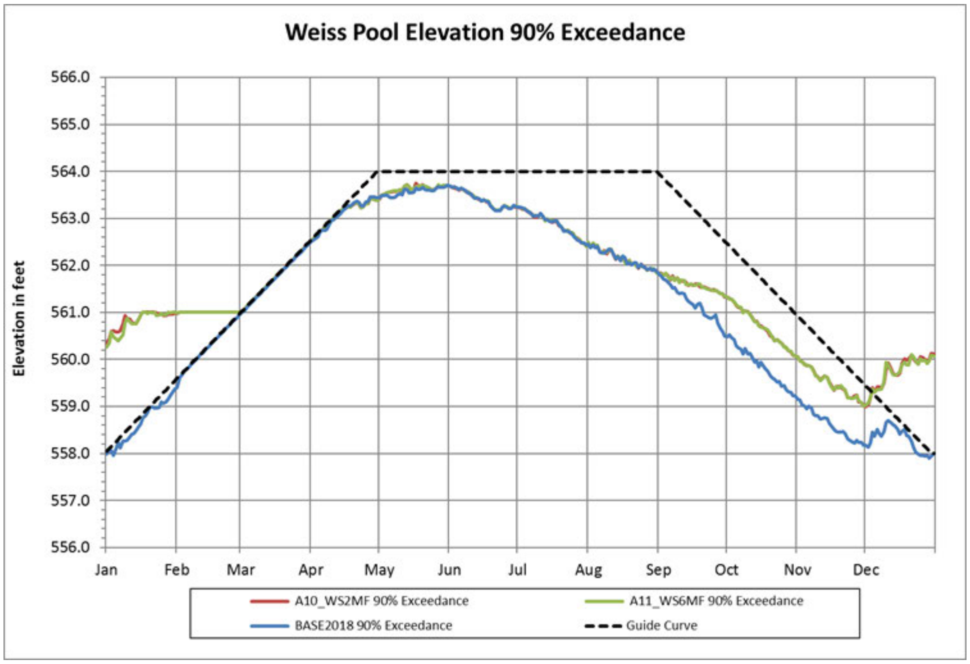


Figure D-13. Weiss Lake—Daily Pool Levels Exceeded 90 Percent of the Time over the Modeled Period of Record.

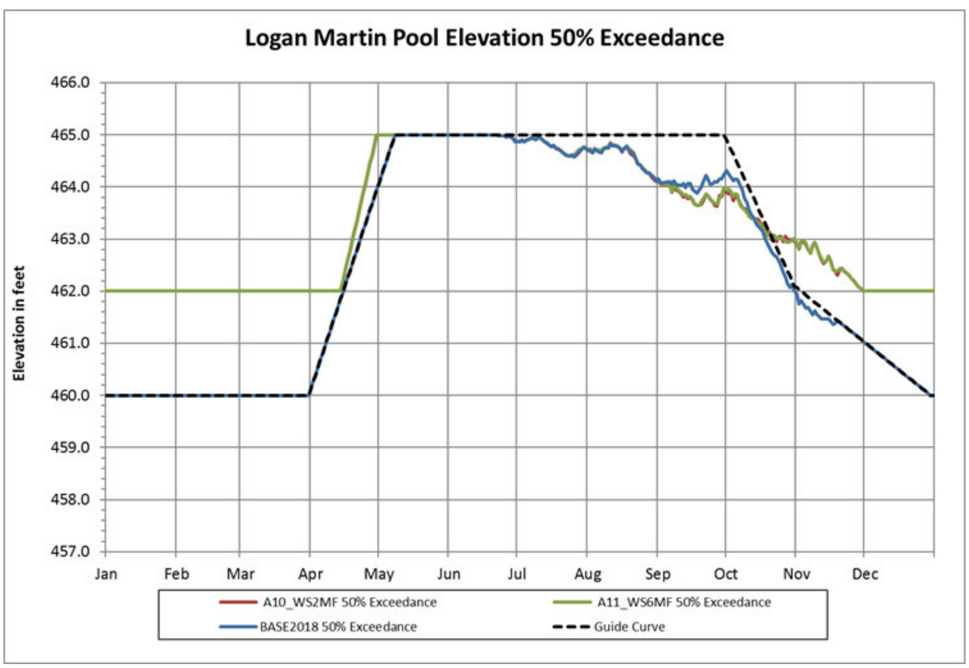


Figure D-14. Logan Martin Lake—Median Daily Pool Elevation over the Modeled Period of Record.

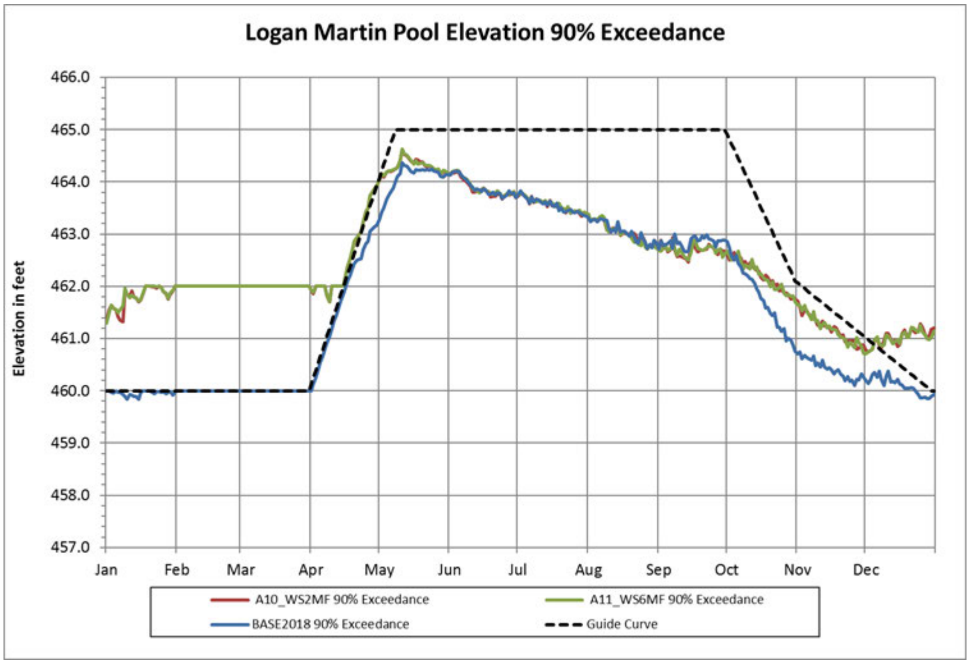


Figure D-15. Logan Martin Lake—Daily Pool Levels Exceeded 90 Percent of the Time over the Modeled Period of Record.

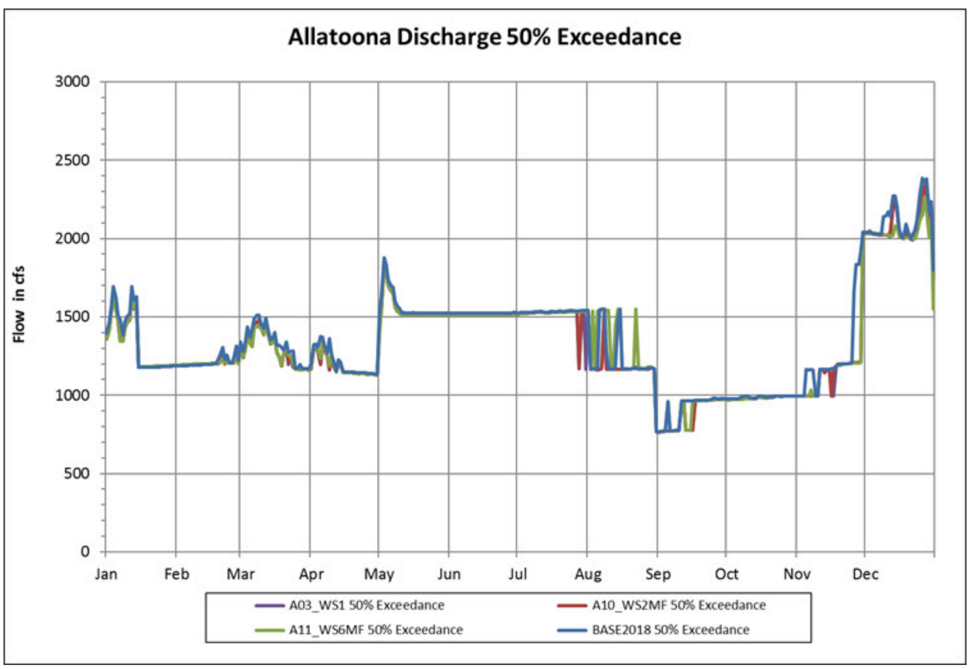


Figure D-16. Etowah River Downstream of Allatoona Dam—Median Daily Discharge over the Modeled Period of Record.

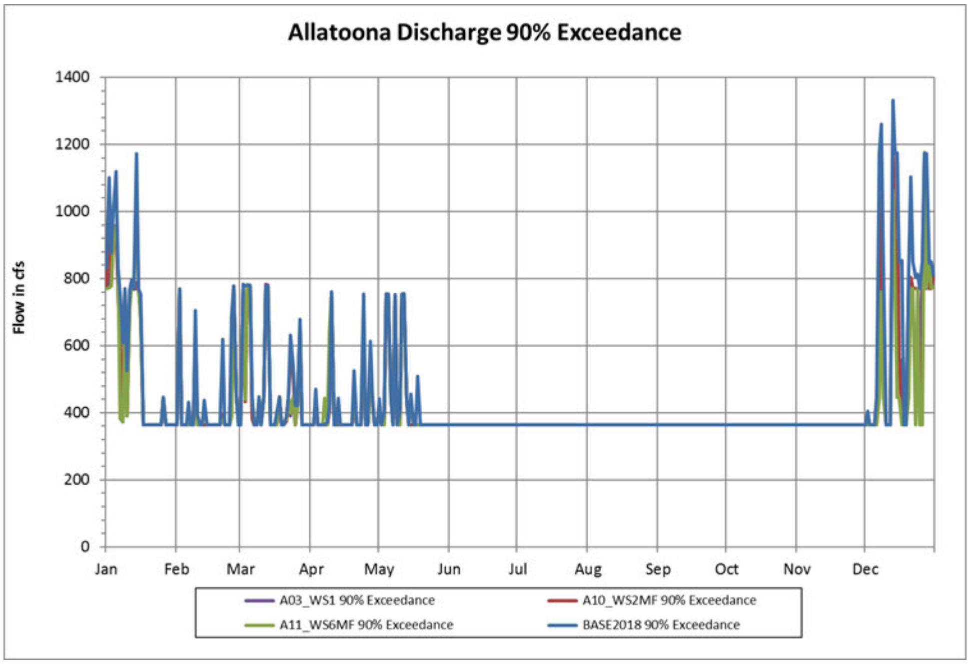


Figure D-17. Etowah River Downstream of Allatoona Dam—Daily Discharge Exceeded 90 Percent of the Time over the Modeled Period of Record.

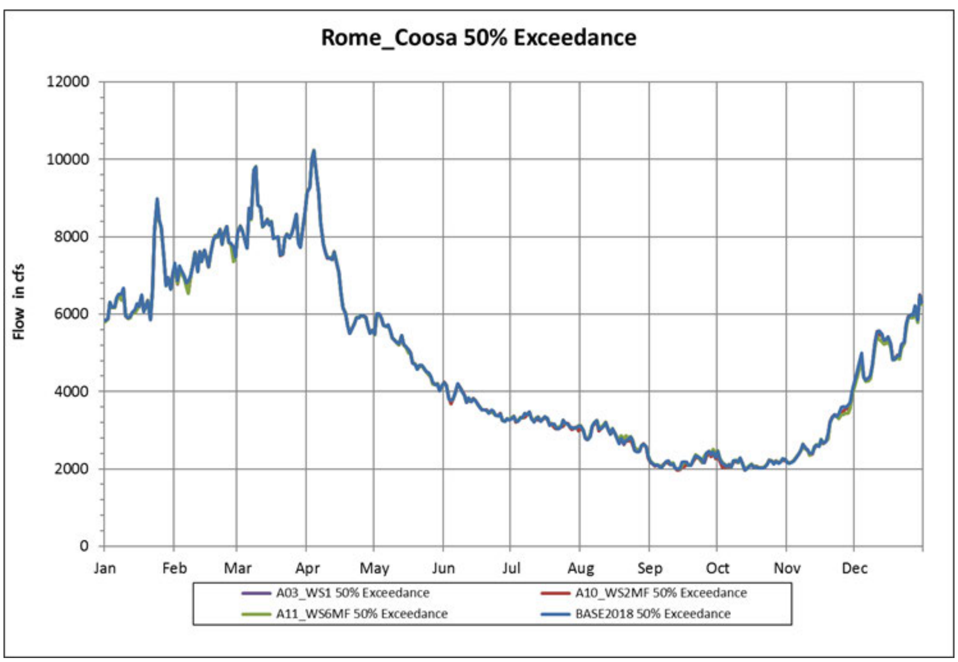


Figure D-18. Coosa River Near Rome, GA—Median Daily Discharge over the Modeled Period of Record.

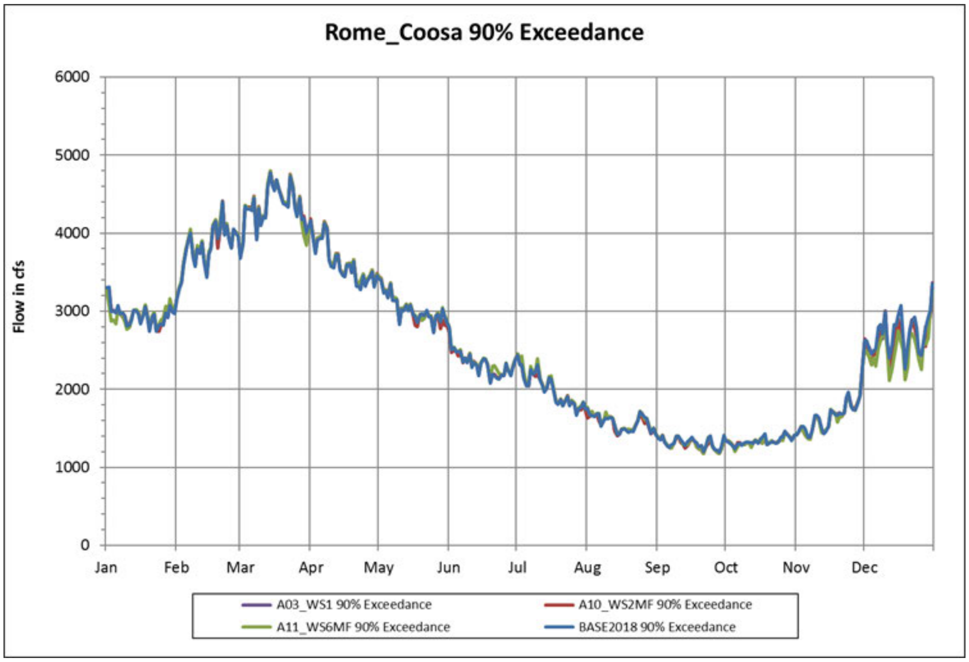


Figure D-19. Coosa River Near Rome, GA—Daily Discharge Exceeded 90 Percent of the Time over the Modeled Period of Record.

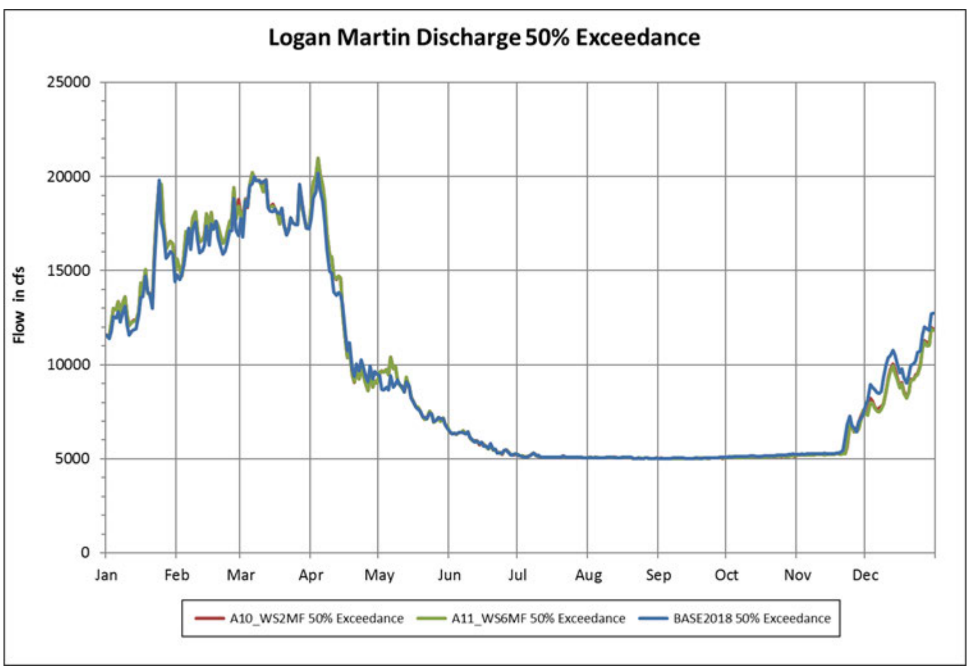


Figure D-20. Coosa River Downstream of Logan Martin Lake—Median Daily Discharge over the Modeled Period of Record.

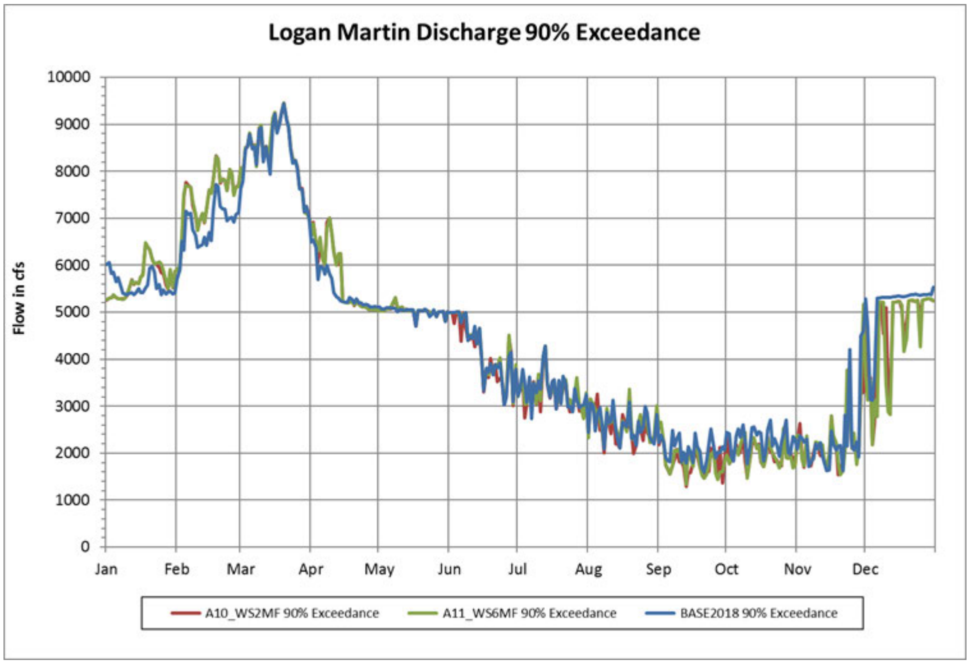


Figure D-21. Coosa River Downstream of Logan Martin Dam—Daily Discharge Exceeded 90 Percent of the Time over the Modeled Period of Record.

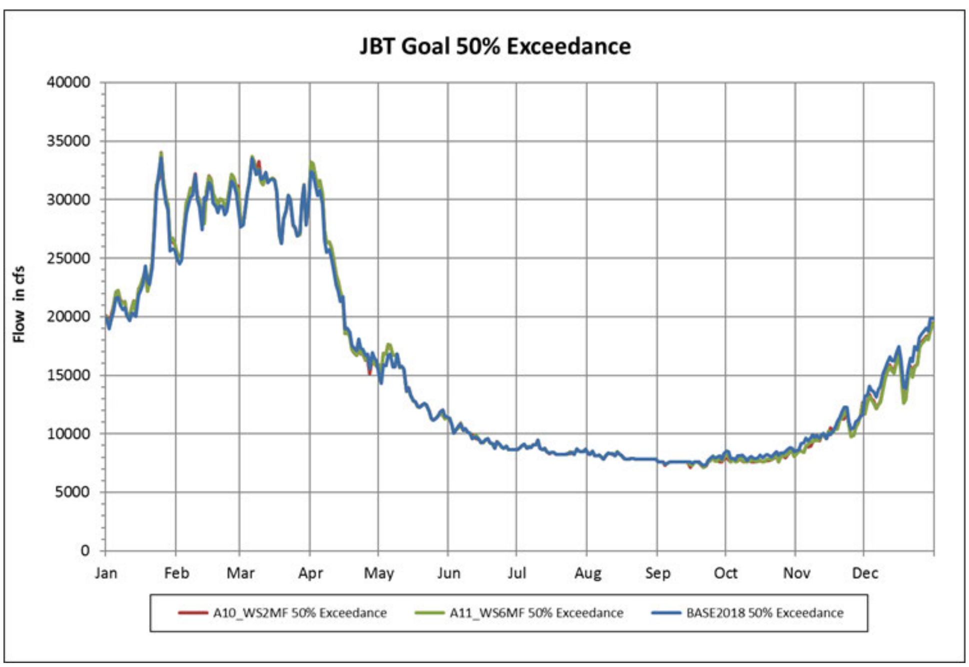


Figure D-22. Alabama River at Confluence of Coosa and Tallapoosa Rivers—Median Daily Discharge over the Modeled Period of Record.

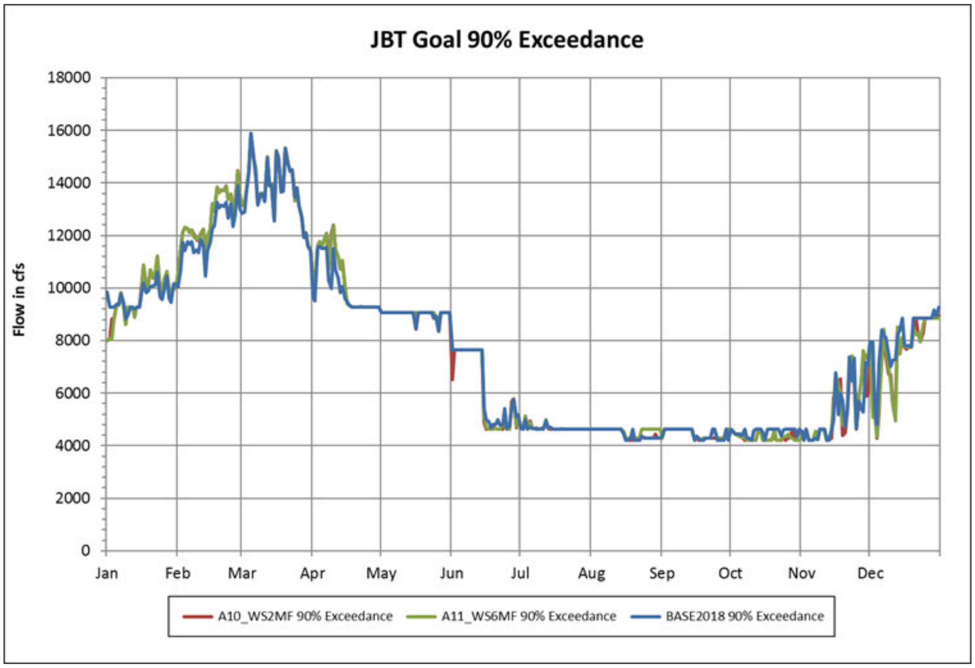


Figure D-23. Alabama River at Confluence of Coosa and Tallapoosa Rivers—Daily Discharge Exceeded 90 Percent of the Time over the Modeled Period of Record.

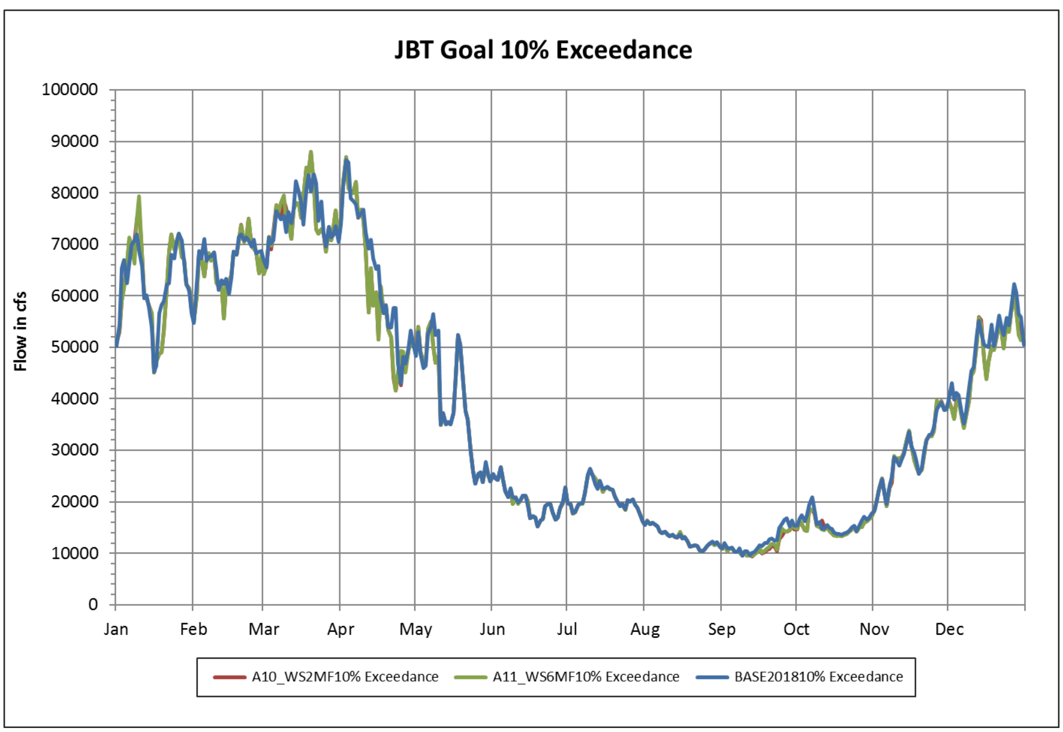


Figure D-24. Alabama River at Confluence of Coosa and Tallapoosa Rivers—Daily Discharge Exceeded 10 Percent of the Time over the Modeled Period of Record.

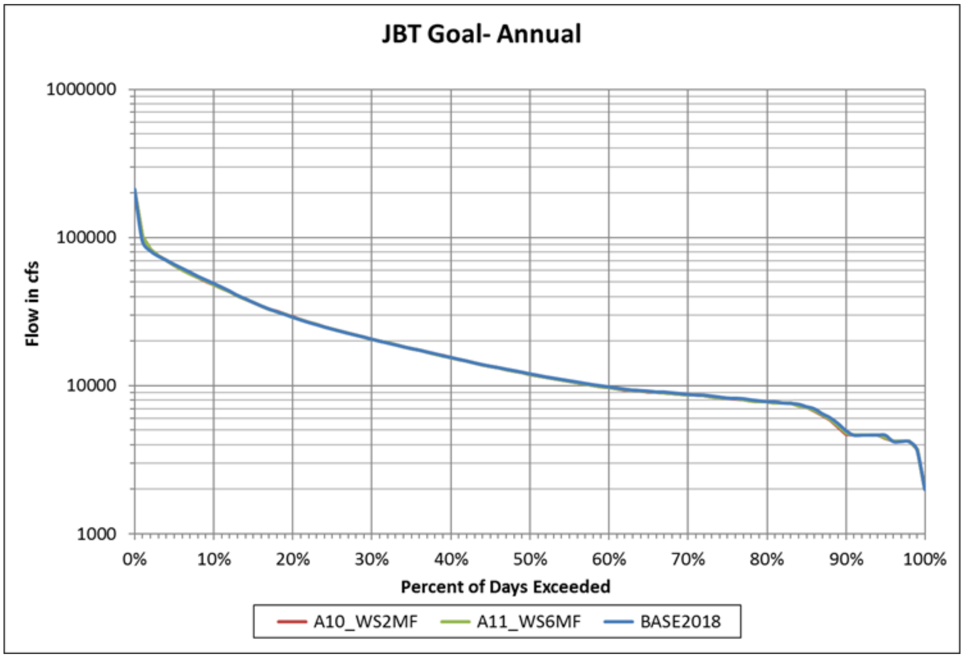


Figure D-25. Alabama River at Confluence of Coosa and Tallapoosa Rivers—Annual Flow Duration Curve over the Modeled Period of Record.

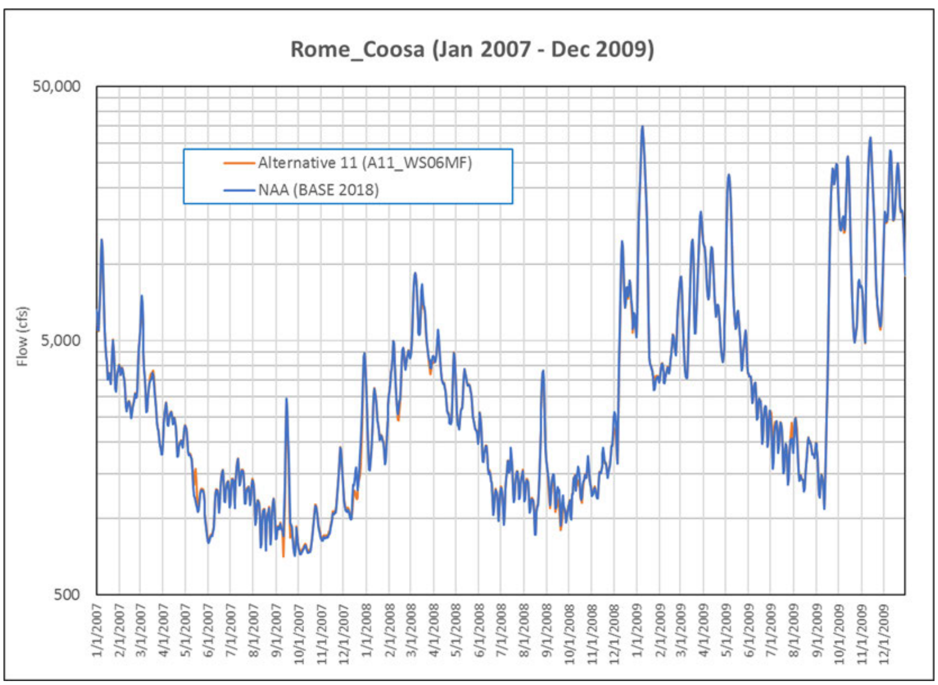


Figure D-26. Coosa River Near Rome, GA—Modeled Flows for the NAA and Alternative 11 for the Period from January 2007 through December 2009.

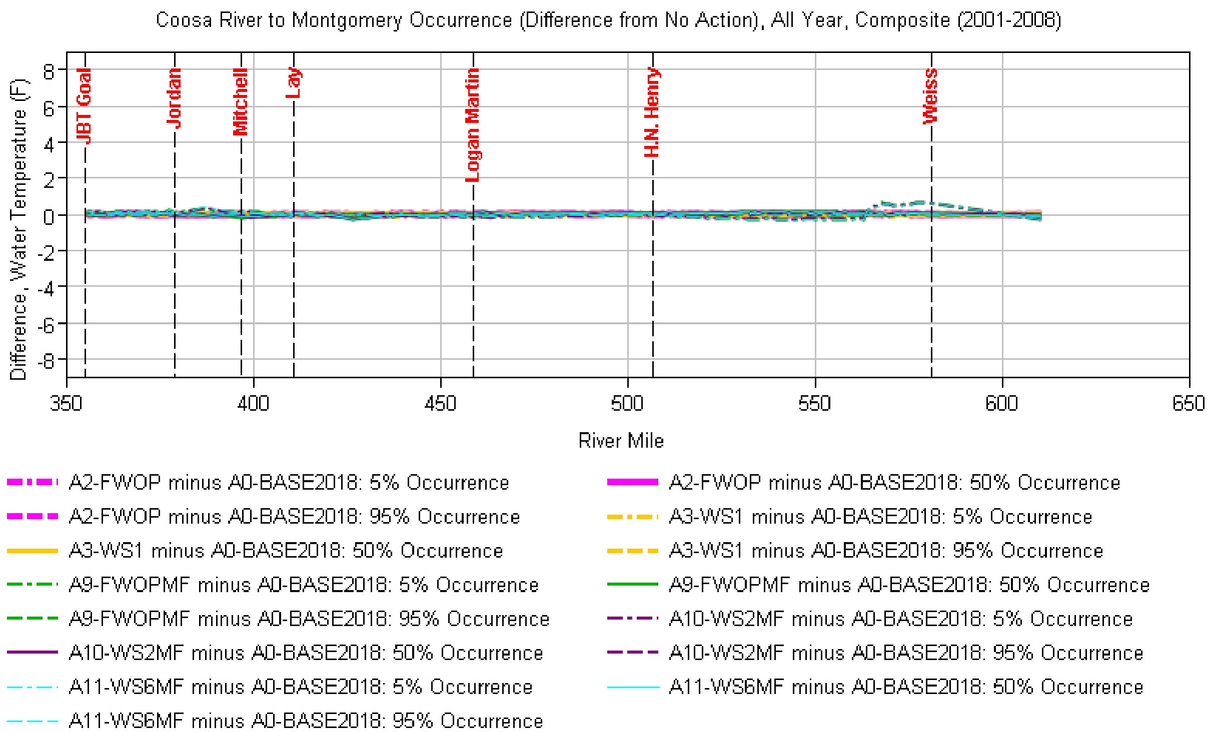


Figure D-27. Water Temperature Occurrence Difference from the NAA for the Coosa River (2001–2008).

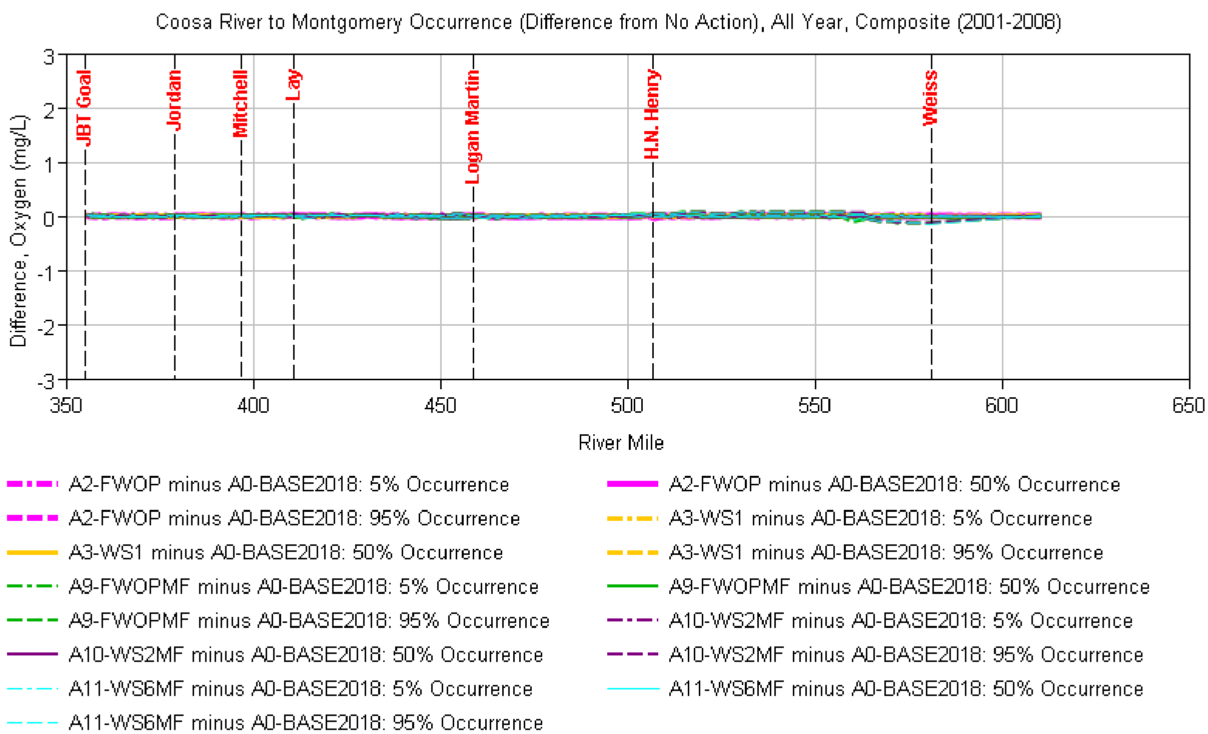


Figure D-28. DO Occurrence Difference from the NAA for the Coosa River (2001–2008).

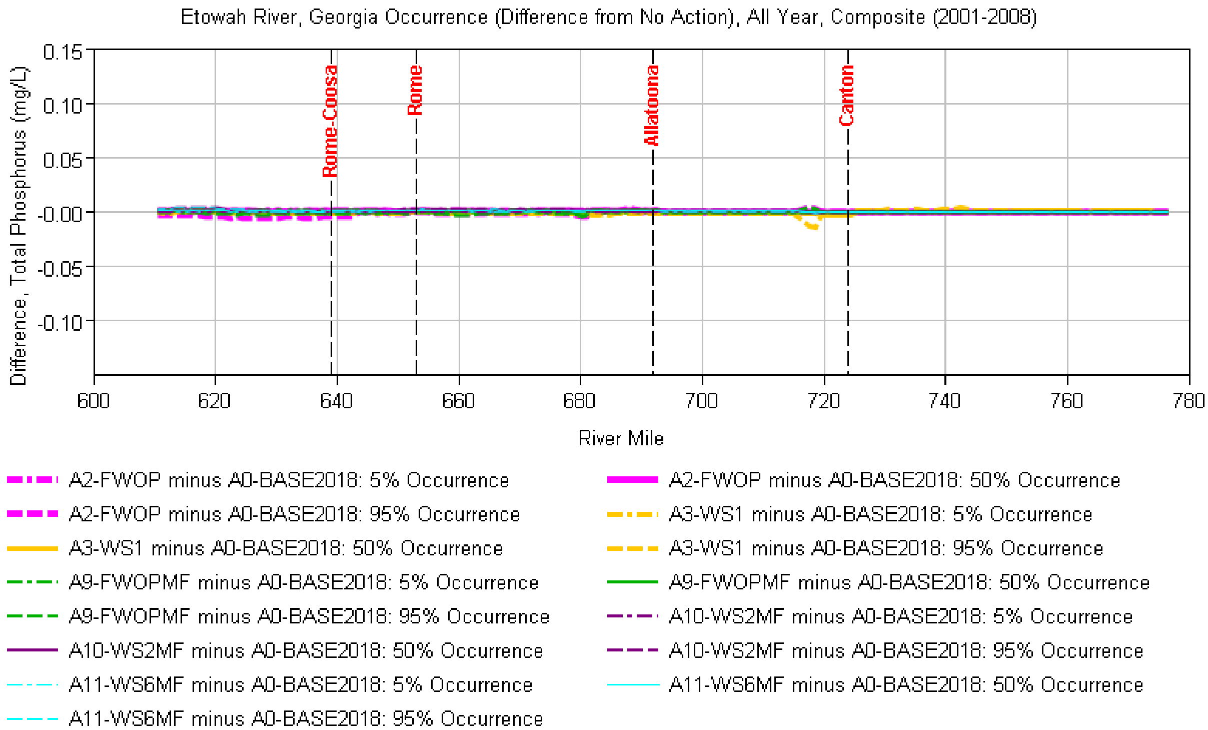


Figure D-29. TP Occurrence Difference from the NAA for the Etowah River (2001–2008).

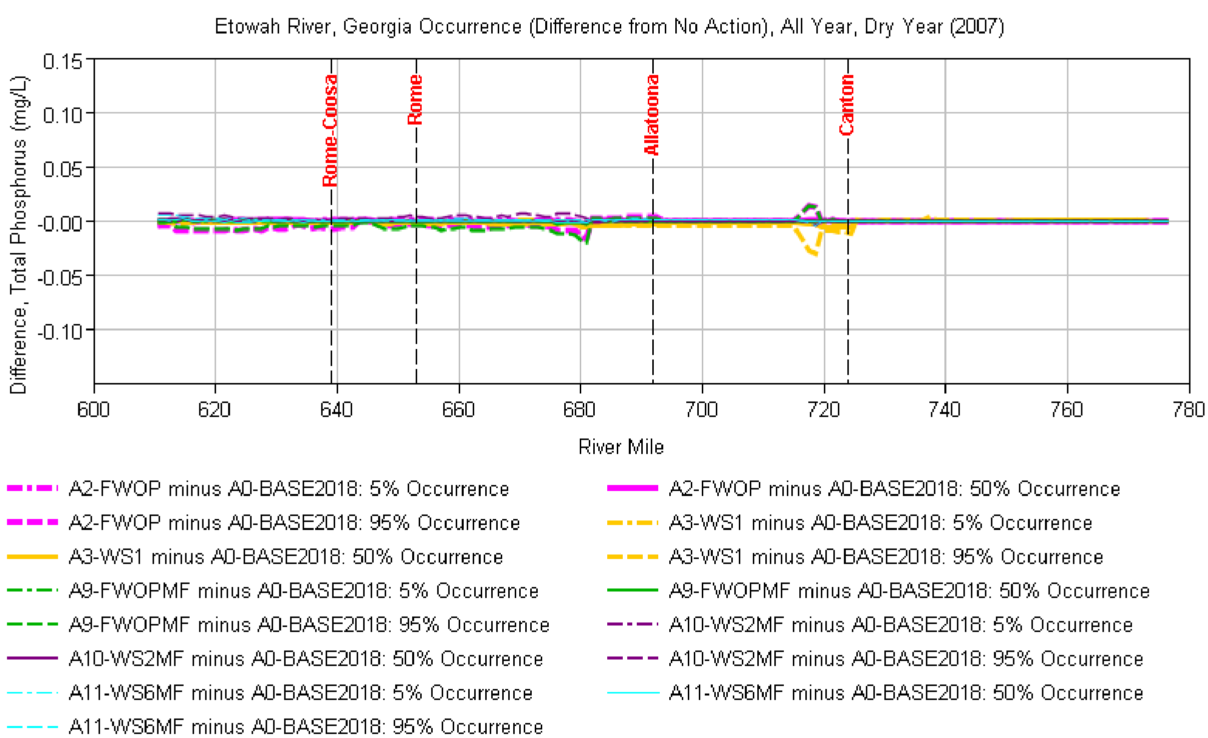


Figure D-30. TP Occurrence Difference from the NAA for the Etowah River (2007 dry year).

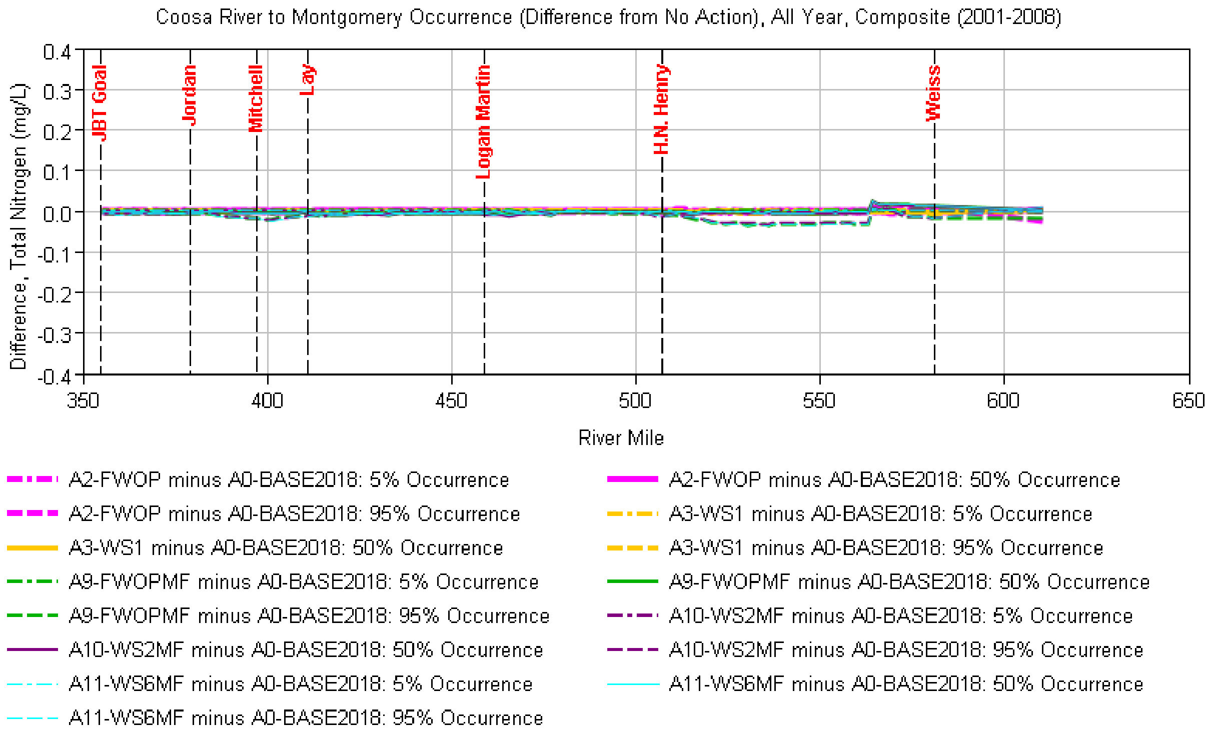


Figure D-31. TN Occurrence Difference from the NAA for the Coosa River (2001–2008).

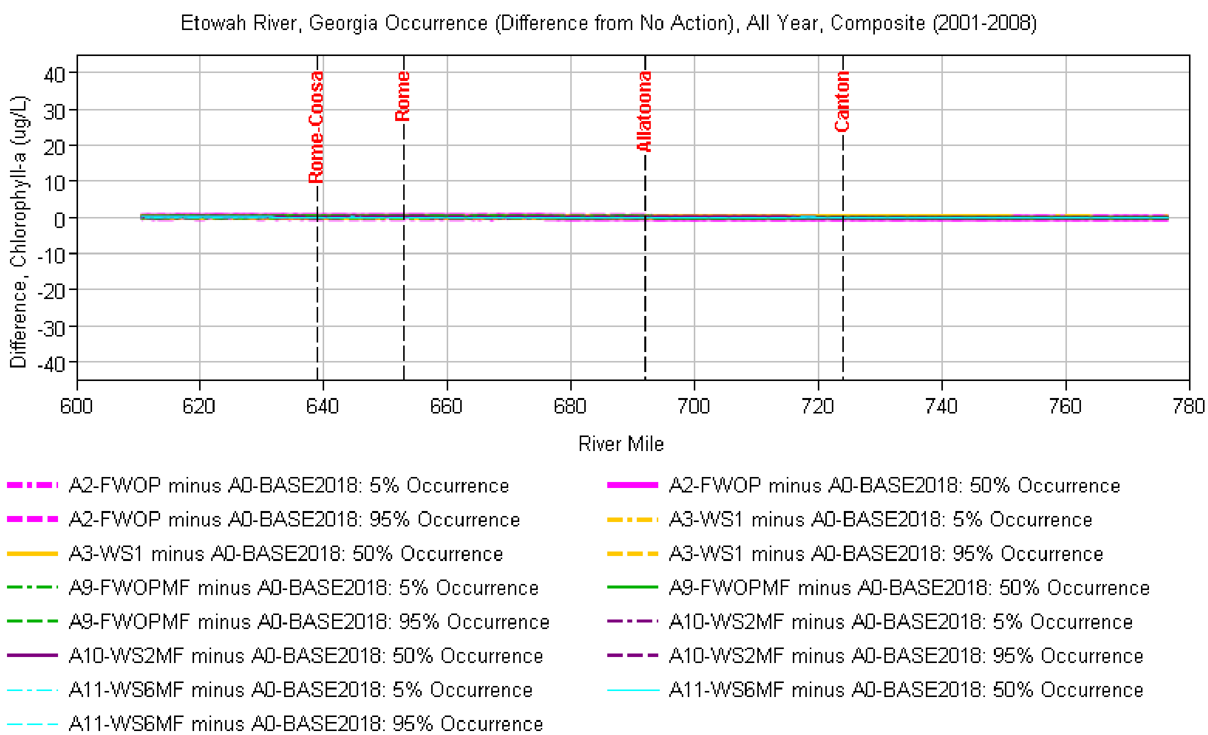


Figure D-32. Chlorophyll a Occurrence Difference from the NAA for the Etowah River (2001–2008).

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environment Division

Mr. William Pearson
Field Supervisor
U.S. Fish and Wildlife Service
Alabama Ecological Services Field Office
1208-B Main Street
Daphne, Alabama 36526

Dear Mr. Pearson:

I am writing in regards to the U.S. Army Corps of Engineers, Mobile District Biological Assessment (BA) for the proposed Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Water Control Manuals (ACR Study). The BA was submitted to you by letter dated November 25, 2019. As requested by your staff on January 9, 2020, and April 2, 2020, we are submitting the amended BA which addresses the additional information requested for the amber darter, whorled sunflower, and designated critical habitat units in primary tributaries within the region of influence for the ACR Study. Mr. Donald Imm from USFWS Georgia Ecological Field Service Office, RG Stephens Jr. Federal Building, 355 East Hancock Ave, Room 320, Athens, Georgia 30601 has been furnished copies of the BA for review and comment.

Thank you for your continued assistance in this ACR Study. If you have any questions regarding the BA or wish to discuss the proposed action in more detail, please contact Ms. Tonya Dunn by email at tonya.n.dunn@usace.army.mil or by phone at (251) 690-2040.

Sincerely,

NETTLES.TODD.A.1245179835 Digitally signed by NETTLES.TODD.A.1245179835 Date: 2020.05.11 10:19:18 -05'00'

Todd A. Nettles
Acting Chief, Planning and Environmental Division

Enclosure

Biological Assessment

Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Project Water Control Manuals

November 2019
Updated May 2020

Prepared For:
USACE, Mobile District
109 Saint Joseph Street
Mobile, AL 36602

Prepared By:
Tetra Tech, Inc.
1899 Powers Ferry Rd SE, Suite 400
Atlanta, Georgia 30339

Biological Assessment

Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Project Water Control Manuals
Dated November 2019

ERRATA SHEET
May 2020

The following corrections, clarifications and augmentations are made to the Biological Assessment to address comments from the USFWS, and to address comments received as part of the public comment period for the FR/SEIS:

Section 1.0 Introduction

p. 4. Added an asterisk by Amber Darter in Table 1-1.

Section 5.3 Protected Fish Species

p. 16-17. Edited section introduction to indicate that the amber darter inhabits the Etowah River and added a subsection (Section 5.3.1) with a description of the amber darter.

Section 5.4 Protected Mussel Species

p. 18. Changed the first sentence of the section from "***Table 1-1*** lists 13 federally protected mussel species within the Coosa and Etowah river basins; however, just 10 of those species inhabit the main stem …" to "***Table 1-1*** lists 13 federally protected mussel species within the Coosa and Etowah river basins, and 10 of those species inhabit the main stem…."

Section 5.5 Protected Snail Species

p. 20. Changed the first sentence of the section from "***Table 1-1*** lists seven federally protected snail species within the Coosa River and Etowah River basins; however, just four of those species inhabit the main stem…" to "***Table 1-1*** lists seven federally protected snail species within the Coosa River and Etowah River basins, and four of those species inhabit the main stem…"

Section 5.6 Protected Flowering Plant Species

p. 21. Changed the first sentence of the section from "***Table 1-1*** lists 17 federally protected flowering plant species within the Coosa River and Etowah River basins; however, just nine of those species have a range …" to "***Table 1-1*** lists 17 federally protected flowering plant species within the Coosa River and Etowah River basins, and nine of those species have a range …"

p. 21. Edited the last sentence in Section 5.6.2 to indicate that critical habitat for Georgia rockcress also includes the Coosa River.

Section 5.7 Critical Habitat

p. 22-30. This section has been updated to include descriptions of designated critical habit units that occur in primary tributaries to the mainstem river segments within the ROI. Table 5-1 describing the designated critical habitat units within the ROI was added. Figure 5-1 was also updated.

Section 7.5 and Section 7.6

p. 38-49. Subsection headers were reformatted/added.

Section 7.7 General Effects on Primary Tributaries within the ROI

p. 49-52. This section on effects to primary tributaries was added to address USFWS request for additional information.

Section 7.8 Federally Protected Species and Critical Habitat

p. 52-68. This section (previously labeled Section 7.7) was updated and reformatted to include designated critical habitat within primary tributaries in the effects analysis, as well as species occurrence to address USFWS request for additional information. .

Section 8.0 Conclusions

p. 69. In the second sentence of the first paragraph, amber darter was added to the list of federally protected species that the proposed action may affect but is not likely to adversely affect. In the second sentence of the second paragraph, amber darter was removed from the list of federally protected species for which the proposed action will have no effect.

p. 70. In the last sentence of the third paragraph, Amber darter was removed from the list of species having critical habitat within the ROI, and Georgia rockcress was added to the list of species having critical habitat within the ROI. The fourth paragraph was updated to reflect the primary tributaries were included in the effects analysis.

Section 9.0 References

p. 71-74. The references were updated to include sources used for information in Section 7.7.

Note: Appendices to the November 2019 Biological Assessment document were not updated/edited.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

This purpose of this biological assessment (BA) is to assess the effects of two specific actions that were deferred from consideration during the update of the Alabama-Coosa-Tallapoosa (ACT) River Basin Master Water Control Manual, which was completed in 2015. These actions, which were deferred pending completion of additional detailed studies are (1) a request from the State of Georgia to reallocate additional reservoir storage in Allatoona Lake to municipal and industrial (M&I) water supply and (2) an Alabama Power Company (APC) request to modify federally authorized flood operations at the APC Weiss and Logan Martin projects. These requests are evaluated in the *Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Project Water Control Manuals — Draft Feasibility Report and Integrated Supplemental Environmental Impact Statement* (FR/SEIS).

The overall study area for the Draft FR/SEIS is the Alabama-Coosa-Tallapoosa (ACT) River Basin. The ACT River Basin comprises the Alabama, Coosa, and Tallapoosa rivers and all areas within the basin boundaries. It stretches from the headwaters of the Coosa and Tallapoosa rivers downstream to the mouth of the Alabama River, where that river joins the Tombigbee River to form the Mobile River. At the ACT River Basin's confluence with the Tombigbee River, it has a drainage area of 22,739 square miles (sq mi) and covers portions of the states of Alabama, Georgia, and Tennessee. ***Figure 1-1*** shows the ACT River Basin and identifies reservoir projects in the basin.

The United States Army Corps of Engineers (USACE) operates the following five multipurpose reservoir projects in the ACT River Basin:

- Allatoona Dam and Lake, GA (Etowah River)
- Carters Dam and Lake/Carters Reregulation Dam, GA (Coosawattee River) (functions as a single system).
- Robert F. Henry Lock and Dam (L&D) and R.E. "Bob" Woodruff Lake, AL (Alabama River)
- Millers Ferry L&D and William "Bill" Dannelly Lake, AL (Alabama River)
- Claiborne L&D and Lake, AL (Alabama River).

In addition, USACE is responsible for navigation channel maintenance for the portion of the Alabama River from river mile (RM) 0 to Claiborne L&D at RM 72 and within the three L&D pools upstream to the head of navigation at Montgomery, AL.

APC operates 11 reservoir projects in the ACT River Basin for the primary purpose of generating hydroelectric power (hydropower), although those projects provide other public benefits as well. Under Public Law (P.L.) 83-436 (June 28, 1954), USACE is responsible for operational oversight of flood risk management (formerly referred to as flood control) and commercial navigation support for four of the APC reservoir projects in the ACT River Basin:

- Weiss Dam and Lake, AL (Coosa River)
- H. Neely Henry Dam and Lake, AL (Coosa River)
- Logan Martin Dam and Lake (Coosa River)
- R.L. Harris Dam and Lake (Tallapoosa River).

The USACE Master Water Control Manual (Master Manual) for the ACT River Basin and individual project Water Control Manuals (WCMs) guide operations at the five USACE reservoir projects and the four APC reservoir projects with federally authorized flood risk management and navigation support purposes.

The update of the ACT River Basin Master Manual and project WCMs, supported by an Environmental Impact Statement (EIS), was completed in May 2015. The USACE Mobile District submitted a BA to the U.S. Fish and Wildlife Service for the proposed Master Manual update on February 18, 2014 (**Appendix A**), as well as an addendum to the BA on March 19, 2014 (**Appendix B**). USFWS completed informal consultation under Section 7 of the Endangered Species Act (ESA) by letter dated March 20, 2014, concurring with the BA as amended (**Appendix C**). The deferred actions described above were not addressed in the 2014 BA or in the USFWS March 20, 2014 concurrence letter.

The Draft FR/SEIS addresses the benefits, costs, and environmental effects associated with a Tentatively Selected Plan (TSP) and alternatives to address the two actions deferred from the 2015 ACT River Basin Master Manual update. The Draft FR/SEIS describes the entire ACT River Basin as the overall study area, consistent with the previous WCM update process, and maintains a basin-wide focus in considering the environmental effects of the proposed actions. However, the specific federal actions considered in the Draft FR/SEIS will affect only a portion of the overall ACT River Basin, referred to as the Region of Influence (ROI). This ROI is synonymous with the action area. It is defined later in this section and is fully described in Section 4.0 and shown in ***Figure 4-1***.

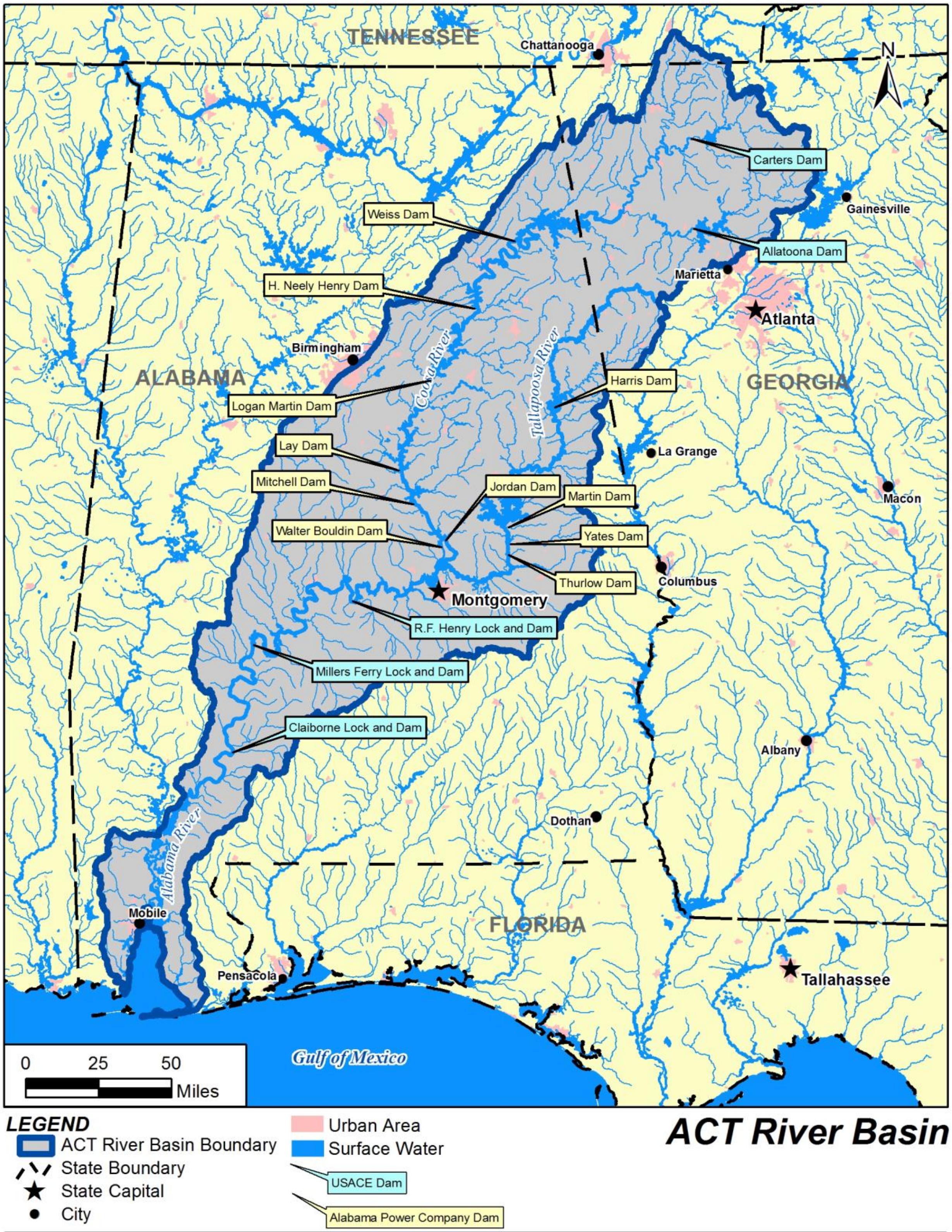


Figure 1-1. Map of ACT River Basin and Project Locations.

The ACT River Basin supports a wide variety of wildlife and is home to approximately 230 species that are protected by the federal government and the states according to the 1998 draft EIS and the 2003 Biological Assessment addressing project operations in the ACT River Basin (USACE Mobile District, 1998) (USACE Mobile District, 2003). The Draft FR/SEIS and this BA focus on the Coosa River and Etowah River basins, which includes the ROI. According to recent USFWS Official Species Lists, there are 57 federally protected species associated with these river basins, which have the greatest potential to be affected by changes in water management operations in the basin. These species are listed in ***Table 1-1***, with their state status. It should be noted that ***Table 1-1*** has been updated from the corresponding table in the main report and in Appendix E of the Draft FR/SEIS based on corrections and updated species lists. Of the 57 potentially affected species, 20 are endemic to the ACT River Basin. Critical habitat for all federally protected species in the ACT River Basin is shown in ***Figure 5-1***.

Table 1-1. Listed Species Potentially Affected by USACE Proposed Action

Scientific name	Common name[a]	Endemic[b]	Federal status[c]	Alabama status[c]	Tennessee status[c]	Georgia status[c]
Mammals						
Myotis grisescens	**Gray Bat*	—	E	SP	—	E
Myotis sodalis	**Indiana Bat*	—	E	SP	—	E
Myotis septentrionalis	**Northern Long-Eared Bat*	—	T	SP	—	T
Birds						
Picoides borealis	**Red-Cockaded Woodpecker*	—	E	SP	—	—
Mycteria americana	**Wood Stork*	—	T	SP	—	—
Reptiles						
Clemmys muhlenbergii	*Bog Turtle*	—	SAT	—	—	E
Sternotherus depressus	*Flattened Musk Turtle*	Y	T	SP	—	—
Amphibians						
Necturus alabamensis	*Black Warrior (=sipsey Fork) Waterdog*	—	E	SP	—	—
Fish						
Percina antesella	**Amber Darter*	—	E	—	—	E
Cyprinella caerulea	**Blue Shiner*	Y	T	SP	—	E
Notropis cahabae	*Cahaba Shiner*	—	E	SP	—	—
Etheostoma scotti	**Cherokee Darter*	Y	T	—	—	T
Percina jenkinsi	*Conasauga Logperch*	Y	E	—	—	E

Scientific name	Common name[a]	Endemic[b]	Federal status[c]	Alabama status[c]	Tennessee status[c]	Georgia status[c]
Etheostoma etowahae	**Etowah Darter*	Y	E	—	—	E
Percina aurolineata	*Goldline Darter*	Y	T	SP	—	E
Cottus paulus	*Pygmy Sculpin*	Y	T	SP		
Etheostoma phytophilum	*Rush Darter*	—	E	SP	—	—
Percina tanasi	*Snail Darter*	—	T	SP	—	E
Etheostoma trisella	*Trispot Darter*	Y	T	SP	T	E
Etheostoma chermocki	*Vermilion Darter*	—	E	SP	—	—
Mussels (Clams)						
Medionidus acutissimus	**Alabama Moccasinshell*	—	T	SP	—	T
Medionidus parvulus	**Coosa Moccasinshell*	Y	E	SP	—	E
Villosa trabalis	*Cumberland Bean*	N	E	—	—	—
Pleurobema furvum	*Dark Pigtoe*	—	E	—	—	—
Lampsilis altilis	**Fine-lined Pocketbook*	—	T	—	—	—
Pleurobema hanleyianum	**Georgia Pigtoe*	Y	E	SP	—	E
Lampsilis perovalis	*Orangenacre Mucket*	—	T	—	—	—
Pleurobema perovatum	**Ovate Clubshell*	—	E	SP	—	—
Epioblasma othcaloogensis	**Southern Acornshell*	Y	E	SP	—	—
Pleurobema decisum	**Southern Clubshell*	—	E	SP	—	E
Pleurobema georgianum	**Southern Pigtoe*	Y	E	SP	—	E
Ptychobranchus greenii	**Triangular Kidneyshell*	—	E	SP	—	E
Epioblasma metastriata	**Upland Combshell*	—	E	SP	—	—
Snails						
Lioplax cyclostomaformis	*Cylindrical Lioplax (snail)*	Y	E	SP	—	—
Leptoxis foremani	**Interrupted (=georgia) Rocksnail*	Y	E	SP	—	E
Elimia crenatella	*Lacy Elimia (snail)*	Y	T	SP	—	—
Leptoxis taeniata	**Painted Rocksnail*	Y	T	SP	—	—
Leptoxis plicata	*Plicate Rocksnail*	—	E	SP	—	—

Scientific name	Common name[a]	Endemic[b]	Federal status[c]	Alabama status[c]	Tennessee status[c]	Georgia status[c]
Pleurocera foremani	**Rough Hornsnail*	*Y*	*E*	*SP*	—	—
Tulotoma magnifica	**Tulotoma Snail*	*Y*	*T*	*SP*	—	—
Flowering Plants						
Sarracenia rubra ssp. alabamensis	*Alabama Canebrake Pitcher-Plant*	*Y*	*E*	—	—	—
Clematis socialis	**Alabama Leather Flower*	*Y*	*E*	—	—	*E*
Spigelia gentianoides	*Gentian Pinkroot*	—	*E*	—	—	—
Arabis georgiana	**Georgia Rockcress*	—	*T*	—	—	*T*
Sarracenia oreophila	**Green Pitcher-Plant*	—	*E*	—	—	*E*
Ptilimnium nodosum	**Harperella*	—	*E*	—	—	—
Sagittaria secundifolia	*Kral's Water-Plantain*	—	*T*	—	—	*T*
Scutellaria montana	**Large-Flowered Skullcap*	—	*T*	—	—	*T*
Rhus michauxii	*Michaux's Sumac*	—	*E*	—	—	*E*
Marshallia mohrii	**Mohr's Barbara's Buttons*	—	*T*	—	—	*T*
Isotria medeoloides	*Small Whorled Pogonia*	—	*T*	—	—	*T*
Helonias bullata	*Swamp Pink*	—	*T*	—	—	*T*
Pityopsis ruthii	*Ruth's Golden Aster*	—	*E*	—	—	—
Xyris tennesseensis	**Tennessee Yellow-Eyed Grass*	—	*E*	—	—	*E*
Spiraea virginiana	*Virginia Spiraea*	—	*T*	—	—	*T*
Platanthera integrilabia	**White Fringeless Orchid*	—	*T*	—	—	*T*
Helianthus verticillatus	**Whorled Sunflower*	—	*E*	—	—	*E*

Sources: (USFWS, 2019b) (USFWS, 2019c) (USFWS, 2019d) (USFWS, 2019a) (ANHP, 2017) (ADCNR, 2019a) (GADNR, 2019) (TWRA, 2019) (Tennessee Department of State, 2016).
Notes:
a. * = Species range includes part of the ROI and the species is discussed further in Section 5.0.
b . Y = endemic to ACT River Basin.
c. Status. E = listed as endangered; SAT = similarity of appearance, threatened; SP = state protected; T = threatened.

Seven species listed in ***Table 1-1*** have been determined to have no notable range within the Coosa River or Etowah River Basins - the flattened musk turtle, black warrior waterdog, rush darter, vermilion darter, dark pigtoe, and plicate rocksnail are mainly found in the Black Warrior River Basin and the snail darter is found only in the Tennessee River Basin. These species appear in the USFWS Official Species Lists (USFWS, 2019b) (USFWS, 2019c), likely due to a slight overlap in the GIS shapefile of the ACT River Basin and the ranges of these species, however, they are not believed to inhabit the affected environment.

The rest of the species listed in ***Table 1-1*** have a dependence on the aquatic environment or occur in geographic proximity to the aquatic environments of the ACT River Basin. However, the only areas that show any water quality or water quantity effect under the proposed federal actions are the main stem of the Etowah River downstream of its confluence with Hickory Log Creek at Canton, GA; the main stem of the Coosa River downstream to its confluence with the Tallapoosa River near Montgomery, AL; and the reservoirs along those rivers. These areas comprise the ROI. Species outside of this ROI (i.e. those restricted to upland areas and tributaries to the affected rivers) will have negligible or no effect from flow regime or water quality changes and these species are not addressed in detail in this BA. For example, the pygmy sculpin is found only in Coldwater Spring and the spring run, well above the Coosa River by several tributary watersheds; and the trispot darter only inhabits tributaries and small streams. Species ranges were confirmed from maps on the U.S. Fish and Wildlife Service Environmental Conservation Online System (ECOS) website (USFWS, 2019a).

The mammals, birds, fish, mussels, snails, and plants with a current range that includes part of the ROI are identified with an asterisk in ***Table 1-1***. Details about the habitat requirements of each of these species are provided in Section 5.0 (Status of the Species/Critical Habitat). The effects analysis, detailed in Section 7.0 of this report, documents the extent and degree of water quality and quantity changes that could affect these species.

2.0 PURPOSE AND NEED

In May 2015, USACE completed a long-term effort to update the Master Manual for the ACT River Basin, including updating WCMs for all five USACE projects described in Section 1.0 and two of the four APC projects with navigation support and flood risk management purposes (H. Neely Henry Dam and Lake, and R.L. Harris Dam and Lake). WCMs for the other two APC projects, Logan Martin Dam and Lake (or Reservoir) and Weiss Dam and Lake (or Reservoir), were not updated at that time. A pending, January 24, 2013, request from the State of Georgia for additional water supply storage in Allatoona Lake was also not included within the scope of the 2015 WCM update and EIS effort.

On January 9, 2018, the U.S. District Court for the Northern District of Georgia issued a judgment in *Georgia et al. v. U.S. Army Corps of Engineers,* Civil Action No. 1:14-cv-03593, holding that USACE had unreasonably delayed taking action on Georgia's water supply request, and directing USACE to take final action responding to that request by March 1, 2021. The Georgia Environmental Protection Division (GAEPD), representing the State of Georgia, submitted an updated request to USACE on March 30, 2018, on behalf of the Cobb County-Marietta Water Authority (CCMWA) and the City of Cartersville, GA. GAEPD requested that USACE reallocate additional reservoir storage, above the current water supply storage contract at Allatoona Lake to meet a total projected average daily water supply withdrawal demand of 94 million gallons per day (mgd) through the year 2050. Further, GAEPD maintained its request from January 2013 that USACE consider revising its storage accounting practices to provide credit for "made inflows"—returns from two water reclamation facilities in Cobb County, GA, and releases by CCMWA from the Hickory Log Creek Reservoir to the Etowah River and, subsequently, into Allatoona Lake for water supply withdrawal. The Draft FR/SEIS considers and evaluates actions necessary to respond to Georgia's request, including reasonable alternatives.

USACE did not include updates to the WCMs for the APC Weiss and Logan Martin reservoir projects in the 2015 ACT River Basin Master Manual update because changes to flood operations proposed by APC required further detailed study of flood risk at both projects. The Draft FR/SEIS evaluates the flood risk and other impacts associated with APC's proposal to raise the winter pool level for recreation and lower the maximum induced surcharge elevation at both the Weiss and Logan Martin projects. The results of this evaluation will provide the basis for appropriate updates to the WCMs for the APC Weiss and Logan Martin projects.

USACE has prepared documentation in compliance with the National Environmental Policy Act (NEPA) (Title 42 of the *United States Code* [U.S.C.] § 4321 *et seq.*); the Council on Environmental Quality (CEQ) regulations for implementing NEPA (Title 40 of the *Code of Federal Regulations* [CFR] Parts 1500–1508); and USACE Engineer Regulation (ER) 200-2-2, *Procedures for Implementing NEPA*, to address the environmental effects associated with the proposed actions described above. Because USACE is concurrently considering proposals to modify operations and update WCMs at three different ACT River Basin projects, USACE has evaluated the effects of those proposals through a single SEIS to supplement the Final EIS for the ACT River Basin WCM update completed in May 2015. As part of this analysis, USACE considered the effects of the proposed changes on operations of the ACT River Basin system of projects for all purposes and has revised the ACT River Basin Master Manual to incorporate the updated Allatoona Dam and Lake, Weiss Dam and Lake, and Logan Martin Dam and Lake WCMs and to reflect changes in overall system operations. Appendix A of the Draft FR/SEIS provides the three revised WCMs.

3.0 PROPOSED ACTION

The Tentatively Selected Plan (TSP) is identified as Alternative 11 in the Draft FR/SEIS. The TSP involves Allatoona Lake storage reallocation to enable withdrawals up to 94 mgd from a combination of flood storage and conservation storage, using USACE current storage accounting methodology, and modified flood operations at the APC Weiss and Logan Martin projects. An overview of the proposed changes to water supply storage at Allatoona Lake and proposed changes to flood operations at APC Weiss and Logan Martin projects are provided in Sections 3.1 and 3.2. Details on effects regarding water quantity (such as lake levels) and water quality are provided in Sections 7.5 and 7.6. Conservation measures are not proposed as part of the proposed action. Any current conservation measures that are being used in the system (fish spawning practices at Allatoona Dam and Lake, measures to promote fish passage through Claiborne Lock and Dam, etc.) are expected to continue, but will not affect protected species in the ROI with respect to the proposed action.

3.1 PROPOSED CHANGES TO WATER SUPPLY STORAGE AT ALLATOONA LAKE

In its revised water supply request to USACE on March 30, 2018, GAEPD requested that USACE enter into a storage contract providing enough storage in Allatoona Lake to enable Georgia users to sustain annual average withdrawals from the reservoir of 94 mgd through year 2050. That amount is substantially lower than the range of 124–148 mgd through year 2040 presented in the state's 2013 water supply request. This change was based on revised population estimates and dramatically lower per capita water-use values directly associated with implementing multiple water conservation and efficiency measures within the Metropolitan North Georgia Water Planning District (MNGWPD) since 2010. GAEPD also requested that USACE specify how much storage it can reallocate and explain in detail its reasoning, if it determines not to grant the entire storage capacity requested to support the stated water supply demand.

The State of Georgia recognized that the storage capacity required to support average annual withdrawals of 94 mgd will depend upon the assumptions USACE makes about the relationship between storage capacity and yield. They include assumptions about the total natural inflow to Allatoona Lake; the extent to which natural inflows are augmented by made inflows (consisting of releases from the Hickory Log Creek Reservoir and return flows to Allatoona Lake); the manner in which made inflows are allocated to users; the rule used to determine when storage space allocated to water supply users is full; and the rule used to determine each user's share of conservation storage for purposes of allocating natural inflows to the project. USACE's assumptions, which the state's request separated into two categories—made inflows and other storage accounting issues—are reflected in the storage accounting practices USACE applies at Allatoona Lake and other reservoir projects. The state disagrees with those assumptions and has requested that USACE resolve all storage accounting issues consistent with the state's position.

The state's January 2013 request sought changes to the USACE storage accounting practice and included a specific request to credit the made inflows from the Hickory Log Creek Reservoir and return flows to Allatoona Lake. Subsequent to the State of Georgia's 2013 request, the Georgia Department of Natural Resources (GADNR) promulgated rules clarifying GAEPD's authority and procedures for allocating made inflows to particular users (Georgia Compiled Rules and Regulations [Ga. Comp. R. & Regs.] 391-3-6-.07(2)(o) and (16)(a)). Pursuant to that authority, the State of Georgia has allocated certain made inflows to CCMWA, which is reflected in GAEPD Permit No. 008-1491-05 (modified Nov. 7, 2014) ("CCMWA's permit"). The State of Georgia requested that USACE honor CCMWA's permit (and any subsequent renewal), which grants CCMWA the exclusive right to impound water released from Hickory Log Creek Reservoir and certain return flows in CCMWA's existing storage space in Allatoona Lake, subject to available space in CCMWA's storage. Further, the state requested that USACE credit made inflows in accordance with any future allocations by the GAEPD.

In addition, CCMWA and the state also have other outstanding issues with USACE storage accounting practices at Allatoona Lake that are the subject of ongoing litigation between CCMWA and USACE (*Cobb County-Marietta Water Authority v. U.S. Army Corps of Engineers,* Civil Action No. 1:17-cv-400-RWS [N.D. Ga.]) (the "Storage Accounting Litigation"). The State of Georgia has requested that USACE determine that water supply storage accounts in Allatoona Lake must be full whenever conservation storage, as defined by the project's guide curve, is full. The state asserts that USACE's current storage accounting practices improperly allocate natural inflows (all inflows that are not *made inflows*) using a fixed percentage of conservation storage, even though CCMWA's *pro rata* share of conservation storage increases in the winter when the volume of conservation storage is reduced. The state has requested USACE to allocate natural inflows to users in proportion to the percentage of conservation storage held by a user at the time the inflow occurs, as defined by the top-of-conservation guide curve.

The reallocation of reservoir storage for water supply purposes could come from the conservation storage only, from a combination of conservation storage and flood storage, or from flood storage only.

3.2 PROPOSED CHANGES TO FLOOD OPERATIONS AT APC WEISS AND LOGAN MARTIN PROJECTS

APC proposes revisions to flood operation plans for the Weiss and Logan Martin projects, which include raising the winter guide curve elevation at each project, lowering the upper limit of the induced surcharge operation at each reservoir, and making some adjustments to the operating rules during flood events. Current water control plans for the Weiss and Logan Martin projects include induced surcharge curves with elevations higher than the flood easements acquired by APC at each project. APC variance requests, evaluated and approved by USACE, have been necessary to avoid/minimize exceedances of APC flood easements at these reservoirs during major flood events. USACE evaluation of, and concurrence with, the APC-proposed modifications to the Weiss and Logan Martin flood operation plans should preclude the need for such variance requests in the future.

In May 2018, USACE and APC established a Hydrologic Engineering Management Plan (HEMP) to address the long-standing issues related to flood operations at the APC Weiss and Logan Martin projects. The HEMP outlines historic events used to evaluate the higher winter pools and revised surcharge curves using the USACE Hydrologic Engineering Center Reservoir System Simulation (HEC-ResSim) model.

3.2.1 Weiss Dam and Lake

APC proposes to increase the project guide curve level during the winter months (December–February) at Weiss Dam and Lake from elevation 558 ft to elevation 561 ft and to reduce the maximum surcharge elevation (top of flood pool) from elevation 574 ft to elevation 572 ft. In addition, APC has proposed to extend the summer guide curve elevation of 564 ft from September 1 to October 1. The current maximum surcharge elevation is 2 ft higher than the APC flood easement elevation of 572 ft for Weiss Lake. The proposed changes would result in a 30-percent reduction in flood storage during the winter months and a 24-percent reduction in flood storage in the summer months. In conjunction with these elevation changes, APC proposes to modify the current Flood Regulation Schedule for Weiss Dam in order to operate with no appreciable increase in flood risk. ***Figure 3-1*** depicts the proposed changes to the project guide curve and maximum surcharge elevation, and ***Table 3-1*** summarizes the proposed changes to flood operations.

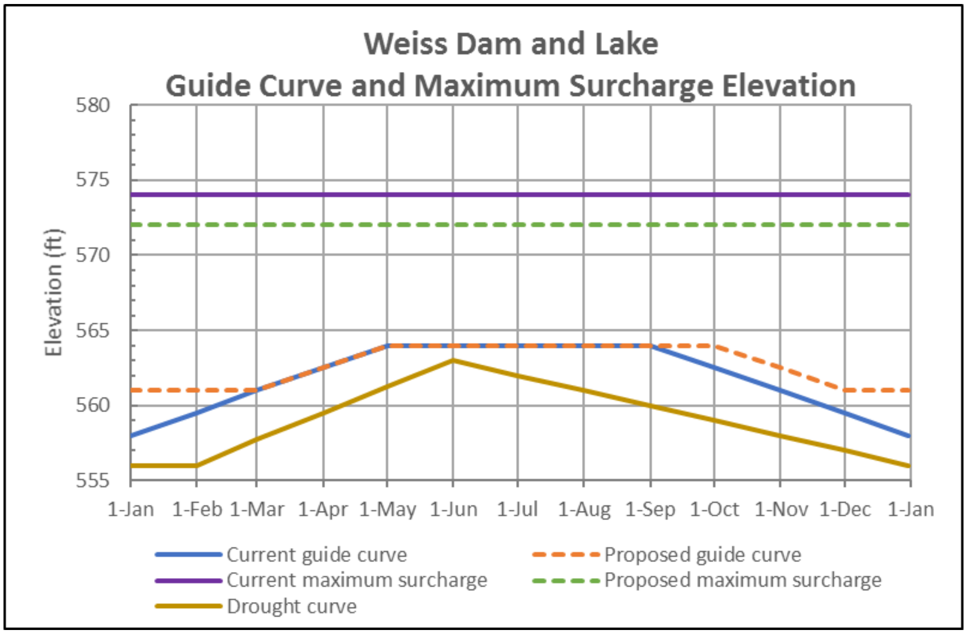


Figure 3-1. Weiss Dam and Lake—Proposed Changes to Guide Curve and Maximum Surcharge Elevation.

Table 3-1. Weiss Dam—Proposed Flood Regulation Schedule.

Rule	Condition	Outflow	Proposed Operation	Proposed change
1	Below project guide curve	Ranging up to full discharge capacity of power plant	Operate power plant as required to satisfy normal system load requirements.	None
2	At project guide curve and below elevation 564.0 ft	Ranging up to full discharge capacity of power plant	Releases shall be made through power plant at rates up to continuous operation at plant capacity (3 units at full gate) as required to keep reservoir stage at or below the project guide curve as long as the pool level is below elevation 564.0 ft.	None
3	Above project guide curve and below elevation 564.0 ft	Full discharge capacity of power plant	Releases shall be made through the power plant operating continuously at plant capacity (3 units at full gate) until reservoir stage: • Recedes to project guide curve, after which rule 2 applies, or • Reaches elevation 564.0 ft, after which rule 4 applies.	None
4	At elevation 564.0 ft	Ranging up to 40,000 cfs	Maintain reservoir stage at elevation 564.0 ft by passing the inflow up to 40,000 cfs. Releases will be made through the power plant operating continuously at plant capacity (3 units at full gate) supplemented by spillway discharge as required.	None

Rule	Condition	Outflow	Proposed Operation	Proposed change
5	Rising above elevation 564.0 ft	40,000 cfs unless higher rate is specified by induced surcharge schedule	Maintain total discharge of 40,000 cfs by discharging through the power plant operating continuously at plant capacity (3 units at full gate) supplemented by spillway discharge as required. Continue this operation until: • Reservoir stage recedes to elevation 564.0 ft, after which rule 4 applies, or • Reservoir stage and rate of inflow are such that a higher rate of outflow is required by induced surcharge schedule, in which case rule 6 applies.	None
6	Rising above elevation 564.0 ft with releases above 40,000 cfs as specified by induced surcharge schedule	As specified by induced surcharge schedule	Operate according to induced surcharge schedule, passing the required outflow through the power plant and spillway.	New surcharge curves
7	Stages downstream of Weiss exceed or are expected to exceed flood stage due to local inflows	Reduce up to 50% of surcharge schedule	Temporarily reduce the release prescribed by the plan, provided that the release will not be reduced below 50% of the amount required by the surcharge schedule and that the total addition of floodwaters stored in Weiss Lake will not exceed a volume of 22,500 cfs-days.	Entirely new rule
8	Above elevation 564.0 ft and falling	As specified by induced surcharge schedule	When the reservoir level begins to fall, maintain the gate openings in effect at the time of peak reservoir stage and continue power plant discharge in effect at that time until the reservoir level recedes to elevation 564.0 ft. When the pool recedes to elevation 564.0 ft, rule 4 applies.	None

3.2.2 Logan Martin Dam and Lake

APC proposes to increase the project guide curve level during the winter months (December–March) at Logan Martin Dam and Lake from elevation 460 ft to elevation 462 ft and to reduce the maximum surcharge elevation (top of flood pool) from elevation 477 ft to elevation 473.5 ft. The current maximum surcharge elevation is 3.5 ft higher than the APC flood easement elevation of 473.5 ft for Logan Martin Lake. The proposed changes would result in a 35-percent reduction in flood storage during the winter months and a 35-percent reduction in flood storage in the summer months. In conjunction with the elevation changes, APC proposes to modify the current Flood Regulation Schedule for Logan Martin Dam in order to operate with no appreciable increase in flood risk. ***Figure 3-2*** depicts the proposed changes to the project guide curve and maximum surcharge elevation, and ***Table 3-2*** summarizes the proposed changes to flood operations.

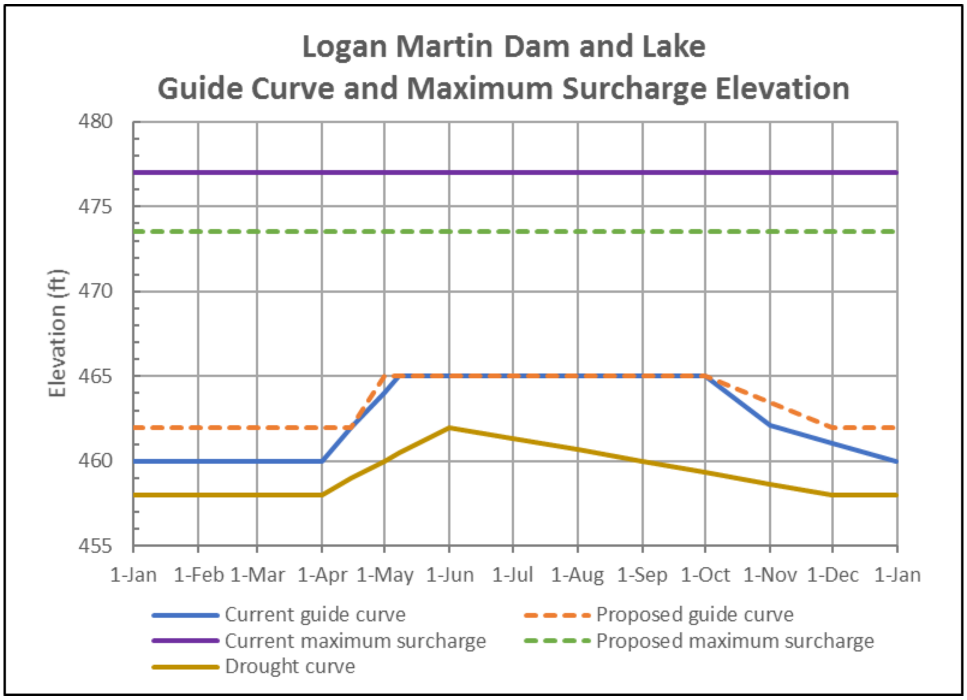


Figure 3-2. Logan Martin Dam and Lake—Proposed Changes to Guide Curve and Maximum Surcharge Elevation.

Table 3-2. Logan Martin Dam—Proposed Flood Regulation Schedule.

Rule	Condition	Outflow	Operation	Proposed change
1	Below project guide curve	Up to plant capacity.	Operate power plant as required to satisfy normal system load requirements.	None
2	Below project guide curve, Weiss Lake above elevation 564.0 ft, and inflow into Logan Martin and Weiss lakes at plant capacity and increasing	70,000 cfs	Pull Logan Martin Lake to elevation 460.0 ft by discharging 70,000 cfs. Once it is at elevation 460.0 ft, hold the elevation by passing the hourly inflow.	Entirely new rule
3	At the project guide curve elevation	Ranging up to 70,000 cfs	Maintain reservoir stage at top-of-power pool elevation by passing the inflow up to 70,000 cfs.	Maximum release increased from 50,000 cfs to 70,000 cfs
4	Above the project guide curve elevation and rising	Rate specified by induced surcharge schedule	Operate according to induced surcharge schedule passing the required outflow through the power plant and spillway.	New surcharge curves
5	Above the project guide curve elevation with downstream control in place	Reduce up to 50% of surcharge schedule	Operation dictated by high downstream stages. Reduction in release not to exceed 11,000 cfs-days in added storage.	Entirely new rule

Rule	Condition	Outflow	Operation	Proposed change
6	Above the project guide curve elevation and falling		When the reservoir level begins to fall, maintain the gate openings in effect at the time of peak reservoir stage and continue power plant discharge in effect at that time until the reservoir level recedes to flood control guide elevation.	None

4.0 ACTION AREA

USFWS regulations define “action area” as all areas affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR §402.02). The specific federal actions considered in the Draft FR/SEIS will affect only a portion of the overall ACT River Basin. HEC-ResSim and HEC-5Q model simulation results demonstrated that the effects of the proposed actions, including those of the TSP, would be limited to an ROI defined as the Etowah River at its confluence with Hickory Log Creek at Canton, GA, downstream to its confluence with the Oostanaula River at Rome, GA, including Allatoona Dam and Lake; and the Coosa River at Rome downstream to its confluence with the Tallapoosa River near Montgomery, AL (including Weiss Dam and Lake, Logan Martin Dam and Lake, and other APC reservoirs). The ROI is shown in ***Figure 4-1***.

The proposed federal actions would affect neither the Oostanaula River Basin nor the Tallapoosa River Basin. Accordingly, the action area is limited to the narrowed ROI, which is the area most likely to be affected by the proposed actions. The HEC-ResSim and HEC-5Q models also demonstrated that the proposed federal actions would have no discernable effect on hydrologic conditions, including water quality, in the Alabama River downstream of the confluence of the Coosa and Tallapoosa rivers and further downstream into the Mobile River and Bay. Accordingly, other environmental resources of interest in this portion of the ACT River Basin would not be affected by the proposed federal actions.

Along the river and lake segments in the ROI, the lateral extent of expected effects would generally include the extent of fee or easement interest in adjacent lands by USACE and APC or the base flood plain along the rivers where no fee or easement interests exist.

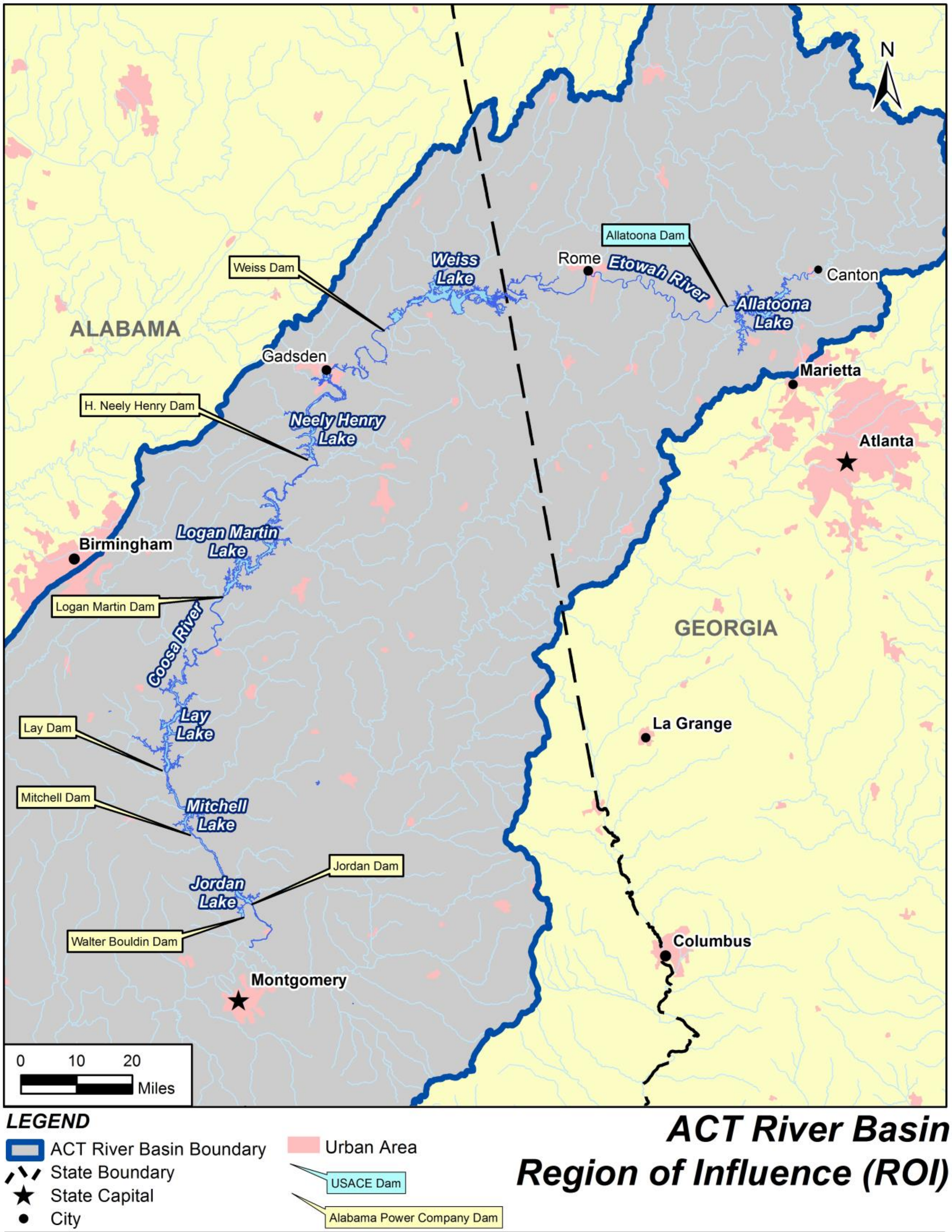


Figure 4-1. Region of Influence for Allatoona-Coosa Reallocation Study Tentatively Selected Plan***.***

5.0 STATUS OF THE SPECIES/CRITICAL HABITAT

Reservoir operations can influence two types of direct or indirect actions that could affect the habitats of federally protected species:

- Alteration of flow regimes in reservoirs and downstream of dams
- Water quality degradation

USACE is responsible for determining project-specific effects on protected species because the effects depend largely on where and how the actions occur. USACE also is responsible for pursuing consultation with USFWS in accordance with Section 7 of the ESA regarding any expected effects on those species.

Little information is available on linkages between flow regime characteristics and the life histories of protected species occurring in the basin. While that is beyond the scope of the current effort, it might be possible to quantify optimal flow regimes for some of or all the riverine-dependent species or even minimum flow regimes that would ensure each species' survival and persistence in the basin. Such an effort would show that some species do best in wet years and others do best in dry years. However, overall biological diversity and ecosystem function benefit from interannual variations in species success (Tilman, Downing, & Wedin, 1994). Previous efforts at riverine ecosystem restoration have demonstrated that it is impossible to simultaneously optimize conditions for all species (Sparks, 1992) (Sparks, 1995) (Toth, 1995). Therefore, the best strategy for protecting the ecology and biodiversity of the basin, including its protected species, is to maintain or restore to some extent the natural patterns of variability of flow regimes throughout the basin.

Riverine communities generally require clean water with sufficiently high dissolved oxygen concentration and appropriate temperatures. Although water quality has improved in the ACT River Basin since the 1970s because of controls on point source pollutant discharges under the Clean Water Act, water quality problems related largely to nonpoint source sedimentation and other contaminants continue in many river reaches. Biological conditions in the ACT River Basin are most severely degraded in the urbanized reaches of the basin (Frick, et al., 1998). Water quality degradation is a frequently cited concern for the riverine-dependent species included in the 1997 report published by Fish and Wildlife Service, *Comprehensive Study's Protected Species Inventory and Identification in the ACT and ACF River Basins—Volume 1* (Ziewitz, Luprek, & Kasbohm, 1997). It is quite likely that water quality is a limiting factor for several of the species, including many of the federally listed mussels listed in ***Table 1-1***. Any actions that could alter water quality must address effects on the protected species.

A complete description of endangered and threatened species in the Coosa River and Etowah River basins (***Table 1-1***) is provided in Section E.1.6.4 of Appendix E of the Draft FR/SEIS. This BA will focus on species that may be found in the action area, as identified from maps of the species' current range on the U.S. Fish and Wildlife Service Environmental Conservation Online System (ECOS) website (USFWS, 2019a).

5.1 PROTECTED MAMMAL SPECIES

5.1.1 Gray Bat (*Myotis grisescens*)

The gray bat roosts and hibernates exclusively in suitable caves in the southeastern US. Less than 5 percent of available caves in the region have the right properties of temperature, humidity, and structure to make them suitable for gray bat occupation. Most foraging occurs within 16 ft of the surface over open water near a forested shoreline. The bats will forage 12 mi or more from the roost sites and seem to prefer traveling within forested areas.

In Georgia, gray bats are known to occupy only three caves regularly during the summer in Catoosa, Chattooga, and Walker counties. The most important caves to gray bats, those that house large populations, are found in Alabama, Arkansas, Kentucky, Missouri, and Tennessee (GADNR, 2009a). Gray bats are known from approximately 40 cave systems in 11 counties in northern Alabama (USACE ERDC, 2007). Shelby County is the only one of these counties that borders the Coosa River.

5.1.2 Indiana Bat (*Myotis sodalis*)

The Indiana bat is known to occur throughout much of the midwestern and eastern United States. The species has been virtually eliminated from much of its former range. Indiana bats gather in large groups in suitable caves to hibernate, with more than 85 percent of the population in just nine caves in Indiana, Kentucky, and Missouri. There are very few records of this species in Georgia, and no known occupied habitat. It has been documented in Georgia in only two caves in Dade County in the northwestern part of the state. The Georgia records are from fall and winter collections. During the summer, Indiana bats roost in trees, usually under loose, exfoliating bark as found on shagbark hickories and dead hardwoods, or in hollow trees. The roost sites are typically at a woodland edge where the trees are warmed by the sun. The bats forage in the surrounding riparian, floodplain, and upland forest, and sometimes over open areas and water as well. There are no known significant hibernacula (that is, with large numbers of bats) in Georgia for this species. The Georgia records are from fall and winter collections; the nearest known maternity colonies are in southern Kentucky (GADNR, 2009b). A 2017 USFWS Indiana bat population status update estimates the Indiana Bat population in Georgia to be 1 based on winter surveys of conducted in January and February of 2017 at known Priority 1 and 2 hibernacula (USFWS, 2017).

5.1.3 Northern Long-Eared Bat *(Myotis septentrionalis)*

The northern long-eared bat is known to occur throughout southern Canada and the central and eastern United States. It is more common in the northern part of its range and has only been documented in northern and western Georgia. Populations of northern long-eared bats in Georgia are small and widely distributed. Most summer roosts occur in tree cavities and under exfoliating bark, but they have also been found in buildings and behind shutters. During winter, northern long-eared bats hibernate in tight crevices in caves and mines. They tend to forage in the canopy of floodplain forests and wooded hillsides (GADNR, 2015).

5.2 PROTECTED BIRD SPECIES

5.2.1 Wood Stork (*Mycteria americana*)

Historically, the breeding range of the wood stork (federally listed as threatened) spanned the southeastern US, extending from South Carolina to Texas (USFWS, 1997). Today, breeding is limited to coastal areas of Florida, Georgia, and South Carolina. Post-breeding storks generally disperse, occasionally occurring as far north as North Carolina and as far west as Alabama and Mississippi (USFWS, 1997). In Alabama, the species is known to forage during summer and early fall in the western Inland Coastal Plain near the Tombigbee River and lakes in Hale, Marengo, and Perry counties; at ponds near Montgomery, AL; and at Eufaula National Wildlife Refuge (ADCNR, 2019b).

5.2.2 Red-Cockaded Woodpecker (*Picoides borealis*)

The red-cockaded woodpecker (federally listed as endangered) historically inhabited open pine forest from Maryland, New Jersey, and Virginia to Florida. Their range also extended west to Texas and north to parts of Kentucky, Missouri, Oklahoma, and Tennessee. Due to the drastic decline of the longleaf pine ecosystem, the red-cockaded woodpecker has disappeared from much of its original range. The current range extends from Florida to Virginia and west to Oklahoma and eastern Texas. In Alabama, most of the red-cockaded woodpeckers are found in the Conecuh, Oakmulgee, and Talladega National Forests (ADCNR, 2014b).

5.3 PROTECTED FISH SPECIES

Table 1-1 lists 12 federally protected fish species within the Coosa River and Etowah River basins, and four of those species inhabit the main stem of the rivers and their associated reservoirs: the blue shiner, which occurs in the Coosa River near Weiss Lake; the Cherokee darter and the Etowah darter, which inhabit the Etowah River and Allatoona Lake; and the amber darter, which inhabits the Etowah River upstream of Allatoona Lake (USFWS, 2019b) (USFWS, 2019c).

5.3.1 Amber Darter (*Percina antesella*)

The amber darter (federally listed as endangered) is endemic to the Conasauga and Etowah river systems in the upper Coosa River system. The amber darter was first discovered in 1948 in Shoal Creek (Cherokee County, GA), a tributary to the Etowah River that now flows into Allatoona Reservoir. Subsequent collection efforts in the Etowah River system yielded only a single specimen until the early 1990s, when amber darters were discovered at eight localities in the mainstem Etowah River upstream of Allatoona Reservoir and in the lower portion of Sharp Mountain Creek (a tributary to the Etowah River in Cherokee County). In June 1993, the amber darter was rediscovered in the lower portion of Shoal Creek, upstream from the 1948 locality and just above the area influenced by the Allatoona Reservoir. More recently, the amber darter has been found along the Etowah River from near the mouth of Amicalola Creek downstream to Canton, GA. The amber darter also occurs in an approximate 55 km reach of the Conasauga River, from the vicinity of the U.S. 411 bridge in Polk County, TN to the vicinity of Browns Bridge Road outside of Dalton, GA (Murray and Whitfield Counties). A single amber darter was collected in the Coosawattee River, downstream of Carter's Lake Reservoir, in 2010. Amber darters occur in riffles or shoals with cobble and gravel, and moderate to swift currents, typically 30-70 cm/sec. They are often found in shoals with the submerged aquatic macrophyte, riverweed (*Podostemum ceratophyllum*). Amber darters rarely occur in very shallow or low-velocity areas, or areas with accumulated silt. Spawning likely occurs in late winter and spring. Eggs are deposited in gravel sediment (GADNR, 2016). Critical habitat has been designated within the Oostanaula complex (***Figure 5-1***) (USFWS, 2019e).

5.3.2 Blue Shiner (*Cyprinella caerulea*)

The blue shiner (federally listed as threatened) is endemic to the Mobile River drainage basin and was historically known from the Coosa and Cahaba river systems of Alabama, Georgia, and Tennessee (USFWS, 1992). Water quality and habitat degradation, primarily because of dam construction, are the primary threat to the species (USFWS, 1995). It is restricted to the lower reaches of Little River, Weogufka Creek, and Choccolocco Creek in Alabama (ADCNR, 2014a) and the upper Conasauga River system above the junction with Holly Creek in Georgia (USFWS, 1995). Blue shiners prefer clear, medium or large streams and are found in shallow pools with slow currents or in backwaters over sand and gravel substrates. Spawning in the upper Coosa River system occurs from late April to late July (Mettee, O'Neil, & Pierson, 1996). The blue shiner is a fluvial specialist, being found only in flowing water. It prefers low to moderate velocity current, and a depth of about 0.15 to 1 meter (0.5 to 3 feet) (USFWS, 1995).

5.3.3 Cherokee Darter (*Etheostoma scotti*)

The Cherokee darter (federally listed as threatened) is endemic to upper portions of the middle Etowah River system in Georgia, upstream of Allatoona Lake. Cherokee darters are found in the Blue Ridge and Piedmont physiographic sections in this area with most populations occurring in the Northern Piedmont Upland. The Cherokee darter inhabits small-to-medium-sized creeks with moderate gradient, in low current areas with large gravel, cobble, and small boulder substrates. It occurs in runs above and below riffles, typically in waters 1–2 ft deep over large gravel, cobble, and small boulders. Little is known about the life history of this species, although it is assumed to be similar to the Coosa darter, which eats aquatic insects and spawns in the spring (Mettee, O'Neil, & Pierson, 1996) (USFWS, 2000).

5.3.4 Etowah Darter (*Etheostoma etowahae*)

The Etowah darter (federally listed as endangered) is restricted to the Etowah River system of the upper Coosa River of Georgia, above and below Allatoona Dam, including the mainstem and seven tributaries: Amicalola Creek, Shoal Creek in Dawson County, Long Swamp Creek, Yellow Creek, Smithwick Creek, Stamp Creek, and Raccoon Creek. Adults occur in small-to-medium-sized streams with cobble and gravel riffles and moderate-to-swift current. Because this species is newly described, little is known of its life history. Based on what is known of other species, spawning probably occurs from late April to early June, peaking in May (Mettee, O'Neil, & Pierson, 1996) (USFWS, 2000) (NatureServe, 2019a).

5.4 PROTECTED MUSSEL SPECIES

Table 1-1 lists 13 federally protected mussel species within the Coosa and Etowah river basins, and 10 of those species inhabit the main stem of the rivers and their associated reservoirs: the Alabama moccasinshell, Coosa moccasinshell, fine-lined pocketbook, Georgia pigtoe, ovate clubshell, southern acornshell, triangular kidneyshell, and upland combshell inhabit parts of the Coosa River; and the southern clubshell and southern pigtoe inhabit parts of both the Coosa and Etowah rivers.

5.4.1 Alabama Moccasinshell (*Medionidus acutissimus*)

The Alabama moccasinshell (federally listed as threatened) historically occurred in the Mobile River Basin in Alabama, Mississippi, Georgia, and Tennessee. It prefers moderate-to-strong currents in streams and small rivers and is often associated with shoal habitat and sand, gravel, or cobble substrate (USFWS, 2000). In the ACT River Basin, the Alabama moccasinshell is generally found in small, localized populations in the upper Conasauga River in Georgia and Tennessee and in portions of the Cahaba River system in Alabama. Critical habitat has been designated in four units, including portions of the Cahaba, Lower Coosa, and Oostanaula rivers as well as in Bogue Chitto Creek (***Figure 5-1***) (USFWS, 2019e).

5.4.2 Coosa Moccasinshell (*Medionidus parvulus*)

Historically, the Coosa moccasinshell (federally listed as endangered) was known from tributaries of the middle and upper Coosa River drainage, including Choccolocco Creek, Chattooga River, Little River, Conasauga River, Cahaba River, and Sipsey Fork in the Black Warrior River (USACE Mobile District, 2003). The species prefers sand, gravel, and cobble substrate in moderate-to-strong current along shoals of streams and small rivers (USFWS, 2000). Recent collections have been made from the Little River in Alabama and the upper Conasauga in Georgia and Tennessee (USFWS, 1993). Nine critical habitat units have been designated, only one (the Oostanaula complex) of which supports the species (***Figure 5-1***) (USFWS, 2019e).

5.4.3 Fine-lined Pocketbook (*Lampsilis altilis*)

The historical distribution of the fine-lined pocketbook (federally listed as threatened) included most of the Mobile River Basin, to which the species is endemic (USFWS, 2000). Within the ACT River Basin, it occurs in the Little Cahaba River, the Tallapoosa River drainage, three tributaries of the middle Coosa River, and the Conasauga River (USACE Mobile District, 2003) (Williams & Hughes, 1998). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. It has been found in stable sand and in gravel in small streams above the Fall Line (NatureServe, 2019b). Twelve critical habitat units, all within the ACT River Basin, have been established on approximately 546 mi of rivers and streams (***Figure 5-1***) (USFWS, 2019e).

5.4.4 Georgia Pigtoe (*Pleurobema hanleyianum*)

The Georgia pigtoe (federally listed as endangered) was historically present in large creeks and rivers of the Coosa River drainage of Alabama, Georgia, and Tennessee. It is found in shallow runs and riffles with strong-to-moderate current and coarse sand-gravel-cobble bottoms. The Georgia pigtoe is currently known from a few isolated shoals in the Upper Conasauga River in Murray and Whitfield counties, GA, and in Polk County, TN. In November 2010, the Georgia pigtoe was listed as endangered, and critical habitat for the species was designated for the following three areas: 52 mi of the upper Conasauga River upstream of US Route 76 in Murray and Whitfield counties; 15 mi of Terrapin Creek upstream of its confluence with the Coosa River and 11 mi of the Coosa River immediately below Weiss Dam (old channel and tributary) in Cherokee County, AL; and 41 mi of Hatchet Creek in Clay and Coosa counties, AL (***Figure 5-1***) (USFWS, 2010a).

5.4.5 Ovate Clubshell (*Pleurobema perovatum*)

The ovate clubshell (federally listed as endangered) was historically found throughout the Mobile River Basin tributaries, including inhabiting large creeks and small-to-large rivers such as the Tombigbee, Black Warrior, Alabama, Cahaba, lower Tallapoosa, and Coosa river systems (USFWS, 2000). Within the ACT River Basin, recent surveys indicate the species is only known from Chewacla Creek in the Uphapee Creek system in the lower Tallapoosa River drainage, AL, and from the upper Coosa River mainstem (bypass reach) near Weiss Lake in Alabama (USACE Mobile District, 2003). Habitat in Tennessee includes a sand and fine gravel substrate in stretches of river with moderate current and typically at a depth of less than three feet (NatureServe, 2019c). Approximately 494 mi of critical habitat have been designated for the ovate clubshell, comprising eight distinct units (***Figure 5-1***) (USFWS, 2019e).

5.4.6 Southern Acornshell (*Epioblasma othcaloogensis*)

The range of the southern acornshell (federally listed as endangered) historically spanned the Coosa and Cahaba river systems above the fall line in Alabama, Georgia, and Tennessee (USFWS, 2000). The species is presumed to be extirpated from the Tennessee portion of the Conasuaga River and appears restricted to the Coosa River drainage in Alabama and Georgia (Parmalee & Bogan, 1998). Species of this genus have typically been found in strong currents and coarse particle substrates (NatureServe, 2019d). Critical habitat has been designated in seven units comprising 341 mi of streams in the southern acornshell's former range (***Figure 5-1***) (USFWS, 2019e).

5.4.7 Southern Clubshell (*Pleurobema decisum*)

Historically, the southern clubshell (federally listed as endangered) was found throughout the Mobile River Basin, inhabiting sand, gravel, or cobble shoals in highly oxygenated large streams and small rivers (USFWS, 2000) (NatureServe, 2019e). Its current distribution in the ACT River Basin includes Bogue Chitto Creek in the Alabama River, the mainstem Alabama River, and Chewacla Creek in the lower Tallapoosa River (USACE Mobile District, 2003). It has been previously found in the lower Coosa River mainstem in the bypass reach downstream of Weiss Lake, but recent surveys failed to collect any live specimens. In 2004 critical habitat was designated as 19 units in Alabama, Georgia, Mississippi, and Tennessee (USFWS, 2004). Within the ACT River Basin, critical habitat has been designated in10 units, encompassing approximately 467 mi of habitat (***Figure 5-1***) (USFWS, 2019e).

5.4.8 Southern Pigtoe (*Pleurobema georgianum*)

The southern pigtoe (federally listed as endangered) is endemic to the ACT River Basin, historically occurring in the Coosa River in Alabama, Georgia, and Tennessee (USFWS, 2000). It is generally found in small, restricted populations in high-quality large streams and small rivers. The species prefers coarse substrate (sandy-gravel and gravel) in moderate flows and depths of less than 60 cm (Parmalee & Bogan, 1998). Its current distribution is restricted to the upper Conasauga River of Georgia and Tennessee and along the lower Coosawattee River mainstem, but only the Oostanaula complex supports a population (USFWS, 2004). Critical habitat has been designated in nine units, comprising 393 mi of habitat in the ACT River Basin (***Figure 5-1***) (USFWS, 2019e).

5.4.9 Triangular Kidneyshell (*Ptychobranchus greenii*)

The triangular kidneyshell (federally listed as endangered) is endemic to the Mobile River Basin. This species appears most prevalent in sections of river three feet in depth and having a good current and a firm substrate as opposed to coarse gravel and sand in shoals and runs of small rivers and large streams (USFWS, 2000) (NatureServe, 2019f). In the ACT River Basin, the species is known to exist in the Upper Conasauga River, the Oostanaula River, and the Coosawattee River downstream of Carters Dam in Georgia (USACE Mobile District, 2003). In 2004 critical habitat was established in 13 units in Alabama, Georgia, and Tennessee (USFWS, 2004). Critical habitat has been designated in ten units, comprising 400 mi, in the ACT River Basin (***Figure 5-1***) (USFWS, 2019e).

5.4.10 Upland Combshell (*Epioblasma metastriata*)

The upland combshell (federally listed as endangered) is endemic to the Mobile River Basin and historically occurred in portions of the Black Warrior, Cahaba, middle Coosa and upper Coosa rivers and their tributaries (USACE Mobile District, 2003). It is generally found in high-quality habitat in small-to-medium-sized rivers, where it is found on sand and gravel substrate in riffles in moderate to swift currents (USACE Mobile District, 2003) (NatureServe, 2019g). Today, its range is drastically diminished. Surveys have failed to relocate the species, except in the Conasauga River in Georgia (USFWS, 2000). Despite the absence of live specimens, critical habitat has been designated in seven units of the upland combshell's former range (***Figure 5-1***) (USFWS, 2019e).

5.5 PROTECTED SNAIL SPECIES

Table 1-1 lists seven federally protected snail species within the Coosa River and Etowah River basins, and four of those species inhabit the main stem of the rivers and their associated reservoirs: the interrupted rocksnail, painted rocksnail, rough hornsnail, and tulotoma snail inhabit parts of the Coosa River.

5.5.1 Interrupted Rocksnail (*Leptoxis foremani*)

The interrupted rocksnail was listed as an endangered species in November 2010 (USFWS, 2010a). Historically, it occurred in the Coosa River drainage in Alabama and Georgia. Surveys of the Oostanaula, Coosa, Coosawattee, Etowah, and Conasauga rivers since 1999, however, have documented the species in only about 7.5 mi of the Oostanaula River upstream of the Gordon-Floyd county line. Rocksnails live in shoals, riffles, and reefs of small to large rivers. Their habitats are generally subject to moderate currents during low flows and strong currents during high flows. These snails live attached to bedrock, boulders, cobble, and gravel, and tend to move little, except in response to changes in water level. Interrupted rocksnails are currently found in shoal habitats with sand-boulder substrate, at depths less than 50 cm (20 in), and in currents less than 40 cm/sec (16 in/sec) (NatureServe, 2019h). Critical habitat was designated in November 2010 for the following three areas: 7 mi of the Coosa River below Weiss Dam (old channel and tributary); 8 mi of the Coosa River below Jordan Dam; and 48 mi of the Oostanaula River downstream of its origin at the confluence of the Conasauga and Coosawattee rivers (USFWS, 2010a) (USFWS, 2019e).

5.5.2 Painted Rocksnail (*Leptoxis taeniata*)

The painted rocksnail (federally listed as threatened) historically maintained the largest range of any rocksnail in the Mobile River Basin drainage, ranging from the Coosa River and its tributaries in St. Clair County, AL, downstream into the mainstem of the Alabama River to Claiborne, Monroe County, AL, and the Cahaba River downstream of the fall line in Perry and Dallas counties, AL (USFWS, 2005). Populations exist in only three Coosa River tributaries—Choccolocco Creek, Talladega County; Buxahatchee Creek, Shelby County; and Ohatchee Creek, Calhoun County, AL. Two of these systems, Choccolocco Creek and Buxahatchee Creek, have recently been identified on Alabama's draft listing of 303d impaired waterbodies for organic pollution and excessive nutrients, respectively (USFWS, 2006). This species is found in the shoals and riffles and strong currents of rivers on substrates of gravel and cobble (NatureServe, 2019i).

5.5.3 Rough Hornsnail (*Pleurocera foremani*)

The rough hornsnail (federally listed as endangered) is endemic to the Coosa River and its tributaries in Alabama and is generally found on gravel, cobble, and bedrock substrate in areas of moderate currents. It is known to occur at only two locations: Lower Yellowleaf Creek in Shelby County, AL; and the Lower Coosa River downstream of Wetumpka Shoals in Elmore County, AL. In November 2010, the rough hornsnail was listed as endangered, and critical habitat for the species was designated for the following areas: 13 mi of the Coosa River from Jordan Dam to the confluence with the Tallapoosa River and 4 mi of Yellowleaf Creek in Shelby County, AL (USFWS, 2010a) (USFWS, 2019e).

5.5.4 Tulotoma Snail (*Tulotoma magnifica*)

The tulotoma snail (federally listed as threatened) inhabits cool, well-oxygenated, free-flowing waters in mainstem rivers and major tributaries. The habitat is riffles and shoals on the undersides of large rocks, with current velocities sufficient to prevent silt accumulation (NatureServe, 2019j). Historically, it occurred throughout the Coosa River drainage to the Alabama River (USFWS, 2000). Recent studies suggest an increase in the abundance and distribution of the species, as it now occurs in eight populations in more than 10 percent of its former range (USFWS, 2007). Minimum flow criteria established by APC have expanded the populations downstream of Jordan Dam and Lake. In 2006 a 5-year review recommended downlisting the tulotoma snail to threatened status (USFWS, 2007).

5.6 PROTECTED FLOWERING PLANT SPECIES

Table 1-1 lists 17 federally protected flowering plant species within the Coosa River and Etowah River basins, and nine of those species have a range that overlaps with the main stem of the rivers and their associated reservoirs: the Alabama leather flower, Georgia rockcress, green pitcher-plant, harperella, large-flowered skullcap, Mohr's Barbara's buttons, Tennessee yellow-eyed grass, white fringeless orchid, and whorled sunflower.

5.6.1 Alabama Leather Flower (*Clematis socialis*)

The Alabama leather flower (federally listed as endangered) is only known from three locations in northeast Alabama with one population occurring in St. Clair County and two in Cherokee County (USFWS, 1989). It is found in herbaceous wetland, riparian, upland forest, and upland grassland/herbaceous habitats (NatureServe, 2019k).

5.6.2 Georgia Rockcress (*Arabis georgiana*)

The Georgia rockcress (federally listed as threatened) grows in various dry situations, including shallow soil accumulations on rocky bluffs, in ecotones of gently sloping rock outcrops, and in sandy loam along eroding riverbanks. Currently, 19 populations are known from four counties in Alabama (Bibb, Elmore, Russell, and Wilcox) and six counties in Georgia (Clay, Chattahoochee, Floyd, Gordon, Harris, and Muscogee). Critical habitat has been designated in several units in the ACT basin, including the Oostanaula River, the Coosa River, the Cahaba River drainage, the Cahaba River, and the Alabama River (***Figure 5-1***) (USFWS, 2019e).

5.6.3 Green Pitcher-Plant (*Sarracenia oreophilia*)

The green pitcher-plant (federally listed as endangered) occurs in a relatively wide variety of habitats, including mixed oak or pine flatwoods, seepage bogs, and stream banks. It is found near seepage bogs in sandy clays or loams that contain abundant organic matter. On the basis of historic records, the species is most likely to occur in the ACT River Basin in DeKalb, Etowah, and Cherokee counties, AL (USFWS, 1994).

5.6.4 Harperella (*Ptilimnium nodosum*)

Harperella (federally listed as endangered) typically grows in two habitat types: (1) rocky or gravel shoals and margins of clear, swift-flowing stream sections and (2) edges of intermittent pineland ponds in the Coastal Plain. Two extant populations occur in Alabama. One consisting of several thousand individuals occurs along the Little River on the border of Cherokee and DeKalb counties (USFWS, 1990). The other population has less than 100 plants and is on Town Creek in DeKalb County. More recent data for the species within the basin are unavailable, but a 5-year review is underway (USFWS, 2008).

5.6.5 Large-Flowered Skullcap (*Scutellaria montana*)

Large-flowered skullcap (federally listed as threatened) is a terrestrial species that inhabits moist hardwood and hardwood-pine forests with few shrubs. The range of this species includes the Ridge and Valley physiographic province of northwest Georgia and southeast Tennessee. Populations are concentrated on Lookout and Signal mountains in Tennessee and in Floyd County, GA. In Georgia, 53 populations are known, including 12 on conservation land (GADNR, 2008a).

5.6.6 Mohr's Barbara's Buttons (*Marshalla mohrii*)

Mohr's Barbara's buttons (federally listed as threatened) typically occurs in moist, prairie-like openings in woodlands and along shale-bedded streams (USACE Mobile District, 2003). At the time of its listing, it was known to exist at 15 sites in Alabama, all of which are within the ACT River Basin (one population in Bibb County, four in Etowah County, and 10 in Cherokee County) (USFWS, 1991). The species is also known from Floyd County, GA (within the ACT River Basin). In 2010 the USFWS initiated a 5-year status review of Mohr's Barbara's buttons (USFWS, 2010b).

5.6.7 Tennessee Yellow-Eyed Grass (*Xyris tennesseensis*)

At the time of its listing as endangered, the Tennessee yellow-eyed grass occurred in extant populations at 14 sites in five areas: (1) northwest Georgia (Bartow and Whitfield counties - one population each; (2) northeast Alabama (Calhoun County - two populations); (3) central Alabama (Bibb County - five populations); (4) northwest Alabama (Franklin County - one population); and (5) southcentral Tennessee (Lewis County - four populations). Conditions of the sites generally feature nearly permanent (all-year) moisture regimes; open, sunny conditions; and calcareous bedrock (shale, limestone, dolomite) or thin calcareous soils (USACE Mobile District, 2003). This species is found in forested wetland, herbaceous wetland, riparian, and upland grassland/herbaceous habitat (NatureServe, 2019l).

5.6.8 White Fringeless Orchid (*Platanthera integrilabia*)

White fringeless orchid (federally listed as threatened) is documented from 53 extant locations within six states: Alabama, Georgia, Kentucky, Mississippi, South Carolina, and Tennessee. In the ACT River Basin, it is found in the Etowah, Upper Coosa, Lower Coosa, and Upper Tallapoosa watersheds. This species is generally found in wet, flat, boggy areas at the head of streams or seepage slopes (NatureServe, 2014a).

5.6.9 Whorled Sunflower (*Helianthus verticillatus*)

The whorled sunflower (federally listed as endangered) is known only from Alabama (Cherokee County), Georgia (Floyd County), and Tennessee (Madison and McNairy counties). This species is a narrow habitat specialist occurring in remnant wet prairie areas and calcareous barrens, in moist, prairie-like openings in woodlands, and along adjacent creeks (NatureServe, 2014b). Critical habitat has been designated in the Mud Creek/Coosa Valley Prairie (***Figure 5-1***) (USFWS, 2019e).

5.7 CRITICAL HABITAT

Critical habitat for all federally protected species in the ACT River Basin, as designated based on the USFWS Threatened & Endangered Species Active Critical Habitat Report, is shown in ***Figure 5-1*** (USFWS, 2019e). It should be noted that ***Figure 5-1*** has been updated from the corresponding figure in the main report and in Appendix E of the Draft FR/SEIS based on updates to critical habitat units. Critical habitat has been designated for 17 species in the Coosa River and Etowah River basins based on the USFWS Official Species Lists (USFWS, 2019b) (USFWS, 2019c) (USFWS, 2019d); those species are: Alabama moccasinshell, Amber darter, Conasauga logperch, Coosa moccasinshell, fine-lined pocketbook, Georgia pigtoe, Georgia rockcress, interrupted rocksnail, ovate clubshell, rough hornsnail, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, trispot darter (proposed), upland combshell, and whorled sunflower.

The ROI is defined as the Etowah River at its confluence with Hickory Log Creek at Canton, GA, downstream to its confluence with the Oostanaula River at Rome, GA, and the Coosa River at Rome downstream to its confluence with the Tallapoosa River near Montgomery, AL. Within the ROI, critical habitat has been designated within portions of the mainstem of the Coosa River, as well as primary tributaries to the mainstem and reservoirs along the Coosa River.

Three of the 17 species listed do not have critical habitat within the ROI, including the amber darter, Conasauga logperch, and trispot darter (proposed). The critical habitat unit descriptions for the remaining 14 species are described below and presented in ***Table 5-1***. The primary constituent elements (PCEs) for each critical habitat unit are provided in ***Table 5-1***.

The critical habitat designated within portions of the Coosa River mainstem (or adjacent lands) include an area near Rome, GA, the old Coosa River channel below Weiss spillway, and the lower Coosa River below Jordan Dam. The Georgia rockress has designated critical habitat (Unit 15) on the privately-owned Blacks Bluff Preserve along the left descending bank of the Coosa River, approximately 4.0 miles downstream of the Etowah River and Oostanaula River junction in Rome, GA. The following mussel and snail species have critical habitat within an 11-mile reach of the Coosa River immediately below Weiss Dam (old channel): Coosa moccasinshell, fine-lined pocketbook, Georgia pigtoe, interrupted rocksnail, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, and upland combshell (Unit GP 2, Unit IR 1, and Unit 18). The Georgia pigtoe and the interrupted rocksnail have critical habitat within 7 miles of the 11-mile reach of the old channel (Unit GP 2 and Unit IR 1, respectively).

Four critical habitat units are located within (or adjacent to) a 13-mile reach of the lower Coosa River, downstream of Jordan Dam to just above its confluence with the Tallapoosa River. Unit RH 1, for the rough hornsnail, includes this entire 13-mile reach of the lower Coosa River. Unit IR 3 includes critical habitat designated for the interrupted rocksnail; Unit 26 includes critical habitat designated for the southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook, and Alabama moccasinshell. Unit IR 3 and Unit 26 both extend along the lower Coosa River from Jordan Dam downstream to Alabama Highway 111 Bridge (approximately 8 miles). Unit 12, for the Georgia rockcress, includes designated critical habitat that runs along the left descending bank of the lower Coosa River just upstream of its confluence with the Tallapoosa River near Montgomery, AL, on the bluffs at Fort Toulouse State Park.

Primary tributaries (and/or associated adjacent lands) to the mainstem of the Coosa River that have designated critical habitat units include the Oostanaula River, Terrapin Creek, Mud Creek, Big Canoe Creek, Kelly Creek, Yellowleaf Creek, and Hatchet Creek.

The Oostanaula River's junction with the Etowah River forms the Coosa River at Rome, GA; therefore, it is being categorized as a tributary of the Coosa River for this analysis. The following mussel and snail species have critical habitat within the Oostanaula River, extending approximately 48.0 miles upstream from at or near its confluence with the Etowah River: Alabama moccasinshell, Coosa moccasinshell, fine-lined pocketbook, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, upland combshell, and interrupted rocksnail (Unit IR 2 and Unit 25). The Georgia rockcress has critical habitat on the privately-owned Whitmore Bluff along the left descending bank of the Oostanaula River, approximately 4.0 miles upstream of Rome, GA (Unit 16).

In the upper end of Weiss Lake, a small area of the critical habitat for the whorled sunflower extends into the ROI along the perimeter of Weiss Lake; the area is noted as Mud Creek (Unit 1).

Terrapin Creek, a tributary of the Coosa River (old channel), includes critical habitat designated for the Coosa moccasinshell, fine-lined pocketbook, Georgia pigtoe, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, and upland combshell (Unit GP 2 and Unit 18). The Georgia pigtoe has designated critical habitat in 15 miles of Terrapin Creek (Unit GP 2) and the other mussels have designated critical habitat in 33 miles of Terrapin Creek (Unit 18); both critical habitat units extend upstream from the creek's confluence with the old Coosa River channel.

Big Canoe Creek is a tributary of the Coosa River; the area of the creek's confluence is part of H. Neely Henry Lake. Unit 24 extends along Big Canoe Creek, from its confluence with Little Canoe Creek, upstream about 18 miles. This Big Canoe Creek/Little Canoe Creek confluence is approximately 6.7 miles upstream from the Big Canoe Creek/Coosa River confluence. Unit 24 includes designated critical habitat for the southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, and fine-lined pocketbook.

The confluence of Kelly Creek with the Coosa River is located about 2.0 miles downstream of Logan Martin Dam; the area is considered the upper most portion of Lay Lake. Unit 21 extends along Kelly Creek from its confluence with the Coosa River, upstream about 16 miles. Unit 21 is designated for the southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, and fine-lined pocketbook.

The confluence of Yellowleaf Creek and the Coosa River is located in Lay Lake, near Wilsonville, AL. Two critical habitat units have been designated within Yellowleaf Creek; one for the rough hornsnail and one for four mussel species. Unit RH 2, designated for the rough hornsnail, extends from about 1.0 mile downstream of Alabama Highway 25 Bridge to 4 miles upstream. Unit 23 is designated for the triangular kidneyshell, Coosa moccasinshell, southern pigtoe, and fine-lined pocketbook and extends about 20 miles upstream from the Alabama Highway 25 Bridge. The Alabama Highway 25 Bridge crosses Yellowleaf Creek approximately 2 miles upstream from the creek's confluence with the Coosa River.

The confluence of Hatchet Creek and the Coosa River is located in Mitchell Lake, just upstream of Mitchell Dam. Two critical habitat units have been designated within the same 41-mile reach of the Hatchet River; one for the Georgia pigtoe and one for eight mussel species. Unit GP 3 is designated for the Georgia pigtoe and Unit 19 is designated for the southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, and fine-lined pocketbook. Both Unit GP 3 and Unit 19 extend along Hatchet Creek, from its confluence with Swamp Creek at Coosa County Road 29, upstream about 41 miles to Clay County Road 4. The Hatchet Creek/Swamp Creek confluence is approximately 8 miles upstream from the Hatchet Creek/Coosa River confluence.

Table 5-1. Designated Critical Habitat Units within the ROI.

Designated Critical Habitat Unit	Primary Constituent Elements (PCEs)
Unit 1: **Mud Creek** **Cherokee County, AL** 520.4 acres	**1)** Silt loam, silty clay loam, or fine sandy loam soils on land forms including broad uplands, depressions, stream terraces, and floodplains within the headwaters of the Coosa River in AL and GA and the East Fork Forked Deer and Tuscumbia rivers in Tennessee; **2)** sites in which forest canopy is absent, or where woody vegetation is present at sufficiently low densities to provide full or partial sunlight for most of the day, and which support vegetation characteristic of moist prairie communities. Invasive, nonnative plants must be absent or present in sufficiently low numbers not to inhibit growth or reproduction of whorled sunflower; and **3)** occupied sites in which a sufficient number of compatible mates are present for outcrossing and production of viable achenes to occur. (79 FR 50990, August 26, 2014) **Species**: whorled sunflower
Unit GP 2: **Terrapin Creek and Coosa River** **Cherokee County, AL** Terrapin Creek channel from AL Hwy 9 downstream to confluence with the Coosa River (15 mi) Coosa River channel from Weiss Dam downstream to 1.0 below the confluence of Terrapin Creek (7 mi)	**1)** Geomorphically stable stream and river channels and banks (channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation); **2)** a hydrologic flow regime (the magnitude, frequency, duration, and seasonality of discharge over time) necessary to maintain benthic habitats where the species is found. Unless other information becomes available, existing conditions at all locations where the species occurs will be considered as minimal flow requirements for survival; **3)** water quality, including temperature, pH, hardness, turbidity, oxygen content, and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; **4)** sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae; and **5)** the presence of fish host(s) for the Georgia pigtoe (currently unknown). Diverse assemblages of native chubs, minnows, stonerollers, and other stream-adapted fish species will serve as potential indication of presence of host fish. (75 FR 67512, November 2, 2010) **Species**: Georgia pigtoe
Unit GP 3: **Hatchet Creek** **Coosa and Clay Counties, AL** Hatchet Creek channel from Clay County Road 4 downstream to the confluence of Swamp Creek at Coosa County Road 29 (41 mi)	Same PCEs as Unit GP 2. **Species**: Georgia pigtoe
Unit IR 1: **Coosa River** **Cherokee County, AL** Coosa River channel from Weiss Dam downstream to 1.0 mile below the confluence of Terrapin Creek (7 mi)	**1)** Geomorphically stable stream and river channels and banks (channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation); **2)** a hydrologic flow regime (the magnitude, frequency, duration, and seasonality of discharge over time) necessary to maintain benthic habitats where the species is found. Unless other information becomes available, existing conditions at all locations where the species occurs will be considered as minimal flow requirements for survival; **3)** water quality, including temperature, pH, hardness, turbidity, oxygen content, and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; and **4)** sand, gravel, cobble, boulder, or bedrock substrates with

Designated Critical Habitat Unit	Primary Constituent Elements (PCEs)
	low to moderate amounts of fine sediment and attached filamentous algae. (75 FR 67512, November 2, 2010) **Species**: interrupted rocksnail
Unit IR 2: **Oostanaula River** **Gordon and Floyd Counties, GA** Oostanaula River from its confluence of the Conasauga and Coosawatee rivers downstream to Georgia Hwy 1 Loop (48 mi)	Same PCEs as Unit IR 1. **Species**: interrupted rocksnail
Unit IR 3: **Lower Coosa River** **Elmore County, AL** Coosa River channel from Jordan Dam downstream to Alabama Hwy 111 Bridge (8 mi)	Same PCEs as Unit IR 1. **Species**: interrupted rocksnail
Unit RH 1: **Lower Coosa River** **Elmore County, AL** Lower Coosa River channel from Jordan Dam downstream to the confluence of the Tallapoosa River (13 mi)	**1)** Geomorphically stable stream and river channels and banks (channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation); **2)** a hydrologic flow regime (the magnitude, frequency, duration, and seasonality of discharge over time) necessary to maintain benthic habitats where the species is found. Unless other information becomes available, existing conditions at all locations where the species occurs will be considered as minimal flow requirements for survival; **3)** water quality, including temperature, pH, hardness, turbidity, oxygen content, and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; and **4)** sand, gravel, cobble, boulder, bedrock, or mud substrates with low to moderate amounts of fine sediment and attached filamentous algae. (75 FR 67512, November 2, 2010) **Species**: rough hornsnail
Unit RH 2: **Yellowleaf Creek** **Shelby County, AL** Yellowleaf Creek from the confluence of Morgan Creek downstream to 1 mile below AL Hwy 25 (4 mi)	Same PCEs as Unit RH 1. **Species**: rough hornsnail
Unit 12: **Fort Toulouse State Park** **Elmore County, AL** 17 acres along the lower Coosa River	**1)** Large river bluffs with steep and/or shallow soils that are subject to localized disturbances that limit the accumulation of leaf litter and competition within the Lower Gulf Coastal Plain, Upper Gulf Coastal Plain, Red Hills, Black Belt, Piedmont, and Ridge and Valley Physiographic Provinces of Georgia and Alabama; **2)** well-drained soils that are buffered or circumneutral generally within regions underlain or otherwise influenced by granite, sandstone, or limestone; **3)** a mature, mixed-level canopy with spatial heterogeneity, providing mottled shade and often including species such as eastern red cedar, American hophornbeam, chinquapin oak, white ash, southern sugar maple, and redbud with a rich diversity of grasses and forbs characterizing the herb layer; and **4)** intact habitat that is fully functional

Designated Critical Habitat Unit	Primary Constituent Elements (PCEs)
	(i.e., with mature canopy and discrete disturbances) and buffered by surrounding habitat to impede the invasion of competitors. (79 FR 54635, September 12, 2014) **Species**: Georgia rockcress
Unit 15: **Blacks Bluff Preserve** **Floyd County, GA** 92 acres along the Coosa River, 4.0 miles downstream of Rome, GA	Same PCEs as Unit 12. **Species**: Georgia rockcress
Unit 16: **Whitmore Bluff** **Floyd County, GA** 43 acres along the Oostanaula River, 4.0 miles upstream of Rome, GA	Same PCEs as Unit 12. **Species**: Georgia rockcress
Unit 18: **Coosa River (old River channel) and tributary** **Cherokee, Calhoun Cleburne Counties, AL** Coosa River (Old River Channel) mainstem from the power line crossing southeast of Maple Grove, AL upstream to Weiss Dam (11 mi) Terrapin Creek extending from its confluence with the Old Coosa River channel upstream to Cleburne County Road 49 (33 mi) South Fork Terrapin Creek from its confluence with Terrapin Creek upstream to Cleburne County Road 55 (4 mi) (not a part of analysis in ROI)	**1)** Geomorphically stable stream and river channels and banks; **2)** a flow regime (i.e., the magnitude, frequency, duration, and seasonality of discharge over time) necessary for normal behavior, growth, and survival of all life stages of mussels and their fish hosts in the river environment; **3)** water quality, including temperature, pH, hardness, turbidity, oxygen content, and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages; **4)** sand, gravel, and/or cobble substrates with low to moderate amounts of fine sediment, low amounts of attached filamentous algae, and other physical and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; **5)** fish hosts with adequate living, foraging, and spawning areas for them; and **6)** few or no competitive or predaceous nonnative species present. (69 FR 40084, July 1, 2004) **Species**: southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook
Unit 19: **Hatchet Creek** **Coosa, Clay Counties, AL** Hatchet Creek mainstem from confluence of Swamp Creek at Coosa County Road 29 upstream to Clay County Road 4 (41 mi)	Same PCEs as Unit 18. **Species**: southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook

Designated Critical Habitat Unit	Primary Constituent Elements (PCEs)
Unit 21: **Kelly Creek and tributary** **Shelby, St. Clair Counties, AL** Kelly Creek mainstem extending from the confluence with the Coosa River upstream to the confluence of Shoal Creek (16 mi) Mainstem of Shoal Creek from the confluence with Kelly Creek upstream to the St. Clair/Shelby County Line (5 mi) (not a part of analysis in ROI)	Same PCEs as Unit 18. **Species**: southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook
Unit 23: **Yellowleaf Creek and tributary** **Shelby County, AL** Yellowleaf Creek main stem from AL Hwy 25 upstream to Shelby County Road 49 (20 mi) Muddy Prong main stem extending from its confluence with Yellowleaf Creek upstream to US Hwy 280 (4 mi) (not a part of analysis in ROI)	Same PCEs as Unit 18. **Species**: triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook
Unit 24: **Big Canoe Creek** **St. Clair County, AL** Mainstem of Big Canoe Creek from its confluence with the Little Canoe Creek at the St. Clair/Etowah County line upstream to the confluence of Fall Branch (18 mi)	Same PCEs as Unit 18. **Species**: southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook
Unit 25: **Oostanaula River/Coosawattee River/Conasauga River/Holly Creek** **Floyd, Gordon, Whitfield, Murray Counties, GA and Bradley and Polk Counties, TN** Oostanaula River mainstem from its confluence with Etowah River (Floyd County, GA), upstream to confluence of the Conasauga and Coosawattee River (48 miles) Coosawattee River mainstem from its confluence with the Conasauga River, upstream to Georgia State HWY 136 (9 mi) (not a part of analysis within ROI)	Same PCEs as Unit 18. **Species**: southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Alabama moccasinshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook

Designated Critical Habitat Unit	Primary Constituent Elements (PCEs)
Conasauga River mainstem from confluence with the Coosawattee River upstream through Bradley and Polk Counties, TN to Murray County Road 2 (6 mi) (not a part of analysis within ROI) Holly Creek mainstem from confluence with the Conasauga River, upstream to its confluence with Rock Creek (10 mi) (not a part of analysis within ROI)	
Unit 26: **Lower Coosa River** **Elmore County, AL** Coosa River mainstem from Alabama State Hwy 111 bridge upstream to Jordan Dam (8 mi)	Same PCEs as Unit 18. **Species**: southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Alabama moccasinshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook

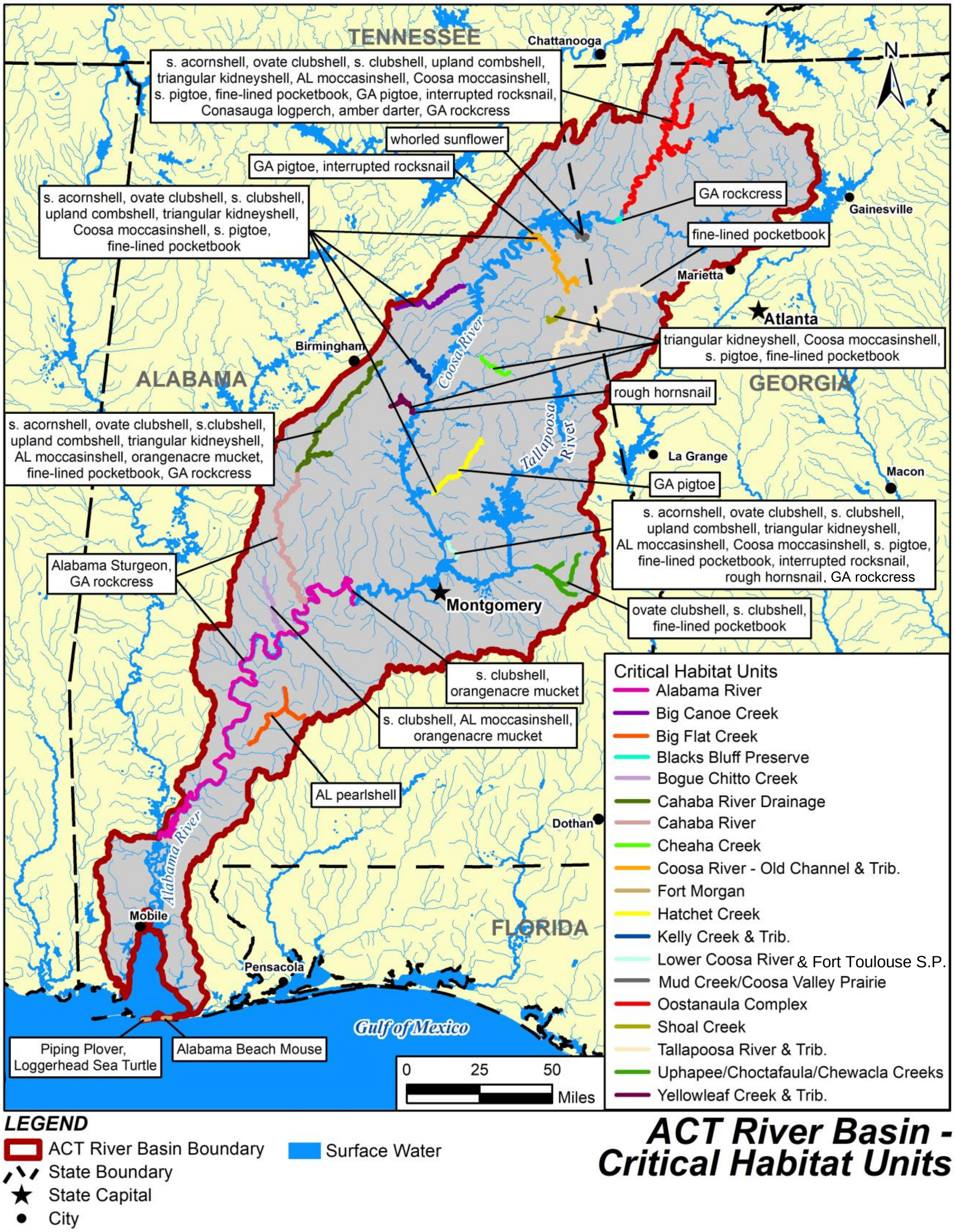


Figure 5-1. Designated Critical Habitat Units in the ACT River Basin.

6.0 ENVIRONMENTAL BASELINE

As described in the Section 7 Consultation Handbook, the environmental baseline is a "snapshot" of a species' health at a specified point in time. It does not include the effects of the proposed action, but rather provides an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat (including designated critical habitat), and ecosystem, within the action area. The baseline includes anticipated effects of all proposed Federal projects in the action area that have already undergone formal or early Section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The actions under review are the proposed reallocation of storage in USACE's Allatoona Lake from multipurpose use to municipal and industrial water supply and proposed modifications to federally authorized flood operations at APC's Weiss and Logan Martin dams, all of which will necessitate updates to the ACT River Basin Master Manual and the Water Control Manuals for these three projects. In the case of ongoing water resource projects, such as the reservoir projects in the ACT River Basin, the total effects of all past activities, including the effects of construction and past operation, current non-federal activities, and federal projects with completed Section 7 consultations, form the environmental baseline. Based on the description given above, the environmental baseline also includes effects of the currently approved dredging operations and other navigation maintenance activities. The environmental baseline considers the effects of operating the basin-wide system of dams and reservoirs, regardless of owner, since completion of the last project in the ACT River Basin.

There is a total of 16 USACE and APC dams on the mainstems of the Alabama, Coosa, and Tallapoosa rivers, including those shown in ***Figure 1-1***. APC's Jordan and Bouldin dams share a single reservoir (Jordan Lake). USACE's Carters Dam and Carters Reregulation Dam operate together as a single project. The Thomson-Weinman Dam, a low head dam located on the Etowah River approximately 10 miles downstream of Allatoona Dam, was previously used as a hydropower facility by the City of Cartersville and is now abandoned. APC's R.L. Harris Dam, located on the Tallapoosa River and completed in 1983, was the last dam constructed on the mainstem rivers of the ACT River Basin. The Affected Environment Section (Section E.1) of the Draft FR/SEIS provides a detailed description of the actions influencing the condition of the environmental baseline and that information is incorporated by reference. The affected environment, as described in the Draft FR/SEIS, for the proposed action includes the Alabama, Coosa and Tallapoosa rivers and all areas in the basin from the headwaters downstream to the mouth of the Alabama River at its confluence with the Tombigbee River where it forms the Mobile River, and downstream to include the Mobile Bay. However, this BA focuses on the ROI within the ACT River Basin, where model simulation results indicated potential effects on water quality and water quantity.

6.1 WATER QUANTITY

6.1.1 Current Water Supply Contracts at Allatoona Lake

USACE currently has water supply agreements at Allatoona Lake with two local water providers, CCMWA and the City of Cartersville, GA. The Final EIS for the 2015 ACT River Basin WCM update stated that the agreements, when executed, contemplated the use of the following amounts of reservoir storage: 6,371 ac-ft for the City of Cartersville and 13,140 ac-ft for CCMWA. The amounts of storage stated in those contracts were estimated at the time the contracts were executed to yield 16.76 mgd and 34.5 mgd, respectively, during the critical drought (i.e., the worst drought on record at the time the agreements were executed) (USACE Mobile District, 2014).

The severity and frequency of droughts change over time, however, and more recent storage-yield analyses by USACE have indicated that the estimated yield of ACT River Basin reservoir storage has decreased. Area-capacity curves for Allatoona Lake have been updated using hydrography and topography data collected in 2009. The previous area-capacity curves for Allatoona Lake were published in the revised August 1962 Reservoir Regulation Manual for the project (USACE Mobile District, 1962) and subsequently in the revised December 1993 WCM for the project (USACE Mobile District, 1993). The updated area-capacity curves indicate that sedimentation has caused about a 5-percent reduction in reservoir storage capacity since the previous area-capacity curves were developed (Tetra Tech, Inc., 2012). Accordingly, the reservoir storage allocated to water supply per the existing contracts has likewise been proportionately reduced to 6,054 ac-ft for the City of Cartersville and to 12,485 ac-ft for CCMWA. The 2006–2008 drought has been established as the critical drought period for the more recent storage-yield analyses by USACE. Based upon the revised water supply storage values, the estimated yield from the current contracts with the City of Cartersville and CCMWA have been reduced to 12.2 mgd and 24.9 mgd, respectively (USACE Mobile District, 2018). ***Figure 6-1*** shows the current water supply storage as a share of the conservation storage in Allatoona Lake.

To manage storage in Allatoona Lake and other USACE reservoirs in the Mobile District, the District has employed a storage accounting methodology that tracks multiple storage accounts, applying to each account a proportion of inflows and losses, as well as direct withdrawals by specific users. Storage limitations indicated by storage accounting are not intended to identify maximum amounts that can be withdrawn on a daily basis or on an average daily basis under the respective water supply agreements. Nor do these figures represent any guarantee by USACE that these amounts will be available for withdrawal at all times. Rather, these figures reflect the estimated maximum water supply demand that can reasonably be expected to exist, based on past use and the extent to which existing water supply storage would support those withdrawals. The actual amount of water withdrawn is ultimately dependent on the amount of water available in storage, which will naturally change over time.

USACE recognizes that, according to its present method of accounting for storage use at Allatoona Lake, the current and projected future water supply needs of the City of Cartersville and CCMWA exceed the average daily withdrawals contemplated under the original contracts and the amount of storage currently allocated to water supply under those contracts.

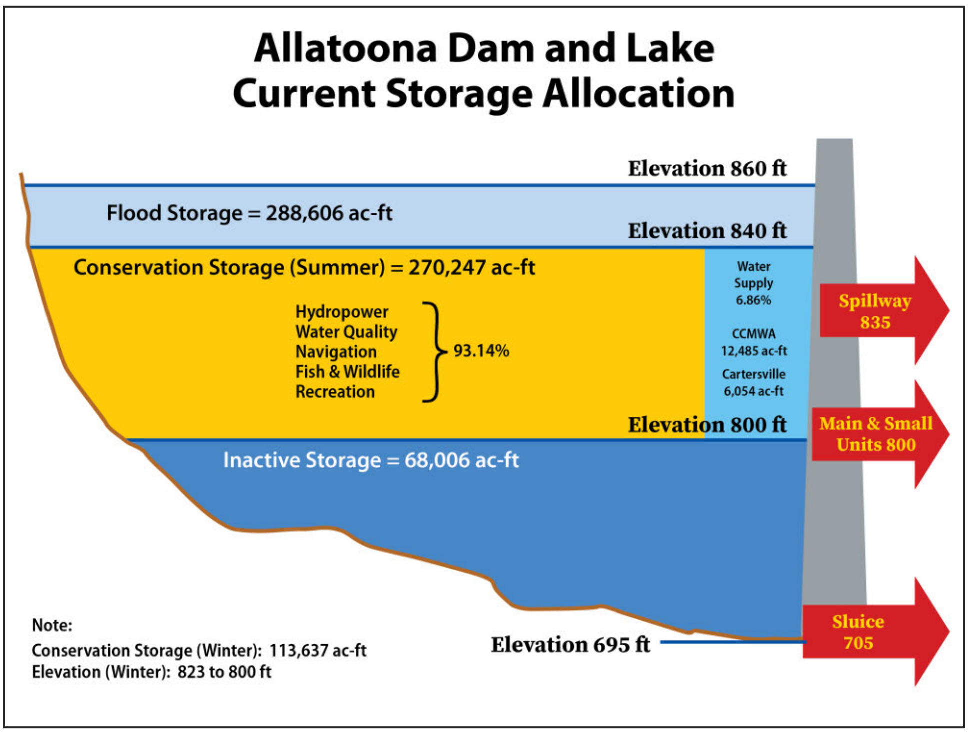


Figure 6-1. Allatoona Lake – Current Storage Allocation.

6.1.2 Weiss Lake and Logan Martin Lake

Baseline flood operations at Weiss Lake and Logan Martin Lake are defined in current WCMs for those projects (2004). Also, baseline conditions for minimum releases at the Weiss Spillway into the Weiss bypass channel were established during the 2013 Federal Energy Regulatory Commission (FERC) relicense process. APC implements a variable minimum flow in the bypassed section of the Coosa River from the Weiss Dam spillway during normal (non-flood) operations, which ranges from 4 to 9 percent of the flow in the Coosa River at the USGS gage at Mayo's Bar, near Rome, GA (USGS 02397000), depending on the month of the year.

6.2 WATER QUALITY

Results of HEC-5Q model simulation for the modeled period of 2001–2008 indicate that there are some existing quality impairments within the ROI. Water quality figures referenced in this section are provided in **Appendix D**. In these figures, A0-BASE2018 represents the baseline condition.

Water Temperature

Water temperatures in the Etowah River and Coosa River never exceed the water quality standard for temperature - a limit of 90 degrees Fahrenheit (°F) with no more than a 5-°F variation from discharge and no more than a 1.5-°F increase during June–September. As shown in ***Figure D-1*** and ***Figure D-2***, temperatures in the Etowah River and Coosa River, respectively, remain below that temperature limit for the NAA.

Dissolved Oxygen

Alabama and Georgia both enforce minimum dissolved oxygen (DO) concentrations in waterbodies designated for recreation with a standard of no less than 5 mg/L at all times in Alabama and a standard of no less than 4 mg/L at all times in Georgia. APC has added aeration blower systems to their projects at Logan Martin, Weiss, and H. Neely Henry. The blower systems are operated to achieve a DO concentration of 4 mg/L at the downstream compliance point for each facility. The operation of the blower systems to maintain the 4 mg/L DO concentration was included in the HEC-5Q model simulations.

On the Etowah River, upstream of Allatoona Lake, HEC-5Q simulations show that DO concentrations remain consistently high at all levels of occurrence. At the 5-percent occurrence, the lowest DO levels are modeled around 5.5 mg/L upstream of the lake but drop to almost 2 mg/L in the lake (***Figure D-3***). For APC Coosa River reservoir projects (including Weiss and Logan Martin lakes), DO concentrations remain above 5 mg/L upstream of all dams, even at the 5-percent occurrence, except for a drop to approximately 4 mg/L at Logan Martin Lake (***Figure D-4***).

Total Phosphorus

Total Phosphorus (TP) concentrations meet the site-specific water quality standard for Allatoona Lake, but most reaches of the Etowah River fail to meet USEPA's recommended 10 µg/L to 40 µg/L range at any occurrence level. The Coosa River has a site-specific water quality standard for TP of 0.7 mg/L (700 µg/L). Along the Coosa River, TP concentrations are about 0.25 mg/L (250 µg/L) at the 95-percent occurrence upstream of Weiss Lake, but then decreases to approximately 0.13 mg/L (130 µg/L) downstream of H. Neely Henry Lake (***Figure D-5***). At the 5-percent occurrence, the model predicts the Weiss Lake TP concentration to be approximately 0.06 mg/L (60 µg/L) and the concentration downstream of Logan Martin Dam to be approximately 0.04 mg/L (40 µg/L). While the 5-percent occurrence level meets the site-specific water quality standard at Weiss Lake as well as the USEPA recommended TP concentrations downstream of Logan Martin Lake, any higher occurrence level fails to meet the standard and recommended range.

Total Nitrogen

Allatoona Lake has a site-specific water quality standard for Total Nitrogen (TN), set at a growing season average of less than 4 mg/L in the photic zone. USEPA recommends maintaining a range of 2–6 mg/L of TN in waterbodies (USEPA, n.d.). Along the Etowah River, TN concentrations simulated in the HEC-5Q model fall well below the 4 mg/L site-specific standard and even below the acceptable range suggested by USEPA, with peak TN concentrations of about 1.2 mg/L at the 95-percent occurrence downstream of Rome-Coosa (***Figure D-6***).

Similar to concentrations on the Etowah River, the Coosa River TN concentrations in the HEC-5Q simulations fall below the acceptable range suggested by USEPA, with peak TN concentrations of about 1.2 mg/L at the 95-percent occurrence upstream of Weiss Lake (***Figure D-7***).

Chlorophyll *a*

In Georgia, Allatoona Lake has a site-specific chlorophyll *a* standard that requires an upstream concentration below 10 µg/L from April to October. In Alabama, site-specific standards include chlorophyll *a* exceedance limits from April to October of 20 µg/L at Weiss Lake, 18 µg/L at H. Neely Henry Lake, 17 µg/L at Logan Martin Lake and Lay Lake, and 14 µg/L at Mitchell Lake and Jordan Lake.

Results from the HEC-5Q simulations indicate that, on the Etowah River in Allatoona Lake, the 50-percent occurrence falls significantly below the 10 µg/L limit; however, the 95-percent occurrence exceeds 20 µg/L upstream of the lake (***Figure D-8***). Along the Coosa River, chlorophyll *a* concentrations would be expected to exceed their respective site-specific standards at the 95-percent occurrence level (***Figure D-9***).

7.0 EFFECTS ANALYSIS

This section is an analysis of the effects of the proposed action on the species and critical habitat. The previous “Environmental Baseline” section considers the effects of the past and current operations. This section addresses the future direct and indirect effects of implementing the proposed action. Water quantity and quality figures referenced in this section are provided in **Appendix D**.

7.1 FACTORS CONSIDERED

For the purposes of this BA, the analysis considers three principal components of the species’ environment in the action area: channel morphology, flow regime, and water quality. Physical habitat conditions for the listed species in the action area are largely determined by flow regime, and channel morphology sets the context for the flow regime. Although channel morphology has changed relative to the pre-dam period in the river sections below the USACE projects, it is likely that the rate of change has decreased, and the channel appears to have entered a dynamic equilibrium condition based on the maintenance needs of the navigation channel portions of the action area. It is not possible at this time to predict specific effects on channel morphology due to the influence of the proposed action on the flow regime. The proposed action relates to water management at federal projects in the ACT River Basin and includes limits on the extent to which the USACE alters basin inflow into the downstream river segments via operations of the ACT dams and reservoirs; therefore, the primary focus of this analysis is the flow regime of the rivers with and without the proposed action. This analysis of flow regime and water quality alteration relative to the listed species and critical habitats considers the following factors based on the 1998 Consultation Handbook (USFWS, 1998).

Proximity of the action: The proposed action may affect habitat occupied by all life stages of the listed species described in Section 5 in the rivers below USACE projects. Portions of these rivers are also designated as critical habitat. The proposed action includes releases from USACE dams and may affect some of the species’ life history stages and habitat features from as close as immediately below the dam to many miles downstream.

Distribution: The proposed action could alter flows in the rivers downstream of the USACE dams. The distribution of the various species considered is described in Section 5 (Status of the Species). This analysis examines how the proposed action may variously affect different portions of the action area according to the distribution of the species and important habitat features in the action area.

Timing: The proposed action could alter flows in the rivers downstream of the USACE dams at all times of the year. It will reduce flows when increasing conservation storage in the ACT reservoirs and increase flows when decreasing conservation storage. Therefore, we examine how the proposed action may alter the seasonal timing of biologically relevant flow regime features in our analysis.

Nature of the effect: Baseline reservoir operations under the approved 2015 ACT River Basin WCM update will reduce flows when increasing, or maintaining (during dry periods), conservation storage in the ACT reservoirs and will increase flows when decreasing conservation storage. The proposed action will result in incremental changes to established baseline reservoir operations at Allatoona, Weiss, and Logan Martin dams, but they do not represent radical departures from those daily and seasonal operations that were initially established to meet specific project purposes (e.g., peak hydropower generation). Flow regime and water quality may be incrementally affected by the operational changes included in the proposed action. Therefore, the analysis will address how the proposed action may affect the listed species and critical habitat elements through flow regime and water quality analyses focused on key locations in the basin.

Duration: This proposed action is a modification to the current operations at the USACE projects in the ACT River Basin and the operations described under the proposed action are applicable until revised or until another updated Water Control Plan is adopted. Although the duration of the proposed action is indefinite, the nature of its effects is such that none are permanent. The USACE can alter its reservoir operations at any time; therefore, flow alterations that may result from the proposed action will not result in permanent impacts to the habitat of any of the listed species. Therefore, we examine how implementation of the proposed action may alter the duration of high flows and low flows that are relevant to the listed species and critical habitats.

Disturbance frequency: The proposed action is applicable year-round; therefore, changes to the flow regime and water quality parameters may occur at any time and/or continuously until such time as the proposed action is revised or until another updated Water Control Plan is adopted. Therefore, we examine how implementation of the proposed action may alter the frequency of high flows and low flows that are relevant to the listed species and critical habitats.

Disturbance intensity and severity: The proposed action may variously affect the flow regime depending on time of year, basin inflow, and conservation storage levels. Therefore, we examine how the proposed action affects the magnitude of high and low flow events relative to the baseline. However, for the species considered, the most relevant adverse effects are likely those that occur during low flow conditions due to exposure of aquatic habitat and organisms, desiccation of individuals, spawning areas and food sources, increased access by predators and associated changes in water quality.

7.2 ANALYSIS FOR EFFECTS OF THE ACTION

The Effects Analysis for the proposed action uses the HEC-ResSim Model to simulate flow operations in the ACT Basin. The Effects Analysis includes HEC-5Q model simulations to evaluate the impacts of the proposed action on system-wide, stream and reservoir water quality. Details about the ResSim model and HEC-5Q model are provided in Section 7.3 (Model Description).

We determine the future effect of project operations by comparing the environmental conditions expected to occur under the proposed action, represented by the Alternative 11/TSP model simulation, to environmental conditions expected to occur if the proposed action is not implemented, represented by the No Action Alternative (NAA) model simulation.

The principal factor examined in determining effects for the proposed action is the flow regime in the rivers below Allatoona, Weiss, and Logan Martin dams and how the flow regime affects habitat conditions for the listed species. Differences between the Baseline (observed flows) and the proposed action simulated flow regimes are generally attributable to the USACE discretionary operations. However, it should be noted that some of the differences are also attributable to the conservative demand set utilized in the proposed action simulations. In many years, this represents a higher consumptive demand than actually occurred in the observed Baseline flow regime. The observed Baseline flow regime also includes incremental changes in operation that have occurred at both federal and non-federal reservoirs over time due to maintenance at hydropower facilities, operations for public health and safety, and other discretionary operations.

7.3 MODEL DESCRIPTION

HEC-ResSim

The water quantity effects associated with the water management alternatives and water supply storage options in the ACT River Basin were analyzed using the HEC-ResSim model. Analysis included the effects on lake levels and reservoir storage conditions, as well as streamflow conditions. HEC-ResSim is a state-of-the-art tool for simulating flow operations in managed systems. The USACE Hydrologic Engineering Center (HEC) developed this software, which has become the standard for USACE reservoir operations modeling. The analysis for the Draft FR/SEIS was performed using HEC-ResSim Version 3.4.1, Build 32 (May 2018). HEC-ResSim replaced its predecessor, HEC-5, as the next generation graphical user interface-based reservoir operations simulation software.

HEC-ResSim provides a realistic view of the physical river/reservoir system using a map-based schematic. The program's user interface allows the user to draw the network schematic as a stick figure or as an overlay on one or more georeferenced maps of the watershed. HEC-ResSim represents a system of reservoirs as a network composed of four types of physical elements: junctions, routing reaches, diversions, and reservoirs. By combining those elements, the modeler can build a network capable of representing as simple a model as a single reservoir on a single stream or as complex a model as a highly developed and interconnected system like the ACT River Basin. A reservoir is the most complex element of the reservoir network and is composed of a pool and a dam. HEC-ResSim assumes that the pool is level (i.e., it has no routing behavior), and its hydraulic behavior is completely defined by an elevation-storage-area table. The real complexity of HEC-ResSim's reservoir network begins with the dam. The HEC-ResSim modeling report, which is provided in Appendix C of the Draft FR/SEIS, describes the model's development and its application to the proposed actions in ACT River Basin.

HEC-5Q

The water quality effects associated with the water management alternatives and water supply storage options in the ACT River Basin were analyzed using the HEC-5Q model developed by the USACE Hydrologic Engineering Center (HEC). USACE selected HEC-5Q as the tool most capable of faithfully representing river-reservoir temperature and water quality at the culmination of a 3-year model development and verification process. A principal benefit of the HEC-5Q model is its ability to simulate the entire riverine and reservoir system in a single model. It can perform a holistic examination of the basin from top to bottom and simulate the watershed inflows, reservoirs, and river segments. The modeled output allows for a clear, longitudinal presentation of conditions to facilitate comparisons between alternative operations scenarios. In accordance with Engineering and Construction Bulletin 2007-6, Model Certification Issues for Engineering Software in Planning Studies, issued April 10, 2007, HEC-5Q falls under the category of "engineering models used in planning studies," leaving certification to the Science & Engineering Technology initiative associated with the USACE's Technical Excellence Network (TEN). As of January 2010, the TEN guidance listed HEC-5Q as "allowed for use" for water quality modeling.

7.4 MODEL SIMULATIONS

7.4.1 HEC-ResSim

USACE determined that the 73-year hydrologic period of record (1939–2011) would provide a reasonable range of future hydrologic conditions to use to simulate the effects of the alternative plans to current project operations and the NAA. For the NAA, net diversions for municipal and industrial (M&I) water supply (withdrawals minus returns of treated wastewater) and agricultural diversions for irrigation (assuming no returns) throughout the ACT River Basin were simulated by using 2006 values and applying them over the entire hydrologic period of record. All water-use data to support this analysis were provided by the state agencies responsible for regulating and tracking water withdrawals and returns in the respective states. Net diversion values in the ACT River Basin in 2006 represent the greatest annual amount of net water diversion in the basin during the period of simulation and, consequently, the year of greatest stress on the system from water withdrawals. Starting with average monthly values for each diversion, average daily values were calculated for each month (by dividing by the number of days), resulting in a year of daily values. The HEC-ResSim simulation applied those 2006 diversion values to hydrologic conditions for each year in the period of record.

Withdrawals and returns for the alternatives that include future water supply storage reallocation at Allatoona Lake were simulated using the estimated 2050 demands consistent with the State of Georgia's updated 2018 request. For the balance of the ACT River Basin, exclusive of CCMWA and City of Cartersville, year 2006 M&I net withdrawals, as well as agricultural withdrawal estimates, were simulated in the same manner as described for the NAA. The HEC-ResSim modeling report in Appendix C to the Draft FR/SEIS provides more information on how diversions were addressed.

The HEC-ResSim model simulations over the 73-year hydrologic period of record include the following assumptions: (1) the current USACE and APC projects in the ACT River Basin would be in place and operational over the entire period of record, and (2) the USACE and APC projects in the basin would be operated over the entire period of record either as they are currently operated (for the NAA) or as they would be operated under each of the alternatives developed for detailed consideration.

Based on those assumptions, observed or historic values for parameters such as lake levels or flows during the hydrologic period of record would be expected to vary from computed values in the simulations for the NAA. While observed values might track closely with model results in some cases, there are likely to be many cases in which the differences are more substantial because the model is not intended to replicate historic operating conditions.

Several alternatives were modeled, but this BA focuses on expected effects of the NAA and Alternative 11 (the TSP) relative to water quantity considerations. The HEC-ResSim model evaluates the extent of physical change in water resource parameters in the ACT River Basin that would likely result from implementation of the TSP and provides the principal basis for assessment of other natural resource impacts. Appendix E of the Draft FR/SEIS, Section E.3, includes a detailed analysis of the water quantity-related effects of the NAA and Alternative 11.

Table 7-1 summarizes the NAA and Alternative 11, including the names of the alternatives as modeled in HEC-ResSim and a brief description of the key features of each alternative. The alternative name in model corresponds to the data series in **Appendix D** figures. More details on the HEC-ResSim modeling for this Draft FR/SEIS may be found in the modeling report in Appendix C to the Draft FR/SEIS.

Table 7-1. Summary of Alternative Numbers and Model Names from HEC-ResSim.

Alternative Number	Alternative Name in Model	Description
1	A0-BASE2018	No Action Alternative
11 (TSP)	A11_WS6MF	Allatoona storage reallocation to enable withdrawals up to 94 mgd from combination of flood storage and conservation storage, using USACE current storage accounting methodology, and modified flood operations at APC Weiss and Logan Martin projects

7.4.2 HEC-5Q

To simulate water quality conditions under the various alternatives, HEC-5Q inputs included in-stream flows, tributary flows, water quality data, withdrawals, reservoir operations, and other point and nonpoint source flows and quality loads to the system. The HEC-5Q model was linked with the HEC-ResSim model through an input of flows by reach. In addition to the BASINS (Better Assessment Science Integrating point and Nonpoint Sources) model loadings developed in previous modeling efforts, observed data were used to represent the nonpoint inputs to the HEC-5Q model for the period of record from 2001 through 2008. The model also included nontributary inflows, wastewater treatment discharges, and cooling water returns. Inputs for wastewater treatment discharges were based on discharge monitoring reports (DMRs). When DMRs were not available, permitted limits, concentrations representative of the type of discharge, or an average of DMRs was used. The point source inputs considered only dischargers that contributed more than 1 mgd. The HEC-5Q modeling report, which is provided in Appendix C to the Draft FR/SEIS, includes model inputs, assumptions, and calibration for application of HEC-5Q to the proposed actions.

The model results provide the 5th, 50th (or median), and 95th percent occurrences. The median values reflect the points at which 50 percent of the calculated values are higher and 50 percent are lower. The 95th percent occurrence and 5th percent occurrence bracket the range of high and low calculated values that rarely occur. The results from the alternatives were analyzed along reaches and reservoirs within the ROI addressed by the Draft FR/SEIS (Coosa River and Etowah River upstream to Canton, Georgia) to determine the magnitude of any negative changes to water quality from the NAA and whether those changes would result in exceedances or additional exceedances of water quality standards.

7.5 GENERAL EFFECTS ON THE WATER QUANTITY

7.5.1 Lake Levels and Reservoir Storage Conditions

7.5.1.1 No Action Alternative

Allatoona Lake. Lake level and storage conditions in Allatoona Lake, including its seasonal pool level variations, would be consistent with baseline conditions. Median lake levels would generally align with the current project guide curve from January through mid-July, subsequently declining gradually from about 840 ft to 832 ft by the end of November, and thereafter aligning with the guide curve down to elevation 823 ft by the end of December (***Figure D-10***). At the 90 percent exceedance level (dry conditions), the pool level would not reach to the project guide curve at any time of the year. Pool levels would be slightly below the winter guide curve elevation of 823 ft in January to a peak elevation of about 838 ft in May, thereafter declining at a steady rate to an elevation around 823 ft by the end of December (***Figure D-11***). Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be elevation 818.4 ft, about 4.6 ft below the winter guide curve level of 823 ft. Under current operations, the Allatoona Lake surface area decreases dramatically as the lake level drops during seasonal drawdown and periods of basin inflow. At the normal summer pool elevation of 840 ft, the lake’s surface area is 11,164 ac. The lake’s surface area drops to 6,962 acres at the winter drawdown level of 823 ft, almost a 38 percent reduction in surface area.

Weiss Lake. Lake level and storage conditions in Weiss Lake, including its seasonal variations, would be consistent with baseline conditions. Median lake levels would align with the current project guide curve from January through mid-July, decline slightly below the guide curve (up to 1 ft) from mid-July through mid-November, and align with the guide curve from mid-November through December (***Figure D-12***). At the 90 percent exceedance level, the pool levels would align with the project guide curve from January through mid-April, decline slightly below the guide curve to a peak level of 563.6 ft by the end of May, decline gradually to about 558.2 ft by the end of November, and remain there through December (***Figure D-13***). Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be elevation 556 ft, about 2 ft below the current minimum winter guide curve level of 558 ft. Under current operations, the Weiss Lake surface area decreases appreciably as the lake level drops during seasonal drawdown and periods of low basin inflow. At the normal summer pool elevation of 564 ft, the lake’s surface area is 30,028 ac, but the surface area drops to 19,603 ac at the current winter drawdown level of 558 ft, almost a 35 percent reduction in surface area.

H. Neely Henry Lake. Lake level and storage conditions in H. Neely Henry Lake, including its seasonal variations, would be consistent with baseline conditions. Over the modeled period of record, median lake levels would align with the current project guide curve level of 507 ft from December through March and would subsequently increase to the guide curve level of 508 ft through the end of June. The median pool levels would decline slightly (up to 0.5 ft) below the guide curve from July through mid-November. At the 90 percent exceedance level, the pool levels would be 1 to 3 ft lower than the project guide curve level of 507 ft from January through March and guide curve level of 508 ft through May. Thereafter, the pool levels would remain consistently about 1 ft below the guide curve for the balance of the year. Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be elevation 502.5 ft, about 4.5 ft below the winter guide curve level of 507 ft.

Logan Martin Lake. Lake level and storage conditions in Logan Martin Lake, including its seasonal variations, would be consistent with baseline conditions. Over the modeled period of record, median lake levels would align with the current project guide curve from January through June, decline slightly below the guide curve (up to 1 ft) from July through mid-November, and align with the guide curve from mid-November through December (***Figure D-14***). At the 90 percent exceedance level, the pool levels would align with the guide curve from January through mid-April, decline slightly below the guide curve to a peak level of 464.3 ft by mid-May, and then decline gradually to about elevation 460 ft by the end of December (***Figure D-15***).

Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be elevation 458 ft, about 2 ft below the current minimum winter guide curve level of 460 ft. Under current operations, the lake's surface area decreases appreciably as the pool level drops during seasonal drawdown and periods of low basin inflow. At the normal summer pool elevation of 465 ft, the lake's surface area is 15,270 ac, and the surface area drops to 11,894 ac at the current winter drawdown level of 460 ft, about a 22 percent reduction.

Lay, Mitchell, and Jordan Lakes. These lakes, in descending order (upstream to downstream), lie between Logan Martin Dam and the mouth of the Coosa River, just upstream from Montgomery, AL. APC would continue to operate the three reservoirs as run-of-river hydropower projects under the NAA.

R.F. Henry Lock and Dam/R.E. "Bob" Woodruff Lake. This project is the most upstream of three USACE reservoirs on the Alabama River, with a stable pool elevation of 126 ft under normal conditions from the lock and dam upstream to the Montgomery, AL area, near the confluence of the Coosa and Tallapoosa rivers. USACE would continue to operate the project for federally authorized purposes under the NAA.

7.5.1.2 Tentatively Selected Plan

Allatoona Lake. Under Alternative 11, USACE would reallocate an additional 33,872 ac-ft of reservoir storage at Allatoona Lake from a combination of flood storage (11,670 ac-ft) and conservation storage (22,202 ac-ft) to M&I water supply. The summer guide curve elevation would be raised from 840 ft to 841 ft and the winter guide curve elevation would be raised from 823 ft to 824.5 ft. Thus, the pool level in Allatoona Lake would be maintained at a slightly higher level throughout the year compared to current operations under the NAA.

Over the simulated 73-year period of hydrologic record, median pool levels in Allatoona Lake would be between about 1 to 1.5 ft higher than the NAA from January through July and from 0 to 1 ft higher from August through December (***Figure D-10***). At the 90 percent exceedance level (dry conditions), the pool levels would be about 1 to 1.5 ft higher than the NAA from mid-December through May and 0 to 1 ft higher from June to mid-December (***Figure D-11***). Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be elevation 817.3 ft, about 1.1 ft lower than the NAA and about 5.7 ft below the current winter guide curve level of 823 ft.

Weiss Lake. Under Alternative 11, flood operations at Weiss Dam and Lake would be revised as described in Section 3.2.1. The maximum surcharge level at the project would be lowered from 574 ft to 572 ft, and the winter guide curve level would be raised from 558 ft to 561 ft. Compared to the NAA, pool levels at Weiss Lake would be expected to be higher from September through February each year.

Over the period of hydrologic record, median pool levels in Weiss Lake would range from a few inches up to about 3 ft higher than the NAA from September through February and would be the same level as the NAA from March through August (***Figure D-12***). At the 90 percent exceedance level, pool levels would range from a few inches higher up to about 2 ft higher than the NAA from September through February and would be the same level as the NAA from March through August (***Figure D-13***). Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be 556 ft, about the same minimum level as the NAA and 2 ft below the current winter guide curve level. Under Alternative 11, the Weiss Lake pool level would likely drop below the current winter pool level of 558 ft in 3 years over the 73-year period of record analyzed compared to 24 years for the NAA. The Weiss Lake surface area at the proposed winter guide curve level (561 ft) under Alternative 11 would be 24,693 ac compared to 19,603 ac at the current winter guide curve level under the NAA (558 ft).

H. Neely Henry Lake. No changes to project operations are proposed at H. Neely Henry Dam, but proposed changes in flood operations upstream at Weiss Dam and Lake under Alternative 11 may affect pools levels in H. Neely Henry Lake.

Over the period of hydrologic record, median pool levels in H. Neely Henry Lake would about the same as the NAA from mid-November through August and slightly lower (up to about 0.2 ft) than the NAA from September through mid-November. At the 90 percent exceedance level (dry conditions), the plotted values for Alternative 11 and the NAA are essentially the same. Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be 502.5 ft, about the same minimum level as the NAA and 4.5 ft below the current winter guide curve level. The H. Neely Henry Lake pool level would likely drop below the current winter pool level of 507 ft in all 73 years over the modeled period of record for both Alternative 11 and the NAA.

Logan Martin Lake. Under Alternative 11, flood operations would be revised as described in Section 3.2.2. The maximum surcharge level at the project would be lowered from 477 ft to 473.5 ft, and the winter guide curve level would be raised from 460 ft to 462 ft. Compared to the NAA, pool levels at Weiss Lake would be expected to be higher from October through April each year based on the guide curve change.

Over the period of hydrologic record, median pool levels in Logan Martin Lake under Alternative 11 would range from a few inches up to about 2 ft higher than the NAA from mid-October through the first week of May, the same level as the NAA from the first week of May through August, and up to 0.5 ft lower than the NAA in September through mid-October (***Figure D-14***). At the 90 percent exceedance level, the pool levels would range from a few inches higher up to about 2 ft higher than the NAA from October through about mid-May and would be essentially the same level as the NAA from mid-May through September (***Figure D-15***). Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be 458 ft, which would be the same minimum level as the NAA and 2 ft below the current winter guide curve level. The pool level would likely drop below the current winter pool level of 460 ft in 5 years over the 73-year period of record compared to 38 years for the NAA. Under Alternative 11, the Logan Martin Lake surface area at the proposed winter guide curve level (462 ft) would be 13,157 ac compared to 11,894 ac at the current winter guide curve level under the NAA (460 ft).

Lay, Mitchell, and Jordan Lakes. As run-of-river projects, the Alternative 11 would be expected to have a negligible incremental effect on lake levels compared to current operations under the NAA, even with the inclusion of modified flood operations at Weiss and Logan Martin dams. The upstream end of Lay Lake may experience slight and short-term increases in pool levels during flood events when modified flood operations at Logan Martin Dam would be triggered.

R.E. "Bob" Woodruff Lake. Based upon review of model outputs over the hydrologic period of record, Alternative 11 would have no discernable effects on pool levels at R.E. "Bob" Woodruff Lake. The physical effects of the proposed actions at Allatoona, Weiss, and Logan Martin lakes included in Alternative 11 do not extend downstream of the mouth of the Coosa River.

7.5.2 Streamflow Conditions

This section summarizes the effects of alternatives to address proposed reallocation of reservoir storage for water supply in Allatoona Lake and APC-proposed flood storage and flood operations modifications at the Weiss and Logan Martin reservoir projects on stream flow conditions at critical locations in the ACT River Basin. Figures referenced in this section are provided in **Appendix D**. Representative plots of HEC-ResSim model outputs are based on simulated project operations under the alternative plans over the modeled period of record (1939–2011) and provide a foundation upon which to describe the expected effects of the NAA and the TSP (Alternative 11) on stream flow conditions at the following locations in the basin: (1) Etowah River downstream of Allatoona Dam; (2) Coosa River near Rome, GA; (3) Coosa River downstream of Logan Martin Dam; and (4) Alabama River near Montgomery, AL.

Figures depicting median flow conditions in the basin are considered to provide a representative characterization of “typical” conditions for evaluation and comparison among alternatives. Selected figures depicting the 90 percent exceedance level have been included and are representative of substantially dry conditions in the basin.

7.5.2.1 No Action Alternative

Etowah River downstream of Allatoona Dam. USACE would continue to operate Allatoona Dam and Lake in accordance with the ACT River Basin Master Manual and Allatoona WCM updates approved in May 2015. An important feature of Allatoona Dam operations is the requirement to provide a continuous minimum release of 240 cfs to the Etowah River. Note that, in modeling the releases from Allatoona Dam, the minimum flow in the model includes both the continuous releases from the small service generator at the project plus an allowance for leakage at the dam. Thus, the minimum releases in the model outputs, as depicted in the figures that follow, are shown as 365 cfs.

Figure D-16 depicts median daily flow in the Etowah River downstream of Allatoona Dam for the NAA, analyzed over the 73-year period of record. Median daily flows would be as follows: 1,200 to 1,500 cfs from January through April; 1,500 cfs from May through July (except for one brief peak up to 1,900 cfs in early May); 800 to 1,200 cfs from August through November (except for a few daily peaks in August up to 1,500 cfs); and 2,000 to 2,300 cfs in December. The variations in flow conditions throughout the year are a direct function of the number of hydropower units operating and number of hours they are in operation on any day during the year. ***Figure D-17*** presents the 90 percent exceedance daily flow values over the modeled period of record. Daily flows for the NAA would likely be as follows: 365 to 1,320 cfs from December through mid-January; 365 to 780 cfs from mid-January through mid-May; and stable at 365 cfs from mid-May through November. The 90 percent exceedance values for the NAA downstream of Allatoona Dam would be equal to the modeled minimum flow value of 365 cfs over substantial portion of the year. However, ***Figure D-17*** indicates that some hydropower generation consistently occurs from December through May, even during extremely dry conditions.

Coosa River near Rome, GA. The specific location for evaluation of flow conditions for the NAA and other alternatives is the Coosa River at Mayo’s Bar, about 7.5 downstream from the confluence of the Oostanaula and Etowah rivers at the location of the USGS gage station number 02397000. Under the NAA, USACE project operations at Carters Dam and Lake/Carters Reregulation Dam and at Allatoona Dam and Lake would continue in accordance with the ACT River Basin Master Manual and Allatoona WCM updates approved in May 2015.

Figure D-18 depicts median daily flow in the Coosa River near Rome for the NAA, analyzed over the 73-year period of record. Under the NAA, median daily flows would range from about 6,000 cfs to 11,000 cfs from January through mid-April, from about 6,000 cfs to a low point of 2,000 cfs from May through mid-September, and gradually increasing back to around 6,000 cfs by the end of December. ***Figure D-19*** presents the 90 percent exceedance daily flow values (dry conditions) over the modeled period of record. Daily flows for the NAA would likely range from about 2,800 cfs in January to a peak around 4,800 cfs in mid-March, thereafter, gradually declining to a low point of about 1,200 cfs by the end of September; and increasing to around 3,200 cfs by the end of December.

Coosa River downstream of Logan Martin Dam. For the NAA, APC project operations at Weiss Dam, H. Neely Henry Dam, Logan Martin Dam, and the three APC run-of-river projects on the Coosa River (Lay, Mitchell, and Jordan/Bouldin dams) would continue under the current FERC license. Specifically, flood operations at the Weiss and Logan Martin dams, as described in Section 3.2.1 and Section 3.2.2, would continue in coordination with USACE as they have been conducted in the past. Project operations at USACE upstream reservoir projects in the basin, Carters Dam/Reregulation Dam and Allatoona Dam, would continue as currently operated. APC reservoirs on the Tallapoosa River would continue to operate in accordance with their current FERC licenses.

Figure D-20 depicts median daily flow in the Coosa River below Logan Martin Dam for the NAA, analyzed over the 73-year period of record. Median daily flows would range from about 10,000 to 20,000 cfs from mid-December through mid-April and 5,000 to 10,000 cfs from mid-April to mid-December (July through late November would be level at 5,000 cfs). ***Figure D-21*** presents the 90 percent exceedance daily flow values (dry conditions) over the modeled period of record. Daily flows for the NAA would likely range from about 5,000 to 9,400 cfs in December through May. From June through mid-November, daily flows under the NAA would decline gradually from about 5,000 cfs to a low ranging between 1,800 and 2,600 cfs during September and October, thereafter increasing to about 5,000 cfs by late November.

Alabama River at the confluence of the Coosa and Tallapoosa Rivers. The modeled discharges at this location are not based upon or referenced to a specific USGS gage station on the Alabama River. Rather, the modeled discharges represent the sum of the releases over time from Jordan Dam, Bouldin Dam (two outlets from Jordan Lake on the Coosa River) and Thurlow Dam (the most downstream dam on the Tallapoosa River) and is referred to as the JBT (Jordan-Bouldin-Thurlow) flow. The JBT flow is considered representative of the flow conditions in the Alabama River at the juncture of the Coosa and Tallapoosa rivers and serves as one of the key locations in the ACT River Basin for comparison of the physical effects (flow conditions) of proposed actions considered in this Draft FR/SEIS.

Figure D-22 depicts median daily flow in the Alabama River at the confluence of the Coosa and Tallapoosa rivers for the NAA, analyzed over the 73-year period of record. Median daily flows would range from about 20,000 to 34,000 cfs from January through mid-April, declining gradually from 20,000 cfs to about 7,500 cfs in September, and gradually increasing to 20,000 cfs by the end of December. ***Figure D-23*** presents the 90 percent exceedance daily flow values over the modeled period of record. Daily flows for the NAA would likely range from about 8,000 to 16,000 cfs from mid-December through May. From June through mid-December, 90 percent exceedance daily flows under the NAA would range between 8,000 cfs and 4,600 cfs, with flows mid-June to mid-November level at about 4,600 cfs.

Figure D-25 is the annual flow duration curve for the Alabama River at the confluence of the Coosa and Tallapoosa rivers. For the NAA, median daily flows over the year would be about 12,050 cfs, 49,030 cfs would be exceeded on about 10 percent of the days, and 4,990 cfs would be exceeded on 90 percent of the days. On 99 percent of days over the period of record, flows would exceed 3,700 cfs.

7.5.2.2 Tentatively Selected Plan

Etowah River downstream of Allatoona Dam. Alternative 11 would likely result in minor changes to flow conditions in the Etowah River below Allatoona Dam compared to the NAA. The minor differences from flow conditions under Alternative 11 compared to the NAA are likely to be a direct result of some adjustments in the number of units generating and the number of hours they would be generating in order to maintain the pool in Allatoona Lake at a slightly higher level (about 1 to 1.5 ft) during the year. Releases from Allatoona Dam under Alternative 11 would closely align with those under the NAA at the median, and 90 percent exceedance levels (***Figure D-16*** and ***Figure D-17***), but would be marginally lower, mostly in the November through March period. Little change in releases from Allatoona Dam would be expected in the late spring and summer months. ***Table 7-2*** provides a comparison of the extent of change in releases that would occur between Alternative 11 and the NAA on an annual basis, for the month of September, and for the month of December at the 10, 25, 50, 75, and 90 percent of days exceedance levels. Generally, the differences are marginal to negligible. At the 90 percent exceedance level for the month of December, the modeled flow for the NAA appears to be notably larger than Alternative 11 (769 cfs compared to 365 cfs). On the duration curve for the month of December from which the values in ***Table 7-2*** were derived, the NAA and Alternative 11 values are very close. The 90 percent exceedance flow values for the NAA and Alternative 11 do not fully reflect how close their values actually are. For example, at the 91 percent exceedance level on the duration curve, the modeled NAA flow drops to 422 cfs. At 92 percent exceedance level on the duration curve, the modeled NAA flow is 365 cfs, the same as Alternative 11, reflecting a negligible shift in the duration curve for Alternative 11 compared to the NAA.

Table 7-2. Etowah River Downstream of Allatoona Dam—Selected Flow Duration Data Over the Modeled Period of Record.

Period	Percent of days exceeded	NAA (cfs)	Alternative 11 (cfs)
Annual (entire year)	10	3,063	2,963
	25	1,929	1,911
	50	1,197	1,192
	75	776	773
	90	365	365
September	10	1,762	1,935
	25	1,160	1,156
	50	965	961
	75	569	569
	90	365	365
December	10	4,295	4,108
	25	2,805	2,651
	50	2,091	2,025
	75	1,979	1,534
	90	769	365

Coosa River near Rome. The USGS gage 02397000 at Mayo's Bar (Rome-Coosa) is an important location for measuring changes in flow conditions in the Coosa River because it is located just few miles upstream of the GA/AL state line and about 56 miles downstream of Allatoona Dam. The Oostanaula River joins the Etowah River at Rome, about 49 miles downstream of Allatoona Dam. Alternative 11 would likely result in negligible changes to flow conditions compared to the NAA. Any detectible changes from flow conditions under the NAA would likely be related to adjustments in the number of units generating and the number of hours of generation in order to maintain the pool at Allatoona Lake at a slightly higher level during the year under Alternative 11. Median flows in the Coosa River throughout the year would closely align with those for the NAA and show no appreciable differences, except for some limited occurrences in late November through February when flows under Alternative 11 would be slightly lower than the NAA (***Figure D-18***). At the 90 percent exceedance level (dry conditions), flows under Alternative 11 would closely match the NAA, except that they would likely be slightly lower than the NAA (by 100-200 cfs) during December and early January (***Figure D-19***).

Table 7-3 compares the extent of change in releases that would occur between Alternative 11 and the NAA on an annual basis, for the month of September, and for the month of December at the This conclusion is supported by data presented in ***Table 7-3*** that show negligible differences in flow values at the 10, 25, 50, 75, and 90 percent exceedance levels on an annual basis.

The current drought operations plan for the ACT River Basin was approved in May 2015 as an integral part of the USACE update of the ACT River Basin Master Manual and project WCMs (see Draft FR/SEIS Appendix E, Section E.3.2.3, and Appendix A for more details on the drought operations plan). One of the three key triggers that activates the drought operations plan for the ACT River Basin is based on 7Q10 flows at the Alabama/Georgia state line as measured at USGS gage 02397000, Coosa River (Mayo's Bar) near Rome, GA. The 7Q10 flows for the drought trigger are derived from historic flow data at the USGS gage. When flows decline below the monthly 7Q10 value, drought operations would be activated for management of downstream APC reservoirs (at Level 1 or higher depending on whether one or more of the other triggers have been exceeded). ***Table 7-4*** presents the 7Q10 values by month at the Rome-Coosa gage and the percent of days over the modeled period of record that 7Q10 flows would likely be exceeded for the NAA and Alternative 11. Alternative 11 would result in a negligible change in the percent of days that 7Q10 flows would be exceeded compared to the NAA.

Table 7-3. Coosa River Near Rome, GA—Selected Flow Duration Data Over the Modeled Period of Record.

Period	% of days exceeded	NAA (cfs)	Alternative 11 (cfs)
Annual (entire year)	10	14,148	14,099
	25	7,152	7,107
	50	4,078	4,068
	75	2,604	2,608
	90	1,798	1,805
September	10	4,422	4,541
	25	2,966	3,020
	50	2,173	2,179
	75	1,653	1,651
	90	1,291	1,280
December	10	14,281	14,172
	25	8,263	8,167
	50	5,276	5,135
	75	3,530	3,397
	90	2,669	2,575

Table 7-4. Coosa River Near Rome, GA—Percent of Days Over the Modeled Period of Record that Flows Would Likely Exceed the Monthly 7Q10 Value.

		Percent of days flow would exceed 7Q10 values	
Month	Monthly 7Q10 Value (cfs)	No Action Alternative (BASE2018)	Alternative 11 (WS6MF)
January	2,544	94.1%	94.2%
February	2,982	94.6%	94.7%
March	3,258	97.0%	97.1%
April	2,911	94.6%	94.7%
May	2,497	93.2%	93.4%
June	2,153	91.6%	92.0%
July	1,693	93.5%	93.6%
August	1,601	88.2%	88.6%
September	1,406	85.7%	85.4%
October	1,325	89.6%	89.4%
November	1,608	89.8%	88.8%
December	2,043	96.3%	95.2%

Note: Based on USGS Coosa River at Rome Gage (Mayo's Bar, USGS 02397000) observed flow from 1949 to 2006

Since the Coosa River near Rome is a critical location in consideration of drought conditions and drought management activities, ***Figure D-26*** plots the modeled flow values for Alternative 11 and the NAA for the period from January 2007 through December 2009, which includes the drought of record in the ACT River Basin, to determine how flow conditions under Alternative 11 would compare to the NAA during that period. The plot shows little to no difference between Alternative 11 and the NAA. Any deviations between Alternative 11 and the NAA over that three-year period would are minor as shown in the figure. Therefore, the proposed reallocation of storage at Allatoona Lake would not be expected to worsen flow conditions in the Coosa River near Rome, GA under a similar extreme drought event in the future.

Based on a review of model outputs over the modeled period of record, Alternative 11 would not be expected to deviate appreciably from flow conditions in the Coosa River near Rome (Mayo's Bar) under the NAA.

Coosa River downstream of Logan Martin Dam. Potential changes in flow conditions in the Coosa River downstream of Logan Martin Dam under Alternative 11 are principally influenced by the APC-proposed modifications to flood operations and proposed changes to maximum surcharge levels and guide curves at the APC Weiss and Logan Martin projects. The HEC-ResSim model simulation demonstrates that the reservoir storage reallocation feature at Allatoona Lake in Alternative 11 would have little to no influence on flow conditions downstream of Logan Martin Dam.

Alternative 11 would likely result in minor changes to flow conditions in the Coosa River downstream of Logan Martin Dam compared to the NAA. Median flows in the Coosa River throughout the year under Alternative 11 would closely align with those for the NAA but would be slightly lower than the NAA in November and December as releases from Logan Martin Dam would decrease to maintain a higher winter pool level in the lake. Releases from the dam would be slightly higher than the NAA during January through April in response to modified flood operations that would increase releases during flood events (***Figure D-20***). At the 90 percent exceedance level, flows under Alternative 11 would be notably lower than the NAA from September through early January (ranging from 200 to 2,000 cfs lower) as releases would be reduced to maintain a higher winter pool level, but they would be higher from early January through February and in April associated with increased releases associated with the modified flood operations (***Figure D-21***).

Compared to the NAA, Alternative 11 model outputs over the period of record show a slight increase in releases at the 2 to 3 percent exceedance level compared to the NAA, a slight reduction in releases at the 3 to 10 percent exceedance level, and a slight reduction in releases at the 85 to 99 percent exceedance level (see ***Table 7-5***). Overall, Alternative 11 would likely have a minor effect on flow conditions in the Coosa River below Logan Martin Dam between September and March each year and little to no effect on flow conditions between April and August each year.

Table 7-5. Coosa River Downstream of Logan Martin Dam—Selected Flow Duration Data Over the Modeled Period of Record.

Period	% of days exceeded	NAA (cfs)	Alternative 11 (cfs)
Annual (entire year)	10	29,840	29,289
	25	14,414	14,414
	50	7,026	6,955
	75	5,094	5,081
	90	3,474	3,268
March	10	50,000	48,036
	25	33,028	31,625
	50	18.293	18,322
	75	12,007	12,015
	90	8,069	8,117
September	10	7,856	7,009
	25	5,120	5,108
	50	5,037	5,023
	75	3,398	2,826
	90	2,108	1,742

Alabama River at the confluence of the Coosa and Tallapoosa Rivers. As described in more detail in Draft FR/SEIS Appendix E, Section E.3.2.2.1.4, the modeled discharges for the Alabama River at the confluence of the Coosa and Tallapoosa rivers represent the sum of the releases over time from Jordan Dam, Bouldin Dam (two outlets from Jordan Lake on the Coosa River) and Thurlow Dam (the most downstream dam on the Tallapoosa River) and is referred to as the JBT (Jordan-Bouldin-Thurlow) flow. ***Figure D-22*** depicts median daily flow in the Alabama River at the confluence of the Coosa and Tallapoosa rivers for the NAA, analyzed over the 73-year period of record. ***Figure D-23*** presents the 90 percent exceedance daily flow values (dry conditions) over the modeled period of record. ***Figure D-24*** presents the 10-percent exceedance daily flow values (wet conditions) over the modeled period of record. ***Figure D-25*** is the annual flow duration curve for the Alabama River at the confluence of the Coosa and Tallapoosa rivers.

At this location, median flows throughout the year for Alternative 11 over the modeled period of record would closely align with those for the NAA. However, due to the residual downstream effects of proposed modifications to flood operations at the APC Weiss and Logan Martin projects, flows at this location would be marginally lower than the NAA in October through December, resulting from water management actions to maintain higher winter pool levels in Weiss and Logan Martin lakes. Median flows under Alternative 11 would be marginally higher from January through March associated with modified flood operations at the Logan Martin and Weiss projects (***Figure D-22***). At the 90 percent exceedance level, flows for Alternative 11 would be nearly the same as those for the NAA throughout the year, except for a slight decrease in December and slight intermittent increases in January, February, and April (***Figure D-23***). At the 10-percent exceedance level (wet conditions), flows for Alternative 11 and the NAA align closely, and there are no appreciable differences in flow conditions throughout the year (***Figure D-24***).

The annual duration curve for Alternative 11 (***Figure D-25***) is nearly identical to the annual duration curve for the NAA. See also the pertinent data presented in ***Table 7-6***. Review of monthly duration curves for flows in the Alabama River at the confluence of the Coosa River and Tallapoosa River revealed that the curves for Alternative 11 would be nearly identical to those for the NAA in all months of the year except for September, October, and December. In each of those three months, flows under Alternative 11 would be marginally lower on the portion of the curve that represents drier conditions at that location. This occurrence reflects the remaining residual effects of reduced releases at Weiss Dam and Logan Martin Dam in the fall to maintain a higher winter pool level.

Table 7-6. Alabama River Near Montgomery (JBT Flow)—Selected Flow Duration Data Over the Modeled Period of Record.

Period	% of days exceeded	NAA (cfs)	Alternative 11 (cfs)
Annual (entire year)	10	49,025	47,971
	25	24,089	24,091
	50	12,047	11,931
	75	8,260	8,232
	90	4,989	4,771
September	10	12,519	11,436
	25	9,005	8,768
	50	7,600	7,600
	75	4,640	4,640
	90	4,614	4,638
December	10	50,837	48,781
	25	26,606	25,508
	50	15,862	14,864
	75	9,985	9,340
	90	8,332	7,752

Alternative 11 is expected to have a negligible overall effect on flow conditions in the Alabama River at the confluence of the Coosa and Tallapoosa rivers and further downstream of Montgomery, AL. HEC-ResSim outputs addressing conditions under Alternative 11 and the NAA for R.F. Henry Lock and Dam/Robert “Bob” Woodruff Lake were reviewed to confirm this conclusion.

7.6 GENERAL EFFECTS ON WATER QUALITY

7.6.1 No Action Alternative

The NAA represents the current conditions with the current withdrawals at Allatoona Lake and the USACE storage accounting methodology. Water quality conditions under the NAA would generally be consistent with those described in Section 6.2 for the baseline conditions. Water quality impairments within the ROI under baseline conditions would remain under the NAA.

7.6.2 Tentatively Selected Plan

The results from Alternative 11 were analyzed along reaches and reservoirs within the ROI addressed by the Draft FR/SEIS (Coosa River and Etowah River upstream to Canton, Georgia) to determine the magnitude of any negative changes to water quality from the NAA and whether those changes would result in exceedances or additional exceedances of water quality standards. For this evaluation, the all-year model results were analyzed that reflect average water quality values throughout the year. Model results for specific time periods were analyzed if water quality standards specify use of growing season averages (e.g., chlorophyll *a* and TN). ***Table 7-7*** cross-references the alternative numbers with the alternative names included on the model graphs presented in **Appendix D**.

Table 7-7. Summary of Alternative Numbers and Model Names for HEC-5Q.

Alternative Number	Alternative Name in Model	Description
0	A0-BASE2018	No Action Alternative (NAA)
11	A11_WS6MF	Allatoona storage reallocation to enable withdrawals up to 94 mgd from combination of flood storage and conservation storage, using USACE current storage accounting methodology, and modified flood operations at APC Weiss and Logan Martin projects

Standards for water temperature do not allow increases of more than 1.5 °F during June – September. Along the Etowah River, there is no discernible difference between Alternative 11 and NAA water temperatures. For the Coosa River, the simulated temperatures for Alternative 11 only have small deviations from the NAA between H.N. Henry and Weiss and downstream of Weiss, none of which are greater than 1.5 °F (***Figure D-27***).

The model results demonstrate that Alternative 11 would not be expected to have a detectable effect on the DO concentrations upstream of Allatoona Lake compared to the NAA (***Figure D-3***). For Coosa River, Alternative 11 would have a minimal effect on the DO concentrations. Alternative 11 model results show a minor decrease in DO from the NAA of 0.16 mg/L downstream of Weiss Lake at the 95 percent occurrence; however, this change is not expected to have a significant impact on water quality (***Figure D-28***).

Downstream of Canton, the model predicts a peak difference in TP at the 95 percent occurrence between Alternative 11 and NAA of approximately 0.01 mg/L (10 µg/L). There are no other discernible changes in TP concentrations on the Etowah River (***Figure D-29***). The difference in TP near Canton is expected to amplify during a dry year to approximately 0.02 mg/L (20 µg/L) (***Figure D-30***). The Coosa River responds to Alternative

11 with very little change in TN from the NAA. A peak increase of less than 0.01 mg/L (10 µg/L) is modeled at 95 percent occurrence near Weiss Lake, but no other significant changes can be discerned.

For the Etowah River, modeled results show no discernible change in TN between TSP operations and the NAA. The HEC-5Q model simulations show a potential increase in TN concentrations of 0.03 mg/L immediately downstream of Weiss Lake at the 50 percent occurrence for Alternative 11 but a decrease in TN concentrations of approximately 0.14 mg/L at the 95 percent occurrence upstream of Weiss Lake (***Figure D-7***). Other less significant decreases in TN concentration can be noted farther downstream where concentrations are modeled about 0.04 mg/L lower at the 95 percent occurrence between Weiss Lake and H. Neely Henry Lake and by about 0.03 mg/L at the 95 percent occurrence upstream of Mitchell Lake (***Figure D-31***).

The model results demonstrate that Alternative 11 would not be expected to have an incremental effect on chlorophyll *a* concentration in Allatoona Lake compared to the NAA. Some temporary exceedances of standards at equivalent concentrations for both the NAA and Alternative 11 would occur (***Figure D-32***). For the Coosa River, Alternative 11 would have no discernible incremental effect on chlorophyll *a* concentration compared to the NAA.

Overall, median values that were modeled in HEC-5Q meet all state water quality standards along the Etowah River and the Coosa River and their reservoirs except for the TP concentration in Weiss Lake. Modeled values at the 95 percent occurrence fail to meet state standards in all reservoirs for chlorophyll *a* and in Weiss Lake for TP. DO standards are met at every reservoir for every occurrence level except Allatoona Lake and Logan Martin Lake at the 5 percent occurrence level. Modeled results at the 50 percent and 95 percent occurrence levels fail to meet the USEPA acceptable ranges for TP in all reservoirs and at the 5 percent occurrence level in Weiss Lake and H. Neely Henry Lake; however, USEPA acceptable ranges for TN are met in all reservoirs for all occurrence levels. The reservoirs failing to meet state standards or USEPA acceptable ranges fail regardless of whether Alternative 11 or NAA is implemented. Changes in concentrations of water quality parameters resulting from the implementation of Alternative 11, have no significant effects on the water quality in the region of interest.

7.7 GENERAL EFFECTS ON PRIMARY TRIBUTARIES WITHIN THE ROI

Primary tributary streams to the Coosa and Etowah rivers could potentially be affected if the mainstem river flows and/or pool elevations at the confluence of these tributary streams were high enough to cause an increased backwater effect into these tributaries. While erosion of streambed and suspension of particles is to some scale continuous, high flows during flood events usually create higher velocities along the streambed. These higher velocities can erode and suspend particles of varying sizes, including those that are not suspended by normal flows. High velocity flow events will erode silt and sand. Streams carry fine clay and silt particles as suspended load, and coarse sands and gravels as bed load. These particles remain suspended due to high velocities.

At the confluences of creeks and rivers, the stage of both the river and the creek can be raised during flood events. The mainstem river rises due to increased inflow, which could create a backwater effect, causing the stage of uncontrolled tributaries to increase and flow velocity to slow (Wang, Yan, Duan, Liu, & Huang, 2019). At this river confluence, deposition of sediment in tributaries can occur via velocity reduction or reverse flow of the tributary. Tributaries can reverse flow at confluences where the discharge of the main river is high enough to overtake the discharge of the tributary (Rice, Rhoads, & Roy, 2008). In the ACT Basin, most confluences have one stream/creek with a discharge much higher than the other; the exceptions to this are the Oostanaula and Etowah Junction, the Coosa and Tallapoosa Junction, and the Tombigbee and Alabama Junction.

In addition to flow velocity, there are many parameters that impact sedimentation rates and quantities along rivers and tributaries, such as suspended sediment load, reservoir residence time, flow, stage, and duration. While all of these parameters cannot be analyzed based on existing and available data, flood event elevation and duration can be examined based on existing hydraulic modeling. HEC-RAS modeling results were used to determine the potential for increased flood heights associated with the features of the proposed action when compared to the NAA.

Supplemental to the extensive modeling conducted and analyzed for lake pool levels and river flows along the Coosa River (as described in Section 7.4.1), data on a modeled 5-year (yr) flood annual exceedance event (based off of an approximate October 1995 event) and a 100-yr flood annual exceedance event (based off of an approximate February 1991 event) for the Coosa River were used to assess flood event elevation changes and potential impacts to tributaries from the modified flood operations under the proposed action (***Table 3-1*** and ***Table 3-2***). The 5-yr model was selected for this analysis based on chance of occurrence (more likely to occur) and the 100-yr model was selected to represent prediction of flood elevations under an extreme event (least likely to occur). While the river stage and flows of the mainstem and tributaries increase during flood events, the analysis focuses on the respective differences between flood occurrence elevations modeled under the operations of the proposed action and those of the NAA. Elevation differences are based off of the difference in selected data point values (locations in the middle of the channel were manually selected using ArcGIS Desktop version 10.6).

Modeled elevation data for the Coosa River extend from below Weiss Dam to Jordan Dam. In addition to the old Coosa River channel being evaluated in this analysis, the primary tributaries with designated critical habitat within the ROI were evaluated; they are Terrapin Creek (tributary to the old Coosa River channel below Weiss Dam), Big Canoe Creek in the H. Neely Henry Lake area, Kelly Creek (2 miles below Logan Martin Dam) and Yellowleaf Creek (near Wilsonville, AL) in Lay Lake area, and Hatchet Creek in the Mitchell Lake area, just upstream of the Mitchell Dam. Other tributaries where the model limit extends upstream into the narrower portion of the creek were also evaluated for potential impacts.

Modeled 5-yr flood annual exceedance elevations (more frequent event). For the old Coosa River channel below Weiss Dam (also known as the Weiss bypass), the 5-yr model predicts an increase in flood elevation (from about 0.04 ft to 0.10 ft higher) under the proposed action. At the confluence with Terrapin Creek, the flood elevation of the old river channel is predicted to be about 0.06 ft higher. For the Terrapin Creek tributary, the model predicts a slight (about 0.06 ft) increase in depth for the extent of the model (approximately 5 miles total). In other tributaries to the old Coosa River channel, the model shows similar slight increases in flood elevations (up to 0.10 ft higher) under the proposed action.

The 5-yr model shows essentially no difference in flood elevations between the proposed action and the NAA for four primary tributaries (Bridge, Shoal, Beaver, and Big Canoe creeks) to H. Neely Henry Lake, just upstream of the dam. The model indicates no change to a 0.00003-ft difference in flood elevations for these tributaries. There is no difference in flood elevations noted for Big Canoe Creek from the beginning of the critical habitat unit, upstream to the extent of the model (approximately 4.3 miles). The model shows no effective difference in flood elevations for the Coosa River at the confluence with Big Canoe Creek as well. For other tributaries to the Coosa River between Weiss Dam and H. Neely Henry Dam, the modeled flood elevation differences range from no effective difference to a slight 0.10-ft increase under the proposed action.

Downstream of H. Neely Henry Dam, the 5-yr model shows the flood elevation would be slightly higher (about 0.19 ft) along Ohatchee Creek under the proposed action; this difference in elevation from the NAA is noted from the mouth of the creek to about 4 miles upstream of the Highway 144 Bridge. The model indicates a 0.94-ft increase in flood elevation in Choccolocco Creek; however, the extent of the model for the creek is restricted to about 1 mile within the lacustrine area of the tributary. The Coosa River flood elevations at the confluence with each tributary result in the same respective increase in depth. For other tributaries within the Logan Martin Lake area, the modeled elevation differences range from 0.36 ft to 1.01 ft higher under the proposed action compared to the NAA.

Downstream of Logan Martin Dam, the 5-yr model predicts a 1.85-ft decrease in the flood elevation for Kelly Creek under the proposed action; this difference from the NAA was consistent upstream to the model extent (approximately 9.3 miles). Within Yellowleaf Creek, near Wilsonville, AL, the model shows a 1.03-ft decrease in flood elevation at the mouth of the creek; this level changes only slightly (to a 1.02-ft decrease) upstream to the extent of the model limit (about 8 miles total). The Coosa River flood elevations at the confluence with each tributary results in the same respective decrease in depth. For other tributaries within the Lay Lake area, the modeled flood event elevation differences show similar decreases in elevation between the proposed action and NAA.

Downstream of Lay Dam, the 5-yr model shows a 0.25-ft increase in flood elevation for Yellow Leaf Creek from the mouth of the creek, upstream to the extent of the model limit (approximately 1.5 miles). For Hatchet Creek, the model shows a 0.65-ft increase in flood elevation from its confluence with the Coosa River, upstream to the extent of the model limit (approximately 8.7 miles). The Coosa River flood elevation at the confluence with Yellow Leaf Creek shows a 0.26-ft increase under the proposed action and shows the same increase in depth at the Hatchet Creek confluence. For other tributaries within the Mitchell Lake area, the modeled elevation differences between the proposed action and NAA are similar to those noted for Hatchet Creek.

Downstream of Mitchell Dam, Sofkahatchee Creek (just upstream of Jordan Dam) has modeling that shows results extending upstream of the lacustrine area. The model shows effectively no difference (0.006-ft increase) in the creek's 5-yr elevation under the proposed action from its confluence with the Coosa River, upstream to the extent of the model (3.2 miles). The model shows the same 0.006-ft increase in flood elevation for the Coosa River at the mouth of the confluence.

Modeled 100-yr flood annual exceedance elevations (rare event). The most notable differences in the modeled 100-yr elevations occur below Weiss Dam in the old Coosa River channel and in its primary tributary, Terrapin Creek. The 100-yr model indicates the flood elevation just below Weiss Dam would be about 5.01 ft higher under the proposed action. The model shows a 3.76-ft increase in flood elevation at the confluence with Terrapin Creek under the proposed action, and a 1.55-ft increase in flood elevation at the confluence with the hydropower outlet. For Terrapin Creek, the flood elevation differences predicted by the 100-yr model indicate up to 3.78 ft increase in elevation under the proposed action when compared to the operations of the NAA. In other tributaries to the old Coosa River channel, the 100-yr elevation differences range from approximately 2.0 ft to 3.5 ft higher under the proposed action compared to the NAA.

For tributaries to the Coosa River between Weiss Dam and H. Neely Henry Dam, the model indicates essentially no difference in flood elevations between the proposed action and NAA along the four tributaries previously noted (which includes Big Canoe Creek) near H. Neely Henry Dam. For other tributaries downstream of Weiss Dam, the 100-yr model predicts a range from 0.46 ft decrease to approximately 1.46 ft increase in flood elevations under the proposed action compared to the NAA.

For tributaries to the Coosa River between H. Neely Henry Dam and Logan Martin Dam, the flood elevation differences predicted from the modeled 100-yr elevations indicate about a 1.07-ft decrease in flood elevation along Ohatchee Creek and a 1.68-ft decrease in elevation at the model limit for Choccolocco Creek under the proposed action. For other tributaries downstream of H. Neely Henry Dam, the model predicts a range from 1.15 ft decrease to approximately 1.47 ft decrease in flood elevations under the proposed action compared to the NAA.

For tributaries to the Coosa River between Logan Martin Dam and Lay Dam, the flood elevation differences predicted from the modeled 100-yr elevations indicate about a 0.45-ft increase in elevation along Kelly Creek and up to a 0.19-ft decrease in elevation along Yellowleaf Creek under the proposed action. For other tributaries downstream of Logan Martin Dam, the model predicts a range from 0.45 ft decrease to approximately 0.07 ft increase in elevations under the proposed action compared to the NAA.

For tributaries to the Coosa River below Lay Dam, the flood elevation differences predicted from the modeled 100-yr elevations indicate about a 0.13-ft increase in elevation along Hatchet Creek when compared to the NAA. For other tributaries within Mitchell Lake, the model predicts a range from a 0.37-ft decrease to a 0.16-ft increase in flood elevations under the proposed action compared to the NAA. For Sofkahatchee Creek, a tributary within Jordan Lake area, the model indicates there would be no effective difference in flood elevations (up to 0.005-ft increase) between the proposed action and the NAA.

Duration. The duration of any difference in modeled elevations under the proposed action is also a factor in considering potential sediment induced impacts and effects on federally protected species and/or designated critical habitats in these tributary streams. Modeled stage/flow hydrographs were reviewed to inform impacts to stage, flow, and duration along the Coosa River, which can be found in Attachment 9 of Appendix C of the Draft FR/SEIS. This review showed that while the proposed action would cause some changes to the stage and flow hydrographs along the Coosa River, the magnitude and duration of these changes were unlikely to cause a measurable change in sedimentation rates from the NAA. Based on the information available, there is not expected to be a measurable change in sedimentation induced impacts to Coosa River tributaries as a result of the implementation of the proposed action.

7.8 EFFECTS ON FEDERALLY PROTECTED SPECIES AND DESIGNATED CRITICAL HABITAT

Changes to water control operations under the proposed action could potentially affect any species within the ROI. ***Table 7-8*** provides a summary of which river segments (and associated primary tributaries) in the ROI include the ranges of federally protected species and designated critical habitat. An “x” is marked in the river segments that include the habitat range and critical habitat units for each species. Range information was obtained from the Environmental Conservation Online System website for each species listed (USFWS, 2019a).

For the effects analysis to the federally protected species and designated critical habitat, impacts to lake levels, river flows, and water quality from the proposed action were analyzed (Section 7.5, Section 7.6, and associated figures in **Appendix D**). Additionally, data from 5-yr and 100-yr flood annual exceedance event models, as well as modeled stage/flow hydrographs from multiple annual exceedance events (Section 7.7 and Attachment 9 of Appendix C of the Draft FR/SEIS) were reviewed to inform impacts to stage, flow, and duration along the Coosa River and primary tributaries. As detailed in Section 7.7, there is not expected to be a measurable change in sedimentation induced impacts to Coosa River tributaries as a result of implementing of the proposed action.

For each of the river segments below, the non-aquatic species, such as the mammals and birds, which may be present in the ROI will have some dependency on the water resources in that area. However, those species are unlikely to be measurably affected by the very slight changes in flow, lake level, and water quality conditions in the primary rivers and tributaries that result from the proposed action. While it is conceivable that they could be affected by the proposed action, the likelihood that these species would be adversely affected by the proposed action is negligible. Fish, mussels, aquatic snails, and wetland/aquatic vegetation would have a greater potential to be affected by changes in water quality, stream flow, and lake levels.

Riparian areas and adjacent lands along the rivers and primary tributaries within the ROI are influenced by flows, lake levels, and periodic flooding, all of which could affect the protected flowering plant species that may be present. The proposed action will not result in the permanent conversion of one habitat type into another but will result in changes to the duration of inundation along the margins of lakes and slight seasonal differences in flow of the downstream river segments. Based on the timing, frequency, and magnitude of changes that are expected to occur under the proposed action compared to the baseline conditions (the NAA), the proposed action in each of the river segments, reservoirs, and associated primary tributaries, is not expected to adversely affect protected plant species within the ROI.

For each river segment noted to contain designated critical habitat for protected species, the PCEs are summarized in the following effects analysis discussions; however, full descriptions of the PCEs for each critical habitat unit are provided in ***Table 5-1***.

Etowah River – Canton, GA, downstream to Allatoona Dam. Protected species with ranges noted to be within the Allatoona Lake area and upstream to Canton, GA, include the gray bat, northern long-eared bat, amber darter, Cherokee darter, Etowah darter, large-flowered skullcap, Tennessee yellow-eyed grass, and white fringeless orchid (***Table 7-8***). No critical habitat has been designated for this stretch of the Etowah River, its primary tributaries, or Allatoona Lake (***Figure 5-1***).

Impacts to protected species. The winter drawdown of Allatoona Lake is an important connectivity feature for the amber darter, as a population is known to exist in Shoal Creek, a tributary located along the Etowah River upstream of Allatoona Lake in Cherokee County, GA. As discussed in Section 7.5.2, releases from Allatoona Dam under the proposed action would closely align with those under the NAA at the median and 90 percent exceedance (dry conditions) levels. At the 10 percent exceedance level (wet conditions), the pool levels would be higher than the NAA in December through mid-September; same pool levels would be expected from mid-September to December (Section 7.5.1). The modeling did not show the lake levels would be lower under the proposed action during the winter months compared to under the NAA and connectivity should not be impacted under the proposed action (Section 7.5.1). Given the lake levels and releases at Allatoona Lake under the proposed action, no adverse effect to hydrologic connectivity would be expected.

Per the proposed changes in the summer and winter guide curves, lake levels would be maintained within maximum and minimum pool elevations per the project dam design, and therefore would not be expected to have adverse impact on the flowering plant species that may occur on adjacent lands at Allatoona Lake or along associated tributaries. No listed flowering plant species are noted to have ranges upstream of the lake along the Etowah River or its tributaries (***Table 7-8***).

As described in Section 7.6, the HEC-5Q water quality model results demonstrate the proposed action would be expected to have negligible to minor water quality impacts within Allatoona Lake compared to the NAA. Additionally, Figures D-16 through D-19 show negligible impacts to water quality parameters along the Etowah River from Canton, GA, downstream to Allatoona Lake (**Appendix D**). Under the proposed action, the operations to raise the summer and winter guide curves at Allatoona Lake would not be expected to adversely impact protected fish species that may be present within this stretch of the Etowah River, within Allatoona Lake, or associated tributaries.

Given the negligible to minor changes in water quality, lake levels, and river flows expected to occur, implementing the proposed action may affect, but is not likely to adversely affect the federally protected mammal, fish, and flowering plant species that may occur along this segment of the Etowah River, its tributaries, and/or on adjacent lands.

Impacts to designated critical habitat. No critical habitat has been designated within this area of the ROI (***Figure 5-1***); therefore there would be no effect to designated critical habitat.

Etowah River – from Allatoona Dam to Rome, GA. Protected species with ranges noted to be within this stretch of the Etowah River and/or its tributaries include the gray bat, northern long-eared bat, Cherokee darter, Etowah darter (tributary only), fine-lined pocketbook (tributary only), southern clubshell, southern pigtoe, Alabama leather flower, Georgia rockcress, large-flowered skullcap, Mohr’s Barbara’s buttons, Tennessee yellow-eyed grass, white fringeless orchid, and whorled sunflower (***Table 7-8***). No critical habitat has been designated along this portion of the Etowah River (***Figure 5-1***).

Impacts to federally protected species. As discussed in Section 7.5.2, the flows along this stretch of the Etowah River might be slightly lower than the NAA during periods of relatively low biological productivity (late fall/winter). Little change is shown during the more active months (spring/early summer). As described in Section 7.6, the HEC-5Q water quality model results demonstrate the proposed action would be expected to have negligible to minor water quality impacts along the Etowah River compared with the NAA. Given these negligible to minor changes anticipated along the river under the proposed action, the tributaries along this stretch of the river are unlikely to be adversely impacted as well.

The minor changes in river flows and the negligible to minor impacts to water quality anticipated to occur within this reach of the Etowah River are not expected to have adverse impacts to the protected mammal, flowering plant, or aquatic species. Therefore, the proposed action may affect, but is not likely to adversely affect the federally protected mammal, fish, mussel, and flowering plant species that may occur in this segment of the Etowah River, its tributaries, and/or on adjacent lands.

Impacts to designated critical habitat. No critical habitat has been designated within this area of the ROI (***Figure 5-1***); therefore, there would be no effect to designated critical habitat.

Oostanaula River. As detailed in Section 4.0, the proposed federal actions would not affect the Oostanaula River Basin. The Oostanaula River joins the Etowah River at Rome, GA, about 49 miles downstream of Allatoona Dam; this junction forms the Coosa River. Potential impacts to this river are included in the effects analysis due to the protected species and critical habitat known to occur near or at the confluence/junction with the Etowah River and the potential for the mouth of the confluence to be impacted from changes in river flows and/or water quality. Protected species with ranges noted to be within the Oostanaula River and/or its tributaries include the gray bat, northern long-eared bat, Alabama moccasinshell, Coosa moccasinshell, fine-lined pocketbook, southern clubshell, southern pigtoe, triangular kidneyshell, interrupted rocksnail, Alabama leather flower, Georgia rockcress, large-flowered skullcap, Mohr's Barbara's buttons, Tennessee yellow-eyed grass, and whorled sunflower (***Table 7-8***). Critical habitat has been designated for the Georgia rockcress (Unit 16), interrupted rocksnail (Unit IR 2), Alabama moccasinshell, Coosa moccasinshell, fine-lined pocketbook, southern clubshell, southern pigtoe, and triangular kidneyshell (Unit 25) within the Oostanaula River (***Figure 5-1***).

Impact to protected species. As detailed in Section 7.5.2, based on a review of model outputs over the modeled period of record, the proposed action would not be expected to cause river flow conditions near Rome, GA, to deviate appreciably from the NAA. The impacts to water quality as a result of operations at Allatoona Dam under the proposed action would be negligible to minor along the Etowah and Coosa rivers near Rome, GA, compared to the NAA (Section 7.6).

Given the negligible to minor impacts to flows and water quality along the Etowah and Coosa rivers near Rome, GA, the river flows and water quality within the Oostanaula River from operations at Allatoona Dam under the proposed action would not likely be impacted appreciably. As noted in Section 7.7, the Oostanaula and Etowah Junction is not considered a confluence where one stream has a much higher discharge than the other, and as such, backwater effects and reverse flow to the Oostanaula River are not expected. The protected flowering plant, mammal, and aquatic species that may occur within or along the Oostanaula River are not likely to be adversely impacted by proposed action at Allatoona Lake. Therefore, the proposed action may affect, but is not likely to adversely affect the federally protected mammal, mussel, snail, and flowering plant species that may occur in the Oostanaula River, its tributaries, and/or on adjacent lands.

Impacts to designated critical habitat (Unit 16, Unit IR 2, and Unit 25). The critical habitat unit for the Georgia rockcress (Unit 16) is located on 43 acres of privately-owned Whitmore Bluff along the Oostanaula River, approximately 4 miles upstream of Rome, GA. The PCEs for Unit 16 are summarized as follows: 1) Large river bluffs with steep and/or shallow soils with limited accumulation of leaf litter; 2) well-drained soils; 3) a mature, mixed-level canopy; and 4) intact habitat that is fully functional and buffered by surrounding habitat to impede the invasion of competitors. Given the river flows and water quality of the Oostanaula River are not anticipated to be impacted by the proposed action, no adverse impacts to the bluffs, soils, tree canopy, or habitat for the Georgia rockcress within the critical habitat unit are expected. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit 16.

The critical habitat unit for the interrupted rocksnail (Unit IR 2) extends from Hwy 1 Loop in Rome, GA, upstream to the Oostanaula River confluence with the Conasauga River and Coosawattee River (approximately 48 miles). The PCEs for Unit IR 2 are summarized as follows: 1) Geomorphically stable stream/river channels and banks; 2) a hydrologic flow regime necessary to maintain benthic habitats where the species is found; 3) water quality and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; and 4) sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae. Given the river flows and water quality of the Oostanaula River are not anticipated to be impacted by the proposed action, no adverse impacts to the geomorphology, flow regime, water quality, or substrate habitat requirements for the interrupted rocksnail along the 48-mile critical habitat unit are expected. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit IR 2.

The critical habitat unit description for the aforementioned mussels, as well as for the ovate clubshell, southern acornshell, and upland combshell (Unit 25) contains reaches of the Oostanaula River, Coosawattee River, Conasauga River, and Holly Creek (***Table 5-1; Figure 5-1***). The critical habitat included in this analysis consists of the Oostanaula River, extending from the confluence with the Etowah/Coosa River confluence at Rome, GA, upstream to the confluence with the Conasauga River and Coosawattee River (48 miles). The physical effects of the proposed action are not expected to extend to the other listed river and creek segments associated with this critical habitat unit. The PCEs for Unit 25 are summarized as follows: 1) Geomorphically stable stream/river channels and banks; 2) a flow regime necessary for normal behavior, growth, and survival of all life stages of mussels and their fish hosts; 3) water quality and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 4) sand, gravel, and/or cobble substrates with low to moderate amounts of fine sediment, low amounts of attached filamentous algae; 5) fish hosts with adequate living, foraging, and spawning areas; and 6) few or no competitive or predaceous nonnative species present. Given the river flows and water quality of the Oostanaula River are not anticipated to be impacted by the proposed action, no adverse impacts to the geomorphology, flow regime, water quality, substrate, fish hosts required for the protected mussel species along the 48-mile critical habitat unit are expected. The proposed action will not likely affect the presence of competitive or predaceous nonnative species along the Oostanaula River. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit 25.

Coosa River – from Rome, GA, to Weiss Dam. Protected species with ranges noted to be within this stretch of the Coosa River and/or its tributaries include the gray bat, Indiana bat, northern long-eared bat, blue shiner, fine-lined pocketbook, ovate clubshell, southern clubshell, southern pigtoe, upland combshell, Alabama leather flower, Georgia rockcress, green pitcher-plant, harperella, large-flowered skullcap, Mohr's Barbara's buttons, Tennessee yellow-eyed grass, and whorled sunflower (***Table 7-8***). Critical habitat has been designated for the Georgia rockcress (Unit 15) along the Coosa River near Rome, GA and for the whorled sunflower on private lands near Mud Creek in upper Weiss Lake (Unit 1) (***Figure 5-1***).

Impacts to protected species. As discussed in Section 7.5.2, any detectible changes from flow conditions under the NAA would likely be related to adjustments in the number of units generating and the number of hours of generation in order to maintain the pool at Allatoona Lake at a slightly higher level during the year under proposed action. Median flows, and flows at the 90 percent exceedance level (dry conditions), in the Coosa River throughout the year would closely align with those for the NAA and show no appreciable differences, except for some limited occurrences in late November through February when flows under proposed action would be slightly lower than the NAA under both exceedance levels. Additionally, as noted in Section 7.5.2, the proposed reallocation of storage at Allatoona Lake would not be expected to worsen flow conditions in the Coosa River under extreme drought events. Based on a review of model outputs over the modeled period of record, the proposed action would not be expected to deviate appreciably from flow conditions under the NAA in the Coosa River from Rome, GA, downstream to Weiss Lake.

As described in Section 7.5.1, over the period of hydrologic record, median and 90 percent exceedance (dry conditions) pool levels in Weiss Lake would range from a few inches up to about 2 to 3 ft higher than the NAA from September through February and would be the same level as the NAA from March through August. Under the proposed action, the Weiss Lake pool level would likely drop below the current winter pool level of 558 ft in 3 years over the 73-year period of record analyzed compared to 24 years for the NAA. The Weiss Lake surface area at the proposed winter guide curve level would be 5,090 acres more under the proposed action (24,693 acres compared to 19,603 acres at the current winter guide curve level under the NAA).

The HEC-5Q water quality model results demonstrate the proposed action would be expected to have negligible to minor water quality impacts along the Coosa River compared with the NAA (Section 7.6). Under the proposed action, only small deviations in temperature from the NAA are expected to occur in Weiss Lake, none of which are greater than 1.5 °F. The model results show a minor decrease in DO from the NAA at Weiss Lake at the 95 percent occurrence; however, this change is not expected to have a significant impact on water quality. A peak increase in TN concentration of less than 0.01 mg/L (10 µg/L) is modeled at 95 percent occurrence near Weiss Lake, but no other significant changes can be discerned. For the Coosa River, the proposed action would have no discernible incremental effect on chlorophyll *a* concentration compared to the NAA; however, it is noted that at the 95% occurrence, the chlorophyll *a* concentrations exceed state standards in all reservoirs under both the proposed action and the NAA.

The minor changes in river flow and the negligible to minor impacts to water quality along the Coosa River mainstem in this reach of the river from the proposed action are not likely to adversely impact the flows and water quality in the tributaries to this stretch of river; however, there will be higher pool levels and increase in lake surface area under the prosed action. The protected mammal, flowering plant, and aquatic species that may occur in this stretch of the Coosa River, its tributaries, and/or on adjacent lands are unlikely to be adversely impacted by the operations of the proposed action. Therefore, the proposed action may affect, but is not likely to adversely affect the federally protected mammal, fish, mussel, and flowering plant species within this area of the ROI.

Impacts to designated critical habitat (Unit 15 and Unit 1). The critical habitat unit for the Georgia rockress (Unit 15) is located on 92 acres of privately-owned Blacks Bluff Preserve along the Coosa River, approximately 4 miles downstream of Rome, GA. The PCEs for Unit 15 are summarized as follows: 1) Large river bluffs with steep and/or shallow soils with limited accumulation of leaf litter; 2) well-drained soils; 3) a mature, mixed-level canopy; and 4) intact habitat that is fully functional and buffered by surrounding habitat to impede the invasion of competitors. Given the negligible to minor impacts to river flows and water quality of the Coosa River near Rome, GA, anticipated from implementation of the proposed action, no adverse impacts to the bluffs, soils, tree canopy, or habitat for the Georgia rockcress within the critical habitat unit are expected. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit 15.

The critical habitat unit for the whorled sunflower (Unit 1) is located on privately-owned lands (520.4 acres) near Mud Creek in upper Weiss Lake. The PCEs for Unit 1 are summarized as follows: 1) Silt loam, silty clay loam, or fine sandy loam soils on land forms including broad uplands, depressions, stream terraces, and floodplains within the headwaters of the Coosa River in AL and GA; 2) sites in which forest canopy is absent, or where woody vegetation is present at sufficiently low densities to provide full or partial sunlight for most of the day; and 3) occupied sites in which a sufficient number of compatible mates are present for outcrossing and production of viable achenes to occur. The critical habitat unit extends into the margin of one small embayment of Weiss Lake. This embayment is expected to be slightly deeper in winter months under the proposed action, with an average 2-foot increase in the median December pool elevation for Weiss Lake. Elevation model maps were reviewed for this area and the proposed action is not expected to adversely affect the soil, forest canopy or woody vegetation densities, or compatible mates required for the critical habitat unit. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit 1.

Old Coosa River Channel (Weiss bypass). Discharges from Weiss Dam are made through a powerhouse and a separate spillway structure. The portion of the Coosa River from the spillway structure to the powerhouse is known as the bypass portion of the Coosa River, or the old Coosa River channel. The spillway structure is used to pass flood waters exceeding the discharge capacity of the powerhouse. Protected species with ranges noted to be within the old Coosa River channel and/or its tributaries, include the gray bat, Indiana bat, northern long-eared bat, Coosa moccasinshell, fine-lined pocketbook, Georgia pigtoe, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, upland combshell, interrupted rocksnail (old Coosa River channel only), Alabama leather flower, green pitcher-plant, harperella (old Coosa River channel only), and Mohr's Barbara's buttons (***Table 7-8***). Critical habitat has been designated for the interrupted rocksnail (Unit IR 1) within the old Coosa River channel and for the mussels listed within the old Coosa River channel and within Terrapin Creek (Unit GP 2 and Unit 18) (***Figure 5-1***).

Impacts to protected species. The proposed modifications to flood operations at Weiss Dam and Lake would result in minor changes in quantity and timing of releases from the dam. The releases are within the range that have occurred over time at the project under the NAA. To gain a better understanding of impacts of proposed flood operations, 5-yr (more frequent scenario) and 100-yr models were used quantify any differences in flood elevations in the old Coosa River channel and Terrapin Creek (Section 7.7). The 5-yr model predicts negligible to slight differences in flood elevations (ranging from 0.04 ft to 0.10 ft increase) within the old river channel and up to 0.06 ft higher flood elevations along Terrapin Creek under the proposed modified flood operations at Weiss Dam. This negligible increase would extend from the mouth of the creek's confluence with the old river channel, upstream to the model extent (about 1.5 miles upstream from Cherokee County Road 441 cross-section). For other tributaries to the old Coosa River channel, the minor modeled elevation differences are similar (up to 0.10 ft higher) to those noted for the old Coosa River channel.

The flood elevation differences anticipated to occur under the proposed action during the 100-yr model are higher than those during the 5-yr model; however, the 100-yr models a rare storm event. The 100-yr model predicts elevation differences of up to a 5.01-ft increase in the old Coosa River channel, just below the Weiss Dam under the proposed action compared to the NAA. For the rest of the river channel, the 100-yr elevation differences range from 1.55 ft to 3.76 ft higher under the proposed action. For Terrapin Creek, the elevation difference predicted by the 100-yr model indicates up to 3.78 ft increase in elevation under the proposed action compared to the NAA. In other tributaries to the old Coosa River channel, the modeled elevations range from approximately 2.0 ft to 3.5 ft higher under the proposed action compared to the NAA. As described in Section 7.7, given the review of the duration hydrographs along the Coosa River, the differences in stage and flow along the Coosa River under the proposed action are not expected to cause a measurable change in sedimentation rates or sedimentation induced impacts to the tributaries compared to the impacts that would occur under the NAA.

As described in Section 7.6, the HEC-5Q water quality model results demonstrate the proposed action would be expected to have minor impacts to water quality in the Coosa River below Weiss Dam, all of which were determined to not likely result in a significant difference from the NAA.

The minor effects to water quality and modeled elevation differences anticipated to occur below Weiss Dam are not expected to adversely impact the protected mammal, flowering plant, or aquatic species that may occur within the old Coosa River channel, its tributaries, and/or on adjacent lands. Therefore, the proposed action may affect, but is not likely to adversely affect the federally protected mammal, mussel, snail, and flowering plant species within this area of the ROI.

Impacts to designated critical habitat (Unit IR 1, Unit GP 2, and Unit 18). The critical habitat unit for the interrupted rocksnail (Unit IR 1) extends from below the Weiss spillway to approximately 1 mile below the confluence with Terrapin Creek (7 miles). The PCEs for Unit IR 1 are summarized as follows: 1) Geomorphically stable stream/river channels and banks; 2) a hydrologic flow regime necessary to maintain benthic habitats where the species is found; 3) water quality and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages; and 4) sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae. The flood elevation differences within the 7-mile critical habitat unit are anticipated to be up to 0.07 ft higher during the 5-yr model (more frequent) and range from 3.88 ft to 5.01 ft higher during the rare 100-yr model under the proposed action. As described in Section 7.7, the magnitude and duration of the changes in stage and flows along the Coosa River are unlikely to cause a measureable change in sedimentation rates compared to those under the NAA for the occurrence frequencies. With this and the minor changes in water quality anticipated under the proposed action, no adverse impacts to the flow regime and water quality requirements of the 7-mile critical habitat unit are expected between the proposed action and the NAA. Additionally, no adverse impacts to the geomorphology and substrate requirements of the critical habit unit are expected. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit IR 1.

Critical habitat Unit GP 2 has been designated in the old Coosa River channel, from below the Weiss spillway to 1 mile downstream of the confluence with Terrapin Creek (7 miles) and in Terrapin Creek, from its confluence with the old Coosa River channel, upstream to Alabama Highway 9 (15 miles) for the Georgia pigtoe. The PCEs for Unit GP 2 are summarized as follows: 1) Geomorphically stable stream and river channels and banks; 2) a hydrologic flow regime necessary to maintain benthic habitats where the species is found; 3) water quality and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 4) sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae; and 5) the presence of fish hosts, which are currently unknown. While the limit of the models only extends for 5 miles within the 15 miles of designated critical habitat in Terrapin Creek, the elevation differences from the 5-yr model show an increase of 0.06 ft along the 5 miles under the proposed action; the 100-yr model predicts an increase of 3.78 ft along the 5 miles. With the flood elevation differences noted for the old Coosa River channel (same 7-mile stretch as Unit IR 1) and Terrapin Creek and given that no measureable change in sedimentation induced impacts are expected to occur to the tributaries of the Coosa River under the proposed action compared to those under the NAA for the occurrence frequencies, no adverse impacts to the flow regime, water quality, or fish host presence requirements for critical habitat in the old Coosa River or extent of designated critical habitat within Terrapin Creek are expected. Additionally, no adverse impacts to the geomorphology and substrate requirements of the critical habit unit are expected between the proposed action and the NAA. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit GP 2.

The critical habitat unit for the Coosa moccasinshell, fine-lined pocketbook, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, and upland combshell (Unit 18) is designated in the old Coosa River channel from below the Weiss spillway to the power line crossing near Maple Grove, AL (11 miles) and in Terrapin Creek, extending 33 miles upstream from its confluence with the old Coosa River channel. The PCEs for Unit 18 are summarized as follows: 1) Geomorphically stable stream and river channels and banks; 2) a flow regime necessary for normal behavior, growth, and survival of all life stages of mussels and their fish hosts in the river environment; 3) water quality and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 4) sand, gravel, and/or cobble substrates with low to moderate amounts of fine sediment, low amounts of attached filamentous algae, and other physical and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 5) fish hosts with adequate living, foraging, and spawning areas for them; and 6) few or no competitive or predaceous nonnative species present. The modeled elevation differences in the 11-mile critical habitat unit within the old Coosa River channel are anticipated to be up to 0.09 ft higher during the 5-yr model and range from 3.13 ft to 5.01 ft higher during the 100-yr model under the proposed action. For Terrapin Creek, the model results are the same as discussed for Unit GP 2 for both occurrence frequencies. No adverse impacts to the flow regime, water quality, or fish host presence requirements for critical habitat in the old Coosa River or extent of designated critical habitat within Terrapin Creek are expected under the proposed action. Additionally, no adverse impacts to the geomorphology and substrate requirements of the critical habit unit are expected. The proposed action will not likely affect the presence of competitive or predaceous nonnative species along the old Coosa River or Terrapin Creek. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit 18.

Coosa River – H. Neely Henry Lake. Protected species with ranges noted to be within the Coosa River between Weiss Dam and H. Neely Henry Dam (H. Neely Henry Lake) and/or its tributaries include the gray bat, Indiana bat, northern long-eared bat, Coosa moccasinshell, fine-lined pocketbook, Georgia pigtoe, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, upland combshell, Alabama leather flower, green pitcher-plant, and Mohr's Barbara's buttons (***Table 7-8***). Critical habitat Unit 24 has been designated within Big Canoe Creek, a tributary the Coosa River within the lake area, for eight of the mussels listed (***Figure 5-1***).

Impacts to protected species. No changes to operations are proposed at H. Neely Henry Dam; however, changes in flood operations upstream at Weiss Dam under the proposed action may affect pool levels in H. Neely Henry Lake. Discharges from Weiss Dam under the proposed modified flood operations would have negligible effects on H. Neely Henry Lake compared to the NAA. As discussed in Section 7.5, over the period of hydrologic record, median pool levels in H. Neely Henry Lake would be about the same as the NAA from mid-November through August and slightly lower (up to about 0.2 ft) than the NAA from September through mid-November. At the 90 percent exceedance level (dry conditions), the plotted values for the proposed action and the NAA are essentially the same. As described in Section 7.6, the HEC-5Q water quality model results demonstrate the proposed action would be expected to have minor water quality impacts compared to the NAA in the Coosa River between Weiss Dam and H. Neely Henry Dam.

As discussed in Section 7.7, the results of the modeled 5-yr elevations indicates there is effectively no change in flood elevations between the proposed action and NAA for four tributaries (including Big Canoe Creek), just upstream of the dam. For other tributaries to the Coosa River within the lake area, the flood elevation differences range from no effective change to a slight (up to about 0.10 ft) increase under the proposed action. As seen with the 5-yr model, the results of the 100-yr model indicate there would be effectively no change in flood elevations for the four tributaries (including Big Canoe Creek) under the proposed action as well. However, for the other tributaries below Weiss Dam, elevation differences range from 0.46 ft decrease to approximately 1.46 ft increase in the 100-yr model under the proposed action compared to the NAA. While there would be some changes to the stage and flow hydrographs along the Coosa River under the proposed action, the magnitude and duration of the changes are not expected to cause a measureable change in sedimentation induced impacts to its tributaries compared to the NAA (Section 7.7).

The minor effects to the pool levels, modeled elevations, and water quality anticipated to occur between Weiss Dam and H. Neely Henry Dam are not expected to adversely impact the protected mammal, flowering plant, or mussel species that may occur within this reach of the Coosa River, its tributaries, and/or on adjacent lands. Therefore, the proposed action may affect, but is not likely to adversely affect the federally protected mammal, mussel, and flowering plant species within this area of the ROI.

Impacts to designated critical habitat (Unit 24). Critical habitat for the Coosa moccasinshell, fine-lined pocketbook, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, and upland combshell is designated for the Big Canoe Creek (a tributary to lower half of the lake) from its confluence with the Little Canoe Creek, upstream to the confluence with Fall Branch (18 miles). The Big Canoe Creek confluence with the Little Canoe Creek is approximately 6.7 miles upstream from Big Canoe Creek's confluence with the Coosa River. The PCEs for Unit 24 are summarized as follows: 1) Geomorphically stable stream and river channels and banks; 2) a flow regime necessary for normal behavior, growth, and survival of all life stages of mussels and their fish hosts in the river environment; 3) water quality and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 4) sand, gravel, and/or cobble substrates with low to moderate amounts of fine sediment, low amounts of attached filamentous algae, and other physical and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 5) fish hosts with adequate living, foraging, and spawning areas for them; and 6) few or no competitive or predaceous nonnative species present.

As previously noted, minor changes in water quality and effectively no flood elevation differences from the 5-yr and 100-yr models within Big Canoe Creek are anticipated from the proposed action. While the limit of the models only extends for approximately 4 miles within the 18 miles designated as critical habitat in Big Canoe Creek, the results in flood elevation differences under the proposed action are consistent for the 4 miles of critical habitat for both occurrence frequencies. No adverse impacts to the flow regime, water quality, or fish host presence requirements for Big Canoe Creek or extent of designated critical habitat unit are expected. Additionally, no adverse impacts to the geomorphology and substrate requirements of the critical habit unit would be expected to occur. The proposed action will not likely affect the presence of competitive or predaceous nonnative species along Big Canoe Creek. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit 24.

Coosa River – Logan Martin Lake. Protected species with ranges noted to be within the Coosa River between H. Neely Henry Lake Dam and Logan Martin Dam (Logan Martin Lake) and/or its tributaries include the gray bat, Indiana bat, northern long-eared bat, blue shiner, fine-lined pocketbook, ovate clubshell, southern clubshell, southern pigtoe, upland combshell, painted rocksnail, tulotoma snail, Mohr's Barbara's buttons, Tennessee yellow-eyed grass, and white fringeless orchid (***Table 7-8***). No critical habitat has been designated for this stretch of the Coosa River or its primary tributaries (***Figure 5-1***).

Impacts to protected species. Under the proposed action, flood operations would be revised as described in Section 3.2.2. As discussed in Section 7.5, pool levels at Logan Martin Lake would be expected to be higher from October through April each year based on the guide curve change under the proposed action compared to the NAA. Over the period of hydrologic record, median pool levels in Logan Martin Lake under proposed action would range from a few inches up to about 2 ft higher than the NAA from mid-October through early May, the same level as the NAA from the early May through August, and up to 0.5 ft lower than the NAA in September through mid-October. At the 90 percent exceedance level, the pool levels would range from a few inches higher up to about 2 ft higher than the NAA from October through about mid-May and would be essentially the same level as the NAA from mid-May through September. The pool level would likely drop below the current winter pool level of 460 ft in 5 years over the 73-year period of record compared to 38 years for the NAA. The Logan Martin Lake surface area at the proposed winter guide curve level would be about 1,263 acres more under the proposed action (13,157 acres compared to 11,894 acres at the current winter guide curve level under the NAA).

As described in Section 7.7, under the proposed operations at Logan Martin Dam Lake, the 5-yr model predicts the elevations would be up to 0.19 ft higher along the Ohatchee Creek tributary from the mouth of the creek's confluence with the Coosa River, upstream to the extent of the model, which is to about 4 miles above Highway 144 Bridge. For another tributary of the Coosa River within the Logan Martin Lake area, the model indicates an increase of 0.94 ft in flood elevation at the Choccolocco Creek confluence. The extent of the model is restricted to about 1 mile within the lacustrine area of the tributary. For other tributaries to the Coosa River within the lake area, the modeled 5-yr elevation differences range from 0.36 ft to 1.01 ft increase between the proposed action and the NAA. The flood elevation differences predicted from the 100-yr model indicate about a 1.07-ft decrease in flood elevation along Ohatchee Creek and a 1.68-ft decrease in elevation at the model limit for Choccolocco Creek under the proposed action when compared to the operations under the NAA. For other tributaries with the lake area, the 100-yr model predicts a range from 1.15 ft decrease to 1.47 ft decrease in elevations under the proposed action compared to the NAA. As discussed in Section 7.7, there would be some changes to the stage and flow hydrographs along the Coosa River under the proposed action; however, the magnitude and duration of the changes are not expected to cause a measureable change in sedimentation induced impacts to its tributaries compared to the NAA.

As described in Section 7.6, the HEC-5Q water quality model results demonstrate the proposed action would be expected to have minor water quality impacts compared to the NAA along the Coosa River below H. Neely Henry Lake to Logan Martin Dam.

Given minor effects to the pool levels, modeled elevations, and water quality anticipated to occur between H. Neely Henry Dam and Logan Martin Dam under the proposed action, the protected mammal, flowering plant, and aquatic species that may occur in this segment of the Coosa River, its tributaries, and/or on adjacent lands are not expected to be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the federally protected mammal, fish, mussel, snail, and flowering plant species within this area of the ROI.

Impacts to designated critical habitat. No critical habitat has been designated within this area of the ROI (***Figure 5-1***); therefore there would be no effect to designated critical habitat.

Coosa River – Lay Lake. Protected species with ranges noted to be within the Coosa River between Logan Martin Dam and Lay Dam (Lay Lake) and/or its tributaries include the gray bat, Indiana bat, northern long-eared bat, red-cockaded woodpecker, Coosa moccasinshell, fine-lined pocketbook, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, upland combshell, painted rocksnail, rough hornsnail, tulotoma snail, Tennessee yellow-eyed grass, and white fringeless orchid (***Table 7-8***). Critical habitat in Kelly Creek (Unit 21), a tributary to the Coosa River 2 miles below Logan Martin Dam, has been designated for the eight mussels listed. Critical habitat in Yellowleaf Creek, a tributary to the Coosa River near Wilsonville, AL, has been designated for four of the mussels listed (Unit 23) and for the rough hornsnail (Unit RH 2) (***Figure 5-1***).

Impacts to protected species. No changes to project operations are proposed at Lay Dam; however, the proposed action would likely result in minor changes to flow conditions in the Coosa River downstream of Logan Martin Dam, as well as slight and short-term increases in pool levels during flood events (when modified flood operations at Logan Martin Dam would be triggered). As discussed in Section 7.5.2, median flows in the Coosa River throughout the year under the proposed action would closely align with those for the NAA but would be slightly lower than the NAA in November and December as releases from Logan Martin Dam would decrease to maintain a higher winter pool level in the lake. At the 90 percent exceedance level (dry conditions), flows under the proposed action would be notably lower than the NAA from September through early January (ranging from 200 to 2,000 cfs lower) as releases would be reduced to maintain a higher winter pool level, but they would be higher from early January through February and in April due to increased releases associated with the modified flood operations. Overall, the proposed action would likely have a minor effect on flow conditions in the Coosa River below Logan Martin Dam between September and March each year and little to no effect on flow conditions between April and August each year.

Results of the 5-yr elevation differences indicate Kelly Creek, located about 2 miles below Logan Martin Dam, would have a 1.85-ft decrease in the flood elevation under the proposed action compared to the NAA; this was consistent upstream to the model extent at approximately 6.7 miles downstream of the Shoal Creek confluence. Within Yellowleaf Creek, near Wilsonville, AL, the elevation at the confluence shows a 1.03-ft decrease; this difference changes slightly (to a 1.02-ft decrease) upstream for about 9.3 miles, which is about 1.5 miles downstream of the Carter Branch confluence. The Coosa River channel flood elevations at the confluence with each tributary resulted in the same respective increase in elevation. For other tributaries to the Coosa River within the Lay Lake area, the 5-yr modeled elevation differences between the proposed action and NAA are similar to

Yellowleaf and Kelly creeks, ranging from 0.94 ft to 1.75 ft decrease under the proposed action. The elevation differences predicted from the 100-yr model indicate about a 0.45-ft increase in elevation along Kelly Creek and up to a 0.19-ft decrease in elevation along Yellowleaf Creek under the proposed action when compared to the operations of the NAA. For other tributaries within the lake area, the 100-yr model predicts a range from 0.45 ft decrease to 0.07 ft increase in elevations under the proposed action compared to the NAA. As discussed in Section 7.7, while there would be some changes to the stage and flow hydrographs along the Coosa River under the proposed action, the magnitude and duration of the changes are not expected to cause a measureable change in sedimentation induced impacts to its tributaries compared to the NAA.

As described in Section 7.6, the HEC-5Q water quality model results demonstrate the proposed action would be expected to have negligible to minor water quality impacts compared to the NAA in the Coosa River below Logan Martin Dam to Lay Dam.

Given the minor effects to the pool levels, modeled elevations, and water quality anticipated to occur within the Lay Lake area under the proposed action, the protected mammal, bird, flowering plant, and aquatic species that may occur in this stretch of the Coosa River, its tributaries, and/or on adjacent lands are not expected to be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the federally protected mammal, bird, mussel, snail, and flowering plant species within this area of the ROI.

Impacts to designated critical habitat (Unit 21, Unit 23, and Unit RH 2). Critical habitat for the Coosa moccasinshell, fine-lined pocketbook, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, and upland combshell is designated for the Kelly Creek (a tributary to upper end of Lay Lake) from its confluence with the Coosa River about 2 miles below Logan Martin Dam, upstream to the confluence with Shoal Creek (16 miles). The PCEs for Unit 21 are summarized as follows: 1) Geomorphically stable stream and river channels and banks; 2) a flow regime necessary for normal behavior, growth, and survival of all life stages of mussels and their fish hosts in the river environment; 3) water quality other chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 4) sand, gravel, and/or cobble substrates with low to moderate amounts of fine sediment, low amounts of attached filamentous algae, and other physical and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 5) fish hosts with adequate living, foraging, and spawning areas for them; and 6) few or no competitive or predaceous nonnative species present.

As previously noted, minor changes in water quality and minor differences in flood elevations from both modeled storm frequencies within approximately 9 miles of Kelly Creek are anticipated under the proposed action. While the limit of the modeled flood event only extends for approximately 9 miles within the 16 miles designated as critical habitat in Kelly Creek, the results in elevation differences for both the 5-yr and 100-yr models under the proposed action are consistent for those 9 miles (a decrease of 1.85 ft and an increase of 0.45 ft, respectively). No adverse impacts to the flow regime, water quality, or fish host presence requirements for the extent of designated critical habitat within Kelly Creek are expected between the proposed action and the NAA. Additionally, no adverse impacts to the geomorphology and substrate requirements of the critical habit unit are expected. The proposed action will not likely affect the presence of competitive or predaceous nonnative species along the Kelly Creek. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit 21.

Critical habitat for the Coosa moccasinshell, fine-lined pocketbook, southern pigtoe, and triangular kidneyshell is designated for the Yellowleaf Creek, from Alabama Highway 25 Bridge, upstream to Shelby County Road 49 (20 miles). The PCEs for Unit 23 are summarized as follows: 1) Geomorphically stable stream and river channels and banks; 2) a flow regime necessary for normal behavior, growth, and survival of all life stages of mussels and their fish hosts in the river environment; 3) water quality and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 4) sand, gravel, and/or cobble substrates with low to moderate amounts of fine sediment, low amounts of attached filamentous algae, and other physical and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 5) fish hosts with adequate living, foraging, and spawning areas for them; and 6) few or no competitive or predaceous nonnative species present.

Minor changes in water quality and lower elevations from both modeled frequencies within the designated critical habitat in Yellowleaf Creek are anticipated under the proposed action. While the limit of the model only extends for 6 miles within the 20 miles of designated critical habitat in Yellowleaf Creek, the results in elevation differences for both the 5-yr and 100-yr models under the proposed action show the same difference in elevation for those 6 miles (up to 1.02 ft decrease and 0.19 ft decrease, respectively). No adverse impacts to the flow regime, water quality, or fish host presence requirements for the extent of designated critical habitat within Yellowleaf Creek are expected. Additionally, no adverse impacts to the geomorphology and substrate requirements of the critical habit unit are expected. The proposed action will not likely affect the presence of competitive or predaceous nonnative species along the Yellowleaf Creek. Therefore, the proposed action will may affect, but is not likely to adversely modify or destroy critical habitat Unit 23.

Critical habitat for the rough hornsnail (RH 2) is designated within Yellowleaf Creek, extending upstream from about 1.0 mile downstream of Alabama Highway 25 Bridge to the confluence with Morgan Creek (approximately 4 miles). The PCEs for Unit RH 2 are summarized as follows: 1) Geomorphically stable stream and river channels and banks; 2) a hydrologic flow regime necessary to maintain benthic habitats where the species is found; 3) water quality and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; and 4) sand, gravel, cobble, boulder, bedrock, or mud substrates with low to moderate amounts of fine sediment and attached filamentous algae.

As previously noted, the elevation differences of up to 1.02 ft lower from the 5-yr model and 0.19 ft decrease from the 100-yr model within Yellowleaf Creek start at about 1 mile downstream of the Alabama Highway 25 Bridge, where the critical habitat unit for the rough hornsnail begins. The results in elevation differences under the proposed action show the same elevation decrease consistently for 7 miles upstream from this point for both modeled frequencies, which includes the entire length of the critical habitat unit. Due to the minor elevation differences and water quality changes anticipated under the proposed action, no adverse impacts to the flow regime or water quality requirements for the extent of designated critical habitat for the rough hornsnail in Yellowleaf Creek are expected. Additionally, no adverse impacts to the geomorphology and substrate requirements of the critical habit unit are expected. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit RH 2.

Coosa River – Mitchell Lake. Protected species with ranges noted to be within the Coosa River between Lay Dam and Mitchell Dam (Mitchell Lake) and/or its tributaries include the gray bat, Indiana bat, red-cockaded woodpecker, wood stork, blue shiner, Coosa moccasinshell, fine-lined pocketbook, Georgia pigtoe, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, upland combshell, rough hornsnail, tulotoma snail, and white fringeless orchid (***Table 7-8***). Critical habitat in Hatchet Creek, a tributary to the Coosa River just upstream of Mitchell Dam, is designated for the mussels listed (Unit GP 3 and Unit 19) (***Figure 5-1***).

<u>*Impacts to protected species*</u>. No changes to operations are proposed at Lay Dam or Mitchell Dam, which would impact Mitchell Lake pool elevations. As run-of-river projects, the proposed action would be expected to have residual and negligible incremental effect on lake levels compared to current operations under the NAA, even with the inclusion of the proposed modified flood operations at Logan Martin Dam (Section 7.5.1).

As discussed in Section 7.7, results of the 5-yr model indicate some minor elevation differences in the evaluated tributaries within Mitchell Lake. One of the tributaries, Yellow Leaf Creek, right below Lay Dam, shows a 0.25-ft increase at the confluence with the Coosa River and upstream to the extent of the model (about 1.5 miles) under the proposed action compared to the NAA. Hatchet Creek, just upstream from Mitchell Dam, shows a 0.65-ft increase in elevation from its confluence with the Coosa River, upstream to the extent of the model limit (about 8.7 miles) compared to the NAA. The Coosa River channel elevations at the confluence with each tributary resulted in slightly higher or the same respective increase in depth. For other tributaries within the Mitchel Lake area, the elevation differences have similar changes as seen for Hatchet Creek. The elevation differences predicted from the 100-yr model indicate about a 0.13-ft increase in elevation along Hatchet Creek when compared to the operations of the NAA. For other primary tributaries between Lay Dam and Mitchell Dam, the 100-yr model predicts a range from 0.37 ft decrease (noted for Yellow Leaf Creek) to 0.16 ft increase in elevations under the proposed action compared to the NAA. While there would be some changes to the stage and flow hydrographs along the Coosa River under the proposed action, the magnitude and duration of the changes are not expected to cause a measureable change in sedimentation induced impacts to its tributaries compared to the NAA (Section 7.7).

As described in Section 7.6, the HEC-5Q water quality model results demonstrate the proposed action would be expected to have negligible to minor water quality impacts compared to the NAA in the Coosa River below Lay Dam to Mitchell Dam.

Given the negligible to minor effects to the pool levels, modeled elevations, and water quality anticipated to occur within the Mitchell Lake area, the protected mammal, bird, flowering plant, and aquatic species that may occur within this reach of the Coosa River, its tributaries, and/or on adjacent lands are not expected to be adverse adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the federally protected mammal, bird, fish, mussel, snail, and flowering plant species within this area of the ROI.

Impacts to designated critical habitat (Unit 19 and Unit GP 3). Critical habitat for the Coosa moccasinshell, fine-lined pocketbook, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, and upland combshell (Unit 19) is designated for the Hatchet Creek (a tributary to lower Mitchell Lake) from its confluence with Swamp Creek, upstream to Clay County Road 4 (41 miles). The Hatchet Creek confluence with Swamp Creek is approximately 7.6 miles upstream from Hatchet Creek's confluence with the Coosa River. The PCEs for Unit 19 are summarized as follows: 1) Geomorphically stable stream and river channels and banks; 2) a flow regime necessary for normal behavior, growth, and survival of all life stages of mussels and their fish hosts in the river environment; 3) water quality and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 4) sand, gravel, and/or cobble substrates with low to moderate amounts of fine sediment, low amounts of attached filamentous algae, and other physical and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 5) fish hosts with adequate living, foraging, and spawning areas for them; and 6) few or no competitive or predaceous nonnative species present.

The designated critical habitat for the Georgia pigtoe (Unit GP 3) occurs within the same 41 miles of Hatchet Creek as Unit 19. The PCEs for Unit GP 3 are summarized as follows: 1) Geomorphically stable stream and river channels and banks; 2) a hydrologic flow regime necessary to maintain benthic habitats where the species is found; 3) water quality and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 4) sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae; and 5) the presence of fish hosts, which are currently unknown.

As previously noted, negligible to minor effects in water quality and minor elevation differences predicted from the 5-yr and 100-yr models within Hatchet Creek (0.65 ft increase and 0.13 ft increase, respectively) are anticipated from the proposed action. While the limit of the models only extends for approximately 1.1 miles within the 41 miles of designated critical habitat in Hatchet Creek, the elevation differences under the proposed action are consistent for the 1.1 miles, as modeled by both frequencies. No adverse impacts to the flow regime, water quality, or fish host presence requirements for the extent of designated critical habitat units within Hatchet Creek are expected. Additionally, no adverse impacts to the geomorphology and substrate requirements of the critical habit units would be expected to occur. The proposed action will not likely affect the presence of competitive or predaceous nonnative species along Hatchet Creek (PCE 6 for Unit 19). Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit 19 or Unit GP 3.

Coosa River – Jordan Lake. Protected species with ranges noted to be within the Coosa River between Mitchell Dam and Jordan Dam (Jordan Lake) and/or its tributaries include the wood stork, fine-lined pocketbook, ovate clubshell, southern clubshell, southern pigtoe, upland combshell, tulotoma snail, and Georgia rockcress (***Table 7-8***). No critical habitat has been designated within this reach of the river or its primary tributaries (***Figure 5-1***).

Impacts to protected species. No changes to project operations are proposed at Mitchell Dam or Jordan Dam, which would impact Mitchell Lake pool elevations. As run-of-river projects, the proposed action would be expected to have residual and negligible incremental effect on lake levels compared to current operations under the NAA, even with the inclusion of modified flood operations at Weiss and Logan Martin dams (Section 7.5.1).

Results of the 5-yr model elevations indicate Sofkahatchee Creek, a tributary to the Coosa River just upstream of the dam, did not result in an effective change (0.006 ft increase); this small difference from the NAA was noted from its confluence, upstream about 3.0 miles to the model extent (Section 7.7). The Coosa River channel elevation at the confluence the tributary has the same increase in depth. The 100-yr model indicates there would be no effective change in elevations (up to 0.005-ft increase) along the Sofkahatchee Creek when compared to the NAA as well. While there would be some changes to the stage and flow hydrographs along the Coosa River under the proposed action, the magnitude and duration of the changes are not expected to cause a measureable change in sedimentation induced impacts to its tributaries compared to the NAA (Section 7.7).

As described in Section 7.6, the HEC-5Q water quality model results demonstrate the proposed action would be expected to have negligible to minor water quality impacts compared to the NAA in the Coosa River below Mitchell Dam to Jordan Dam.

Given the negligible changes to the pool levels, modeled elevations, and water quality anticipated to occur within the Jordan Lake area under the proposed action, the protected bird, flowering plant, and aquatic species that may occur within this reach of the Coosa River, its tributaries, and/or on adjacent lands are not expected to be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the federally protected bird, mussel, snail, and flowering plant species that within this area of the ROI.

Impacts to designated critical habitat. No critical habitat has been designated within this area of the ROI (***Figure 5-1***); therefore there would be no effect to designated critical habitat.

Lower Coosa River downstream of Jordan Dam. Protected species with ranges noted to be within the Coosa River on the lower Coosa River, below Jordan Dam and/or its tributaries include the wood stork, Alabama moccasinshell, Coosa moccasinshell, fine-lined pocketbook, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, upland combshell, interrupted rocksnail, rough hornsnail, tulotoma snail, and Georgia rockcress (***Table 7-8***). Critical habitat in the lower Coosa River below Jordan Dam to the confluence with the Tallapoosa River has been designated for the nine mussels listed (Units 26), for two of the snails (Unit IR 3 and Unit RH 1), and for the Georgia rockcress (Unit 12) (***Figure 5-1***).

Impacts to protected species. Jordan Lake and Dam is a run-of-the river project; no changes to operations are proposed at Jordan Dam. As described in Section 7.5.2, the modeled discharges for the Alabama River at the confluence of the Coosa and Tallapoosa rivers represent the sum of the releases over time from Jordan, Bouldin, and Thurlow dams. At this location, median flows throughout the year for proposed action over the modeled period of record would closely align with those for the NAA. However, due to the residual downstream effects of proposed modifications to flood operations at the Weiss and Logan Martin dams, flows at this location would be marginally lower than the NAA in October through December, resulting from water management actions to maintain higher winter pool levels in Weiss and Logan Martin lakes. The 5-yr and 100-yr models did not extend downstream below Jordan Dam; however, given the residual effects of the proposed actions downstream to the Alabama River confluence, adverse impacts to tributaries located in this stretch of the Coosa River are not expected.

As described in Section 7.6, the HEC-5Q water quality model results demonstrate the proposed action would be expected to have negligible to minor water quality impacts compared to the NAA in the Coosa River below to Jordan Dam.

The proposed action would be expected to have residual and negligible incremental effect on downstream flows and water quality compared to current operations under the NAA, even with the inclusion of modified flood operations at Weiss and Logan Martin dams. The anticipated minor effects under the proposed action are not expected to adversely affect the protected bird, flowering plant, or aquatic species that may occur within this stretch of the Coosa River, its tributaries, and/or on adjacent lands. Therefore, the proposed action may affect, but is not likely to adversely affect the federally protected bird, mussel, snail, and flowering plant species within this area of the ROI.

Impacts to designated critical habitat (Unit 12, Unit RH 1, Unit IR 3, and Unit 26). The critical habitat unit for the Georgia rockress (Unit 12) is located on 17 acres of Fort Toulouse State Park along the lower Coosa River. The

PCEs for Unit 12 are summarized as follows: 1) Large river bluffs with steep and/or shallow soils with limited accumulation of leaf litter; 2) well-drained soils; 3) a mature, mixed-level canopy; and 4) intact habitat that is fully functional and buffered by surrounding habitat to impede the invasion of competitors. Given the negligible effects to river flows and water quality of the lower Coosa River anticipated from implementation of the proposed action, no adverse impacts to the bluffs, soils, tree canopy, or habitat for the Georgia rockcress within the critical habitat unit are expected. Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit 12.

The designated critical habitat unit for the rough hornsnail (Unit RH 1) extends along the Coosa River from Jordan Dam downstream to the confluence with the Tallapoosa River (approximately 13 miles). The PCEs for RH 1 are summarized as follows: 1) Geomorphically stable stream/river channels and banks; 2) a hydrologic flow regime necessary to maintain benthic habitats where the species is found; 3) water quality and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; and 4) sand, gravel, cobble, boulder, bedrock, or mud substrates with low to moderate amounts of fine sediment and attached filamentous algae.

Critical habitat Unit IR 3 (for the interrupted rocksnail) and Unit 26 (for the listed mussels) are designated in the same segment of the lower Coosa River; the critical habitat for both units extend from the below Jordan Dam downstream to Alabama State Highway 111 Bridge (8 miles). The PCEs for Unit IR 3 are summarized as follows: 1) Geomorphically stable stream/river channels and banks; 2) a hydrologic flow regime necessary to maintain benthic habitats where the species is found; 3) water quality and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages; and 4) sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae. The PCEs for Unit 26 are summarized as follows: 1) Geomorphically stable stream and river channels and banks; 2) a flow regime necessary for normal behavior, growth, and survival of all life stages of mussels and their fish hosts in the river environment; 3) water quality and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 4) sand, gravel, and/or cobble substrates with low to moderate amounts of fine sediment, low amounts of attached filamentous algae, and other physical and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; 5) fish hosts with adequate living, foraging, and spawning areas for them; and 6) few or no competitive or predaceous nonnative species present .

Given the proposed action and anticipated negligible changes to the river flows and water quality downstream along the Coosa River below Jordan Dam, implementing the proposed action is unlikely to adversely impact the geomorphology, flow regime, water quality, or substrate requirements for Unit IR 3, RH 1, and Unit 26. Additionally, the proposed action will not likely affect the presence of fish hosts for the listed mussel or the presence of competitive or predaceous nonnative species along the lower Coosa River (PCEs 5 and 6 for Unit 26). Therefore, the proposed action may affect, but is not likely to adversely modify or destroy critical habitat Unit IR 3, Unit RH 1, or Unit 26.

Table 7-8. Summary of the Range* of Protected Species within the ROI River Segments and Primary Tributaries with Designated Critical Habitat Units.

Common name	**Etowah River – Canton, GA to Allatoona Lake**	**Allatoona Lake**	**Etowah River – Allatoona Dam to Rome, GA**	**Oostanaula River** – Confluence w/ Etowah R. upstream to Resaca, GA**	**Coosa River – Rome, GA to Weiss Dam**	**Mud Creek** – Weiss Lake**	**Coosa R. – Weiss Dam to H. Neely Henry Dam**	**Coosa River** – Old Channel**	**Terrapin Creek** – Tributary to the Coosa River Old Channel**	**Big Canoe Creek** – Tributary to H. Neely Henry Lake**	**Coosa River – H. Neely Henry Dam to Logan Martin Dam**	**Coosa R. – Logan Martin Dam to Lay Dam**	**Kelly Creek** – Tributary to upper Lay Lake**	**Yellowleaf Creek** – Tributary to Lay Lake**	**Coosa River – Lay Dam to Mitchell Dam**	**Hatchet Creek** – Tributary to Mitchell Lake**	**Coosa River – Mitchell Dam to Jordan Dam**	**Lower Coosa River** – Below Jordan Dam**
Gray Bat	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	-	-	-
Indiana Bat	-	-	-	-	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	-	-
Northern Long-eared Bat	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	-	-	-	-
Red-Cockaded Woodpecker	-	-	-	-	-	-	-	-	-	-	-	*x*	-	-	*x*	*x*	-	-
Wood Stork	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*x*	-	*x*	*x*
Amber Darter	*x*	*x*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blue Shiner	-	-	-	-	*x*	-	-	-	-	-	*x*	-	-	-	-	*x*	-	-
Cherokee Darter	*x*	*x*	*x*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Etowah Darter	*x*	*x*	*x*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alabama Moccasinshell	-	-	-	*x (1)*	-	-	-	-	-	-	-	-	-	-	-	-	-	*x (1)*
Coosa Moccasinshell	-	-	-	*x (1)*	-	-	*x*	*x (1)*	*x (1)*	*x (1)*	-	-	*x (1)*	*x (1)*	-	*x (1)*	-	*x (1)*

Common name	Etowah River – Canton, GA to Allatoona Lake	Allatoona Lake	Etowah River – Allatoona Dam to Rome, GA	Oostanaula River** – Confluence w/ Etowah R. upstream to Resaca, GA	Coosa River – Rome, GA to Weiss Dam	Mud Creek** – Weiss Lake	Coosa R. – Weiss Dam to H. Neely Henry Dam	Coosa River** – Old Channel	Terrapin Creek** – Tributary to the Coosa River Old Channel	Big Canoe Creek** – Tributary to H. Neely Henry Lake	Coosa River – H. Neely Henry Dam to Logan Martin Dam	Coosa R. – Logan Martin Dam to Lay Dam	Kelly Creek** – Tributary to upper Lay Lake	Yellowleaf Creek** – Tributary to Lay Lake	Coosa River – Lay Dam to Mitchell Dam	Hatchet Creek** – Tributary to Mitchell Lake	Coosa River – Mitchell Dam to Jordan Dam	Lower Coosa River** – Below Jordan Dam
Fine-lined Pocketbook	-	-	*x*	*x (1)*	*x*	-	*x*	*x (1)*	*x (1)*	*x (1)*	*x*	*x*	*x (1)*	*x (1)*	*x*	*x (1)*	*x*	*x (1)*
Georgia Pigtoe	-	-	-	-	-	-	*x*	*x (1)*	*x (1)*	*x*	-	-	-	-	-	*x (1)*	-	-
Ovate Clubshell	-	-	-	- *(1)*	*x*	-	*x*	*x (1)*	*x (1)*	*x (1)*	*x*	*x*	*x (1)*	-	*x*	*x (1)*	*x*	*x (1)*
Southern Acornshell	-	-	-	- *(1)*	-	-	-	*x (1)*	*x (1)*	*x (1)*	-	*x*	*x (1)*	-	-	*x (1)*	-	*x (1)*
Southern Clubshell	-	-	*x*	*x (1)*	*x*	*x*	*x*	*x (1)*	*x (1)*	*x (1)*	*x*	*x*	*x (1)*	*x*	*x*	*x (1)*	*x*	*x (1)*
Southern Pigtoe	-	-	*x*	*x (1)*	*x*	-	*x*	*x (1)*	*x (1)*	*x (1)*	*x*	*x*	*x (1)*	*x (1)*	-	*x (1)*	*x*	*x (1)*
Triangular Kidneyshell	-	-	-	*x (1)*	-	-	-	*x (1)*	*x (1)*	*x (1)*	-	*x*	*x (1)*	*x (1)*	-	*x (1)*	-	*x (1)*
Upland Combshell	-	-	-	- *(1)*	*x*	-	*x*	*x (1)*	*x (1)*	*x (1)*	*x*	*x*	*x (1)*	-	*x*	*x (1)*	*x*	*x (1)*
Interrupted (=georgia) Rocksnail	-	-	-	*x (1)*	-	-	-	*x (1)*	-	-	-	-	-	-	-	-	-	*x (1)*
Painted Rocksnail	-	-	-	-	-	-	-	-	-	-	*x*	*x*	-	-	-	-	-	-
Rough Hornsnail	-	-	-	-	-	-	-	-	-	-	-	*x*	-	*x (1)*	*x*	*x*	-	*x (1)*
Tulotoma Snail	-	-	-	-	-	-	-	-	-	-	*x*	*x*	*x*	*x*	-	*x*	*x*	*x*

Common name	Etowah River – Canton, GA to Allatoona Lake	Allatoona Lake	Etowah River – Allatoona Dam to Rome, GA	Oostanaula River** – Confluence w/ Etowah R. upstream to Resaca, GA	Coosa River – Rome, GA to Weiss Dam	Mud Creek** – Weiss Lake	Coosa R. – Weiss Dam to H. Neely Henry Dam	Coosa River** – Old Channel	Terrapin Creek** – Tributary to the Coosa River Old Channel	Big Canoe Creek** – Tributary to H. Neely Henry Lake	Coosa River – H. Neely Henry Dam to Logan Martin Dam	Coosa R. – Logan Martin Dam to Lay Dam	Kelly Creek** – Tributary to upper Lay Lake	Yellowleaf Creek** – Tributary to Lay Lake	Coosa River – Lay Dam to Mitchell Dam	Hatchet Creek** – Tributary to Mitchell Lake	Coosa River – Mitchell Dam to Jordan Dam	Lower Coosa River** – Below Jordan Dam
Alabama Leather Flower	-	-	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	-	-	-	-	-	-	-	-
Georgia Rockcress	-	-	*x*	*x (1)*	*x (1)*	-	-	-	-	-	-	-	-	-	-	-	*x*	*x (1)*
Green Pitcher-Plant	-	-	-	-	*x*	*x*	*x*	*x*	*x*	*x*	-	-	-	-	-	-	-	-
Harperella	-	-	-	-	*x*	-	-	*x*	-	-	-	-	-	-	-	-	-	-
Large-Flowered Skullcap	-	*x*	*x*	*x*	*x*	-	-	-	-	-	-	-	-	-	-	-	-	-
Mohr's Barbara's Buttons	-	-	*x*	*x*	*x*	*x*	*x*	*x*	*x*	-	*x*	-	-	-	-	-	-	-
Tennessee Yellow-Eyed Grass	-	*x*	*x*	*x*	*x*	-	-	-	-	-	*x*	*x*	-	-	-	-	-	-
White Fringeless Orchid	-	*x*	*x*	-	-	-	-	-	-	-	*x*	*x*	-	-	-	*x*	-	-
Whorled Sunflower	-	-	*x*	*x*	*x*	*x (1)*	-	-	-	-	-	-	-	-	-	-	-	-

*Range data obtained from ECOS website by USFWS (USFWS, 2019a); may be current or historical range data.
**Critical habitat has been designated within this stream or area
x=Range for the species includes mainstem of river noted and/or tributary within the reach of the river (other than critical habitat unit listed)
1=Designated critical habitat is listed for this species within the river or creek reach listed (refer to Table 5-1 in Section 5.7).

7.9 CUMULATIVE EFFECTS

Cumulative effects of the proposed action on the environment in general are discussed in greater detail in Section 5 of the Draft FR/SEIS. Reference is made to that discussion; however, this discussion is focused on potential effects to federally listed threatened and endangered species.

Cumulative effects in ecosystems are defined as, "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions" (40 Code of Federal Regulations Parts 1500–1508). Constructing dams in riverine ecosystems abruptly, severely, and permanently alters many important physical and biological processes involving the movement of water, energy, sediments, nutrients, and biota. Eighteen dams impound mainstem channels of the ACT Basin, eliminating, fragmenting, and dramatically altering riverine habitat. USACE owns and operates five of those with APC owning the remainder. It should be re-emphasized that although the Alabama portion of the basin wide drought plan was developed in coordination with APC, USACE has no operational control over their water releases. During droughts, flows on the Coosa River below Weiss Dam (APC owned), the Tallapoosa River below Harris Dam (APC owned) and the Alabama River are almost entirely dependent on those APC releases from upstream projects.

Water quality is influenced by a number of factors, including pollutant loads and in-stream flows (water quantity). Pollutant loads include both point and nonpoint sources of pollution. Point sources of pollution are regulated by USEPA through the NPDES under the Water Pollution Act of 1972 as amended. Nonpoint sources of pollution are also targeted to reduce pollutant loads under the Water Pollution Act of 1972 as amended through TMDLs. Enforcement of reductions is varied because of limited resources. As activities in the ACT Basin change from forested to urban land cover, especially in the headwaters areas of the Etowah River Basin, peak flows in the system are likely to increase and base flows in the system are likely to decrease. Urban land cover generally decreases interception of rainfall and infiltration, increasing stormwater runoff. That would be expected to result in less assimilative capacity during periods of low flow because base flow decreases. The combined total of all these activities including reservoirs past and future along with growing M&I demand, land use, point source discharge and resulting water quality could have future impacts on the environment in general and on listed species in particular.

USACE believes that the proposed action would not add to or worsen the cumulative effects described above. We believe that there would be no cumulative effect on listed species and for some factors as previously discussed would represent an improvement.

8.0 CONCLUSION

Based on the effects analyses described in Section 7, the USACE has determined that the proposed action may affect but is not likely to adversely affect federally protected species in the Coosa River and Etowah River basins that are within the ROI. This is a subset of the species listed in ***Table 1-1*** and includes all the species detailed in Section 5.0 and in ***Table 7-8***: Gray bat, Indiana bat, northern long-eared bat, wood stork, red-cockaded woodpecker, Amber darter, blue shiner, Cherokee darter, Etowah darter, Alabama moccasinshell, Coosa moccasinshell, fine-lined pocketbook, Georgia pigtoe, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, upland combshell, interrupted rocksnail, painted rocksnail, rough hornsnail, tulotoma snail, Alabama leather flower, Georgia rockcress, green pitcher-plant, harperella, large-flowered skullcap, Mohr's Barbara's buttons, Tennessee yellow-eyed grass, white fringeless orchid, and whorled sunflower.

The proposed action will have no effect on federally protected species that are not within the ROI. This includes the following subset of species listed in ***Table 1-1***: bog turtle, flattened musk turtle, Black Warrior waterdog, Cahaba shiner, Conasauga logperch, goldline darter, pygmy sculpin, rush darter, snail darter, trispot darter, vermilion darter, Cumberland bean, dark pigtoe, orangenacre mucket, cylindrical lioplax, Lacy elimia, plicate rocksnail, Alabama canebrake pitcher-plant, gentian pinkroot, Kral's water-plantain, Michaux's sumac, small whorled pogonia, Swamp pink, Ruth's golden aster, and Virginia spiraea.

The proposed reservoir storage reallocation for water supply at Allatoona Lake and proposed modifications to flood operations at Weiss and Logan Martin dams may affect but is not likely to adversely modify or destroy critical habitat within the ROI, as identified in Section 5.7 and discussed in Section 7.8. Species with critical habitat in the ROI include: Alabama moccasinshell, Coosa moccasinshell, fine-lined pocketbook, Georgia pigtoe, ovate clubshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, upland combshell, interrupted rocksnail, rough hornsnail, Georgia rockcress, and whorled sunflower.

The rationale for the determinations for listed species and designated critical habitat is based on the finding that effects of the proposed action would be limited to an ROI defined as the Etowah River at its confluence with Hickory Log Creek at Canton, GA, downstream to its confluence with the Oostanaula River at Rome, GA, including Allatoona Dam and Lake; and the Coosa River at Rome downstream to its confluence with the Tallapoosa River near Montgomery, AL. Primary tributaries to the mainstem of the Coosa River that have designated critical habitat units are also included within the ROI, those include the Oostanaula River, Terrapin Creek, Mud Creek, Big Canoe Creek, Kelly Creek, Yellowleaf Creek, and Hatchet Creek; the critical habitat units within those tributaries were also included in the effects analysis. Within the ROI, water quality and water quantity changes are expected to be negligible to minor, and within the habitat requirements of all the protected species evaluated. Changes in water quality and quantity will not affect water bodies or upland areas outside of this ROI, and will therefore have no effect on protected species with ranges that are entirely outside of the ROI.

Therefore, we request concurrence with this determination per section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq).

9.0 REFERENCES

ADCNR. (2014a). *Blue Shiner*. Retrieved April 2019, from Outdoor Alabama: https://www.outdooralabama.com/shiners/blue.

ADCNR. (2014b). *Red-Cockaded Woodpecker*. Retrieved February 2014, from Outdoor Alabama: http://www.outdooralabama.com/watchable-wildlife/what/birds/ woodpeckers/rcw.cfm.

ADCNR. (2019a). *Alabama Hunting and Wildlife Regulations*. Retrieved October 22, 2019, from Outdoor Alabama: https://www.outdooralabama.com/hunting/alabama-hunting-and-wildlife-regulations.

ADCNR. (2019b). *Wood Stork*. Retrieved August 26, 2019, from Outdoor Alabama: https://www.outdooralabama.com/herons/wood-stork

ANHP. (2017). *Alabama Inventory List, The Rare, Threatened, & Endangered Plants and Animals of Alabama.* Alabama Natural Heritage Program.

Frick, E., Hippe, D., Buell, G., Couch, C., Hopkins, E., & et al. (1998). Water quality in the Apalachicola-Chattahoochee-Flint River Basin, Georgia, Alabama, and Florida, 1992–1995. *Circular 1164*.

GADNR. (2009a). *Gray bat*. Retrieved April 2019, from Georgia Wildlife: https://georgiawildlife.com/sites/default/files/wrd/pdf/fact-sheets/2009_gray_bat.pdf.

GADNR. (2009b). *Indiana Bat*. Retrieved April 2014, from Georgia Wildlife: https://georgiawildlife.com/sites/default/files/wrd/pdf/fact-sheets/2009_indiana_bat.pdf.

GADNR. (2015). *Northern Long-eared bat*. Retrieved April 2019, from Georgia Wildlife: https://georgiawildlife.com/sites/default/files/wrd/pdf/fact-sheets/2015_northern_long-eared-bat.pdf.

GADNR. (2016). *Amber Darter*. Retrieved April 2019, from Georgia Wildlife: https://georgiawildlife.com/sites/default/files/wrd/pdf/fact-sheets/amber_darter_2016.pdf.

GADNR. (2019). *General Information about Rare Natural Elements*. Retrieved March 1, 2019, from Georgia Biodiversity Portal: https://georgiabiodiversity.org/natels/general-info.html.

Mettee, M., O'Neil, P., & Pierson, J. (1996). *Fishes of Alabama and the Mobile Basin.* Oxmoor House, Birmingham, Alabama.

NatureServe. (2014a). *White Fringeless Orchid*. Retrieved March 2014, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2014b). *Whorled Sunflower*. Retrieved March 2014, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019a). *Etowah Darter*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org.

NatureServe. (2019b). *Finelined Pocketbook*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org.

NatureServe. (2019c). *Ovate Clubshell*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019d). *Southern Acornshell*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019e). *Southern Clubshell*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019f). *Triangular Kidneyshell*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019g). *Upland Combshell*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019h). *Interrupted Rocksnail*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/

NatureServe. (2019i). *Painted Rocksnail*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019j). *Tulotoma*. Retrieved June 2019, from NatureServe Explorer: http://explorer.natureserve.org/.

NatureServe. (2019k). *Alabama Leatherflower*. Retrieved October 25, 2019, from NatureServe Explorer: http://explorer.natureserve.org.

NatureServe. (2019l). *Tennessee Yellow-Eyed Grass*. Retrieved October 25, 2019, from NatureServe Explorer: http://explorer.natureserve.org.

Parmalee, P., & Bogan, A. (1998). *The Freshwater Mussels of Tennessee.* University of Tennessee Press, Knoxville.

Rice, S., Rhoads, B., & Roy, A. (2008). *River Confluences, Tributaries and the Fluvial Network.* West Sussex, England: John Wiley & Sons, Ltd. doi:10.1002/9780470760383.ch1

Sparks, R. (1992). Risks of altering the hydrologic regime of large rivers. (B. N. J. Cairns, Ed.) *Predicting Ecosystem Risk, Volume XX: Advances in Modern Environmental Toxicology*, 119-152.

Sparks, R. (1995). Need for ecosystem management of large rivers and their floodplains. *BioScience 45:168-182.*

Tennessee Department of State. (2016). Proclamation 1660-01-32, Endangered and Threatened Species (June 2016). Retrieved August 26, 2019, from Watchable Wildlife in Tennessee: https://www.tn.gov/content/dam/tn/twra/documents/1660-01-32%20threatened-endangered-species-rule.pdf

Tetra Tech, Inc. (2012, April 16). *Area Capacity Curves - Allatoona Lake, Georgia.* Atlanta, GA: Tetra Tech, Inc. (for the U.S. Army Corps of Engineers, Mobile District).

Tilman, D., Downing, J., & Wedin, D. (1994). Does diversity beget stability? *Nature 371:257-264.*

Toth, L. (1995). Need for ecosystem management of large rivers and their floodplains. (J. Cairns, Ed.) *Rehabilitating Damaged Ecosystems, 2nd edition*, 49-73.

TWRA. (2019). *Watchable Wildlife in Tennessee*. Retrieved March 2019, from Tennessee Wildlife Resources Agency: www.tn.gov/content/tn/twra/wildlife.html.

USACE ERDC. (2007). *Assessment of the Population Status of the Gray Bat (Myotis grisescens), Environmental Laboratory Technical Report 07-22.* Vicksburg, MS: United States Army Corps of Engineers Engineer Research and Development Center.

USACE Mobile District. (1962). *Alabama-Coosa River Basin Reservoir Regulation Manual, Appendix A, Allatoona Reservoir, Georgia.* Mobile, AL: U.S. Army Corps of Engineers, Mobile District.

USACE Mobile District. (1993). *Alabama-Coosa River Basin Water Control Manual, Appendix A, Allatoona Reservoir, Etowah River, Georgia.* Mobile, AL: U.S. Army Corps of Engineers, Mobile District.

USACE Mobile District. (1998). *Water Allocation for the Alabama-Coosa-Tallapoosa (ACT) River Basin, Alabama and Georgia, Draft Environmental Impact Statement.* Mobile, Alabama: US Army Corps of Engineers, Mobile District.

USACE Mobile District. (2003). *Biological Assessment: Species Identification Interim Report for the Alabama–Coosa–Tallapoosa (ACT) River Basin.* Mobile, AL: U.S. Army Corps of Engineers, Mobile District.

USACE Mobile District. (2014). *Final Environmental Impact Statement Update of the Water Control Manual for the Alabama-Coosa-Tallapoosa River Basin in Georgia and Alabama.* Mobile, Alabama: U.S. Army Corps of Engineers, Mobile District.

USACE Mobile District. (2018, December 14). Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Project Water Control Manuals (presentation to Planning Chief, USACE South Atlantic Division). Mobile, AL, AL: U.S. Army Corps of Engineers, Mobile District .

USEPA. (n.d.). *Total Nitrogen*. Retrieved from https://www.epa.gov/sites/production/files/2015-09/documents/totalnitrogen.pdf

USFWS. (1989). *Alabama Leather Flower Recovery Plan.* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (1990). *Harperella (Ptilimnium nodosum) Recovery Plan.* Newton Corner, Massachusetts.

USFWS. (1991). *Recovery Plan for Mohr's Barbara's Buttons.* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (1992). *Endangered and Threatened Wildlife and Plants; Endangered Status for Schwalbea americana (American Chaffseed).* U.S. Fish and Wildlife Service.

USFWS. (1993). *Recovery Plan for pondberry (Lindera melissifolia).* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (1994). *Green Pitcher Plant Recovery Plan.* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (1995). *Recovery Plan, Blue Shiner (Cyprinella caerulea).* U. S. Fish and Wildlife Service Southeast Region, Atlanta, GA.

USFWS. (1997). *Revised Recovery Plan for the U.S. Breeding Population of the Wood Stork.* U.S. Fish and Wildlife Service. Atlanta, Georgia.

USFWS. (1998). *Appendix E: Working Draft Fish and Wildlife Coordination Act Report for the ACF River Basin Water Allocation Formula. In Water Allocation for the Apalachicola-Chattahoochee-Flint (ACF) River Basin, Alabama, Florida, and Georgia, Volume 2. Draft.* U.S. Army Corps of Engineers, Mobile District, Mobile, Alabama.

USFWS. (2000). *Recovery Plan for Mobile River Basin Aquatic Ecosystem.* Atlanta, GA: U.F. Fish and Wildlife Service, Southeast Region.

USFWS. (2004). *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Three Threatened Mussels and Eight Endangered Mussels in the Mobile River Basin; Final Rule.* Federal Register 69(126):40083-40171.

USFWS. (2005). *Recovery Plan for 6 Mobile River Basin Aquatic Snails.* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (2006). *5-year review of Cylindrical Lioplax (Lioplax cyclostomatiformis), Flat Pebblesnail (Lepyrium showalteri), Plicate Rocksnail (Leptoxis plicata), Painted Rocksnail, (Leptoxis taeniata), Round Rocksnail (Leptoxis ampla) and Lacy Elimnia (Elima crenatella).* U.S. Fish and Wildlife Service, Jackson, Mississippi.

USFWS. (2007). *The Alabama, Coosa, and Tallapoosa River Watershed Critical Habitat for Protected Mussel Species.* Daphne, AL: U.S. Fish and Wildlife Service, Alabama Field Office.

USFWS. (2008). *Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Reviews of 10 Listed Species. Notices.* Federal Register 73(15):3991-3993.

USFWS. (2010a). *Endangered and threatened wildlife and plants; determination of endangered status for the Georgia pigtoe mussel, interrupted rocksnail, and rough hornsnail and designation of critical habitat; Final Rule.* Federal Register. November 2, 2010, 75(211):67512-67550.

USFWS. (2010b). *Fish and Wildlife Service Conducts Five-year Status Reviews of 10 Southeastern Species*. Retrieved June 2010, from http://www.fws.gov/southeast/news/2010/r10-031.html.

USFWS. (2017). *2017 Indiana Bat (Myotis sodalis) Population Status Update.* U.S. Fish and Wildlife Service, Indiana Ecological Services Field Office. Revised November 13, 2018.

USFWS. (2019a). *ECOS Environmental Conservation Online System*. Retrieved May 1, 2019, from U.S. Fish and Wildlife Service: https://ecos.fws.gov/ecp/.

USFWS. (2019b). *Official Species List- Coosa and Etowah Basins_Alabama.* Consultation Code: 04EA1000-2020-SLI-0119. Event Code: 04EA1000-2020-E-00229. Project Name: ACR Coosa and Etowah 10-28-19. Retrieved October 28, 2019.

USFWS. (2019c). *Official Species List- Coosa and Etowah Basins_Georgia.* Consultation Code: 04EG1000-2020-SLI-0246. Event Code: 04EG1000-2020-E-00452. Project Name: ACR Coosa and Etowah 10-28-19. Retrieved October 28, 2019.

USFWS. (2019d). *Official Species List- Coosa and Etowah Basins_Tennessee.* Consultation Code: 04ET1000-2020-E-0176. Event Code: 04ET1000-2020-E-00223. Project Name: ACR Coosa and Etowah 10-28-19. Retrieved October 28, 2019.

USFWS. (2019e). Threatened & Endangered Species Active Critical Habitat Report. Critical habitat shapefiles ("crithab_all_layers.zip"). Shapefiles updated March 19, 2019. U.S. Fish & Wildlife Service. Retrieved March 20, 2019, from https://ecos.fws.gov/ecp/report/table/critical-habitat.html.

Wang, X., Yan, X., Duan, H., Liu, X., & Huang, E. (2019). Experimental study on the influence of river flow confluences on the open channel stage–discharge relationship. *Hydrological Sciences Journal, 64*(16), 2025-2039.

Williams, J., & Hughes, M. (1998). *Freshwater Mussels (Unionidae) of Selected Reaches of the Main Channel Rivers of the Coosa Drainage of Georgia.* U.S. Geological Survey, Florida Caribbean Science Center, Gainsville, Florida.

Ziewitz, J., Luprek, B., & Kasbohm, J. (1997). *Comprehensive Study's Protected Species Inventory and Identification in the ACT and ACF River Basins. Volume I.* Fish and Wildlife Service, Panama City, Florida.

APPENDIX A BIOLOGICAL ASSESSMENT — PROPOSED UPDATE TO THE WATER CONTROL MANUAL FOR THE ALABAMA-COOSA-TALLAPOOSA RIVER BASIN IN GEORGIA AND ALABAMA (2014)

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

February 18, 2014

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Mr. William Pearson
Field Supervisor
U.S. Fish and Wildlife Service
1208-B Main Street
Daphne, Alabama 36526

Dear Mr. Pearson:

The enclosed document provides a Biological Assessment (BA) pursuant to the informal consultation procedures of Section 7 of the Endangered Species Act for the proposed Water Control Manual (WCM) updates for the Alabama-Coosa-Tallapoosa (ACT) River Basin. As discussed in the document, we believe that for all of the listed species and/or designated Critical Habitat occurring within the ACT Basin, there will be either a "no effect" or "likely to affect, but unlikely to adversely affect" result of the proposed action. We request your concurrence with each of these determinations. In addition we request an updated list of listed species from those of the U.S. Fish and Wildlife Service's scoping comment letter dated October 16, 2008, and the Department of Interior letter dated May 29, 2013, which provided comments on the Draft Environmental Impact Statement.

Thank you for your continued assistance in the update of the WCM. If you have any questions regarding the BA or wish to discuss it or the proposed action either by telephone or in person, please contact Mr. Chuck Sumner at (251) 694-3857 or email at lewis.c.sumner@usace.army.mil.

Sincerely,

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosure

BIOLOGICAL ASSESSMENT
PROPOSED UPDATE OF THE WATER CONTROL MANUAL FOR THE ALABAMA-COOSA-TALLAPOOSA RIVER BASIN IN GEORGIA AND ALABAMA

1. INTRODUCTION

On 1 March 2013, the U.S. Army Corps of Engineers, Mobile District (USACE) released a Draft Environmental Impact Statement (DEIS) for an Update of the Water Control Manual for the Alabama-Coosa-Tallapoosa (ACT) River Basin in Georgia and Alabama. The DEIS has been provided to the U.S. Fish and Wildlife Service (Service) Daphne, Alabama and Athens, Georgia field offices. Other related communication between our agencies include a Service scoping comment letter dated October 16, 2008 to USACE District Commander Byron Jorns, a Planning Aid Letter (PAL) from the Service Daphne Field Office to USACE District Commander Byron Jorns dated May 3, 2010, a response to the PAL from USACE Mobile District dated June 6, 2011, USACE November 22, 2011 Response to Service Questions, a Draft Fish and Wildlife Coordination Act Report (DFWCAR) provided by the Service Daphne Field Office, dated December 21, 2012, and a USACE Mobile District response to the DFWCAR dated February 8, 2013. In addition, a Department of the Interior letter commenting on the DEIS dated May 29, 2013, provided Service comments and a list of Federally listed threatened and endangered species potentially affected by the proposed action. The ACT Basin supports a wide variety of wildlife and is home to approximately 230 species that are protected or included as candidate species by the states and the federal government. Of those, 143 are federally listed as Threatened or Endangered. These species can be further broken down to species that are associated with riverine habitat, which, because of where they occur, have the greatest potential to be affected by changes in basin operations. Table 1 is a list of the species potentially affected by the proposed action based on available information, the Service scoping comment letter of October 16, 2008, and the Department of the Interior (DOI) letter commenting on the DEIS dated May 29, 2013. Because the Service scoping letter and DOI comment letter are over 180 days old, USACE is requesting verification of the species list.

Table 1. Listed Species Potentially Affected by USACE Proposed Action.

Common Name	Scientific Name	Status[1]	Critical Habitat within Affected Area
Mitchell's satyr butterfly	*Neonympha m. mitchellii*	E	No
Wood stork	*Mycteria americana*	E	No
Red cockaded woodpecker	*Picoides borealis*	E	No

Alabama beach mouse	*Peromyscus polionotus ammobates*	E	No
West Indian manatee	*Trichechus manatus*	E	No
Kemp's ridley sea turtle	*Lepidochelys kempii*	E	No
Eastern indigo snake	*Drymarchon corais couperi*	T	No
Black pine snake	*Pituophis melanoleucus lodingi*	C	No
Red hills salamander	*Phaeognathus hubrichti*	T	No
Alabama red-belly turtle	*Pseudemys alabamensis*	E	No
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	T	No
Blue shiner	*Cyprinella caerulea*	T	No
Etowah darter	*Etheostoma etowahae*	E	No
Cherokee darter	*Etheostoma scotti*	T	No
Cahaba shiner	*Notropis cahabae*	E	No
Amber darter	*Percina antesella*	E	Yes
Goldline darter	*Percina aurolineata*	T	No
Conasauga logperch	*Percina jenkinsi*	E	Yes
Alabama sturgeon	*Scaphirhynchus suttkusi*	E	Yes
Finelined pocketbook	*Lampsilis altilis*	T	Yes
Orange-nacre mucket	*Lampsilis perovalis*	T	Yes
Alabama moccasinshell	*Medionidus acutissimus*	T	Yes
Coosa moccasinshell	*Medionidus parvulus*	E	Yes
Ovate clubshell	*Pleurobema perovatum*	E	Yes
Southern clubshell	*Pleurobema decisum*	E	Yes
Southern pigtoe	*Pleurobema georgianum*	E	Yes
Triangular kidneyshell	*Ptychobranchus greenii*	E	Yes
Southern acornshell	*Epioblasma othcaloogensis*	E	Yes
Upland combshell	*Epioblasma metastriata*	E	Yes
Alabama pearlshell	*Margaritifera marrianae*	E	Yes
Southern combshell	*Epioblasma penita*	E	No
Heavy pigtoe	*Pleurobema taitianum*	E	No
Alabama heelsplitter	*Potomilus inflatus*	E	No
Georgia pigtoe	*Pleurobema hanleyianum*	E	Yes
Interrupted rocksnail	*Leptoxis foremani*	E	Yes
Rough hornsnail	*Pleurocera foremani*	E	Yes
Lacy elimia	*Elimia crenatella*	T	No
Round rocksnail	*Leptoxis ampla*	T	No
Painted rocksnail	*Leptoxis taeniata*	T	No
Flat pebblesnail	*Lepyrium showalteri*	E	No

Cylindrical lioplax snail	*Lioplax cyclostomaformis*	E	No
Tulotoma snail	*Tulotoma magnifica*	T	No
Price's potato bean	*Apios priceana*	T	No
Georgia rockcress	*Arabis Georgiana*	C	Yes
Alabama leather flower	*Clematis socialis*	E	No
Whorled sunflower	*Helianthus verticillatus*	C	No
Mohr's Barbara's buttons	*Marshallia mohrii*	T	No
White fringeless orchid	*Platanthera integrilabia*	C	No
Harperella	*Ptilimnium nodosum*	E	No
Michaux's Sumac	*Rhus michauxii*	E	No
Kral's water-plantain	*Sagittaria secundifolia*	T	No
Green pitcher-plant	*Sarracenia oreophila*	E	No
Alabama canebrake pitcher plant	*Sarracenia rubra alabamensis*	E	No
Georgia aster	*Symphyotrichum georgianum*	C	No
Tennessee yellow-eyed grass	*Xyris tennesseensis*	E	No
[1]E - Endangered, T - Threatened, C – Candidate			

All of the species listed in Table 1 have a dependence on the aquatic environment or occur in geographic proximity to the aquatic environments of the ACT basin. However, of these, Mitchell's satyr butterfly, Red cockaded woodpecker, Alabama beach mouse, Kemp's ridley sea turtle, Eastern indigo snake, Black pine snake, Price's potato bean, Alabama leather flower, Whorled sunflower, Mohr's Barbara's buttons, White fringeless orchid, Michaux's Sumac, and Georgia aster are found in areas outside the range of aquatic habitats potentially impacted by flow regime or water quality changes (i.e. nearby upland areas). Therefore, there would be no effect on these species and they are not further addressed in this biological assessment. Effects to the remaining species in Table 1 are evaluated in this biological assessment and the results of that effects analysis are described in the EFFECTS ANALYSIS section below.

2. PURPOSE AND NEED

The purpose and need for the federal action is to determine how the federal projects in the ACT Basin should update operations for their authorized purposes, in light of current conditions and applicable law, and to implement those operations through updated water control plans and manuals. The action will result in updated plans and manuals that comply with existing Corps regulations and reflect operations under existing congressional authorizations, taking into account changes in basin hydrology and demands from years of growth and development, new/rehabilitated structural features, legal developments, and environmental issues. Corps regulations also provide specific policy and guidance for inclusion of drought contingency plans as part of Corps' overall water control management activities. To be effective, the drought plan for the ACT Basin must incorporate a comprehensive, basin-wide approach that considers the interrelationship of Corps projects and Alabama Power Company (APC) projects in the basin.

This WCM update includes a proposed drought plan for the basin developed in collaboration with APC. In addition to operations at Corps projects in the ACT basin, flood control operations at two APC projects (H. Neely Henry and R.L. Harris) would be updated in their respective water control manuals.

In order to understand the purpose of this proposed action, it is also important to understand the limits of the action and what is not included. USACE is not proposing to build, install, or upgrade any facilities. USACE is not proposing to modify any authorized project purpose via this action, although the extent to which some can be achieved may be affected. This action is limited to the way reservoir levels are managed and water is released from them.

3. PROPOSED ACTION

Throughout development of the water control manual update and preparation of the DEIS, the USACE provided summaries of the proposed action to the Service. Therefore, the proposed action is summarized here and reference made to the full discussion in Section 5 of the DEIS.

Operations under the Proposed Action include the following:

• Implement a revised drought plan with enhancements recommended by the Service.

• Provide for seasonal navigation releases to support commercial navigation in the Alabama River for a 9.0-ft or 7.5-ft channel depth as long as sufficient basin inflow above the APC projects is available. When sufficient flows cannot be provided to continue to support a minimum 7.5-ft navigation channel, navigation could be impeded and flows at Montgomery would be reduced to 4,640 cfs (7Q10). If one or more of the drought operations triggers (low basin inflows, low composite conservation storage, or low state line flows) are met, minimum flows at Montgomery would be dropped below 4,640 cfs in accordance with specific protocols developed collaboratively between the Corps and APC (discussed in detail in Section 5 of the DEIS).

• APC projects would continue to operate under their current Federal Energy Regulatory Commission (FERC) licenses with specific operational requirements.

• The APC project, H. Neely Henry Lake (Coosa River), which operates with a revised guide curve under a FERC license variance (with Corps concurrence) would continue to operate under its revised guide curve.

• Allatoona Reservoir would continue to provide for a 240-cfs minimum flow.

• The existing guide curve at Allatoona Reservoir would be revised to implement a phased fall drawdown period from early September through December. Refined operations at Allatoona Reservoir would include use of four action zones shaped to mimic the seasonal demands for hydropower. Modifications to the hydropower schedule would be put in place to provide greater operational flexibility to meet power demands while conserving storage. Specifically, under the PAA, hydropower generation would be reduced during annual drawdown in the fall (September through November).

•The current minimum flow requirement would remain 240 cfs from Carters Reregulation Dam. Refined operations at Carters Reservoir would include the use of two action zones to manage downstream releases. The top of the new action zone 2 begins at elevation 1,066 ft in January, increasing to 1,070.5 ft in May, dropping to 1,070 ft by October, and returning to elevation 1,066 ft through December. When Carters Reservoir is in action zone 1, minimum flow releases at Carters Reregulation Dam would be equal to the seasonal minimum flow. Those minimum flow releases are based on the mean monthly flow upstream of Carters Reservoir. If Carters Reservoir elevations drop into action zone 2, minimum flow releases from Carters Reregulation Dam would be 240 cfs.

• The Corps reserves 6,371 ac-ft of storage space in Allatoona Reservoir for water supply for the City of Cartersville, GA and 13,140 ac-ft for the Cobb County Marietta Water Authority. Total storage space allocated to water supply is 19,511 ac-ft.

• The Corps reserves 818 ac-ft in Carters Reservoir for water supply for the City of Chatsworth, GA.

• The Corps would continue to manage fish spawning operations at Allatoona Reservoir. During the largemouth bass spawning period, from March 15 to May 15, the Corps seeks to maintain generally stable or rising reservoir levels at Allatoona Reservoir. Generally stable or rising levels are defined as not lowering the reservoir levels by more than 6 inches, with the base elevation generally adjusted upward as levels rise from increased inflows or refilling of the reservoir.

• The Corps would continue migratory fish passage operations at Claiborne Lock and Dam and Millers Ferry Lock and Dam.

4. ACTION AREA

Service regulations define “action area” as all areas affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR §402.02). The ACT water control manual update specifically addresses releases from the five federal projects, navigation support and flood risk management actions at two Alabama Power Company (“APC”) projects (H. Neely Henry Dam and Lake and R.L. Harris Dam and Lake). These releases are accomplished through the respective independent operations of all of the USACE and APC reservoirs in the ACT River Basin. Although, the action area includes all aquatic habitats downstream of the USACE upstream-most ACT projects, Allatoona Reservoir and Carters Reservoir, ending with and including Mobile Bay (Figure 1), large portions of the middle basin are regulated by APC's operation of its FERC licensed projects. In addition to the two listed above, the APC projects include Weiss Dam and Lake, Logan Martin Dam and Lake, Lay Dam and Lake, Mitchell Dam and Lake, Walter Bouldin Dam and Lake, Jordan Dam, Martin Dam and Lake, Yates Dam and Thurlow Dam. This portion of the basin was addressed by the Service in its June 7, 2012 Biological Opinion (BO) issued for the proposed Federal Energy Regulatory Commission's relicensing of APC's seven hydropower projects on the Coosa River. The river flow regime in this portion of the middle basin is predicated on the operation of those seven APC hydropower projects rather than upstream operations at USACE projects. These APC operations have already been consulted on and are subject to the terms and conditions of the June 7, 2012 BO and Incidental Take Statement. Therefore, while the action area includes all aquatic habitats that are downstream of the USACE upstream-most ACT projects, Allatoona Dam and Carters Dam, ending with and including Mobile Bay, the effects analysis of the USACE proposed action are limited to the aquatic habitats downstream of Allatoona Dam and Carters Dam to the APC-owned Weiss Dam; and from Montgomery down to and including Mobile Bay. This portion of the action area, which we address in the remainder of this BA, is shown in Figure 2. Hereafter, our use of the term "action area" refers to this limited portion of the broader action area.

5. STATUS OF THE SPECIES/CRITICAL HABITAT

During preparation of the DEIS, surveys for listed species in the ACT basin were conducted in cooperation with the Service. These were previously provided to the Service and include (1) Quantitative Sampling of *Pleurobema taitianum* in the Alabama River; (2)Survey for *Tulotoma magnifica* in Mainstem of Alabama River, Freshwater Mussels (Unionidae) and Aquatic Snails of Selected Reaches of the Coosa Drainage, Georgia; (3) Burrow Occupancy of the Red Hills Salamander at Haines Island Park and Survey for Populations West of the Alabama River; (4) Fish assemblage survey of selected sites in the Alabama River and associated Tributaries; (5) Inventory of Federally Listed and Sensitive Plant and Select Animal Species on U.S. Army Corps of Engineers Landholdings along the Alabama River.

All individual species descriptive information is from USFWS resource documents located at http://www.fws.gov/endangered and from the NatureServe Explorer at http://www.natureserve.org/explorer referenced from the USFWS site. The information presented here is a summary of the species and Critical Habitat and/or habitat requirements. The DEIS also has additional information regarding the historic and current ranges of the species. That information is located in section 2.5.4 of the DEIS.

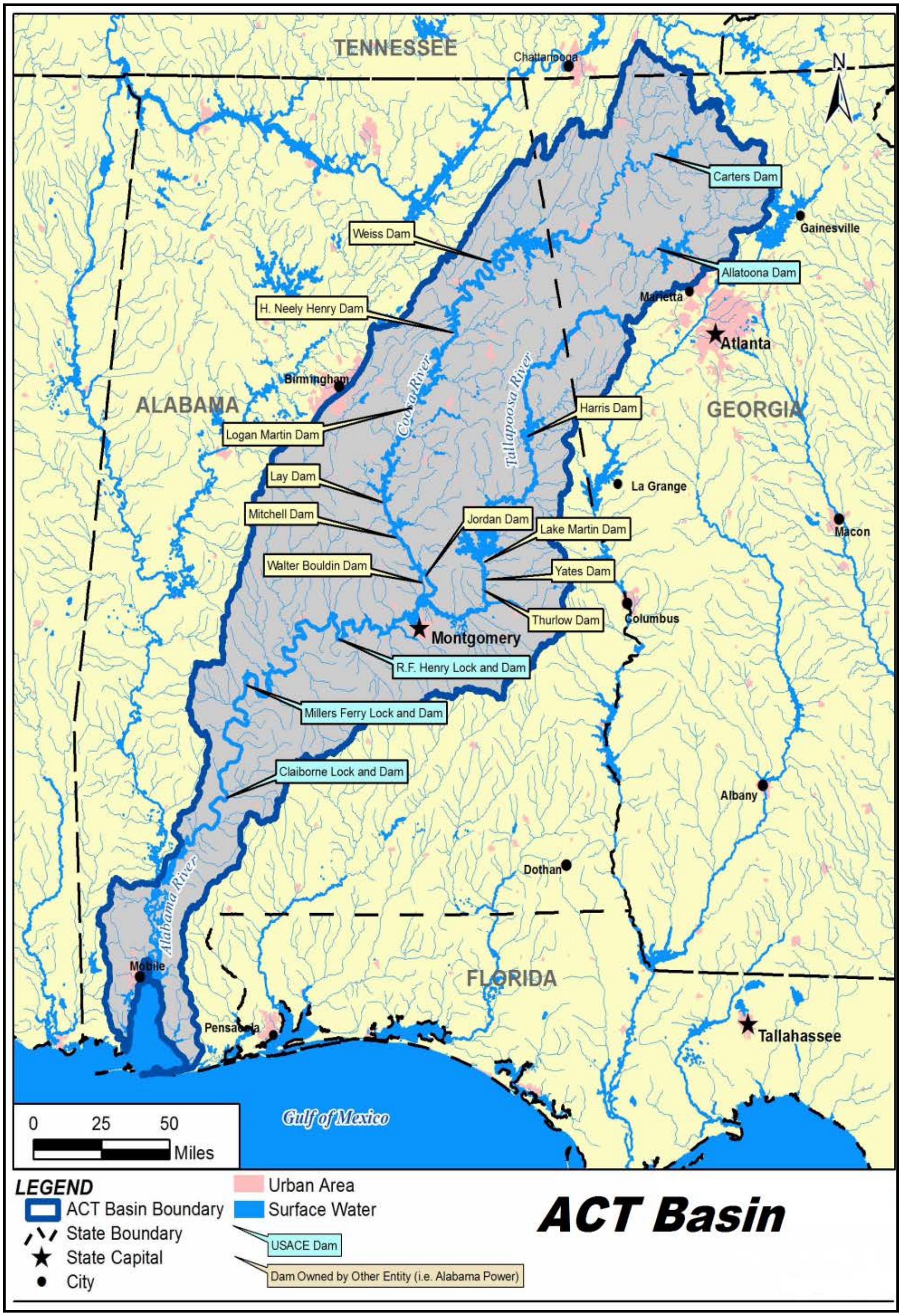


Figure 1. USACE and Alabama Power Company Projects
in the Alabama-Coosa-Tallapoosa Basin

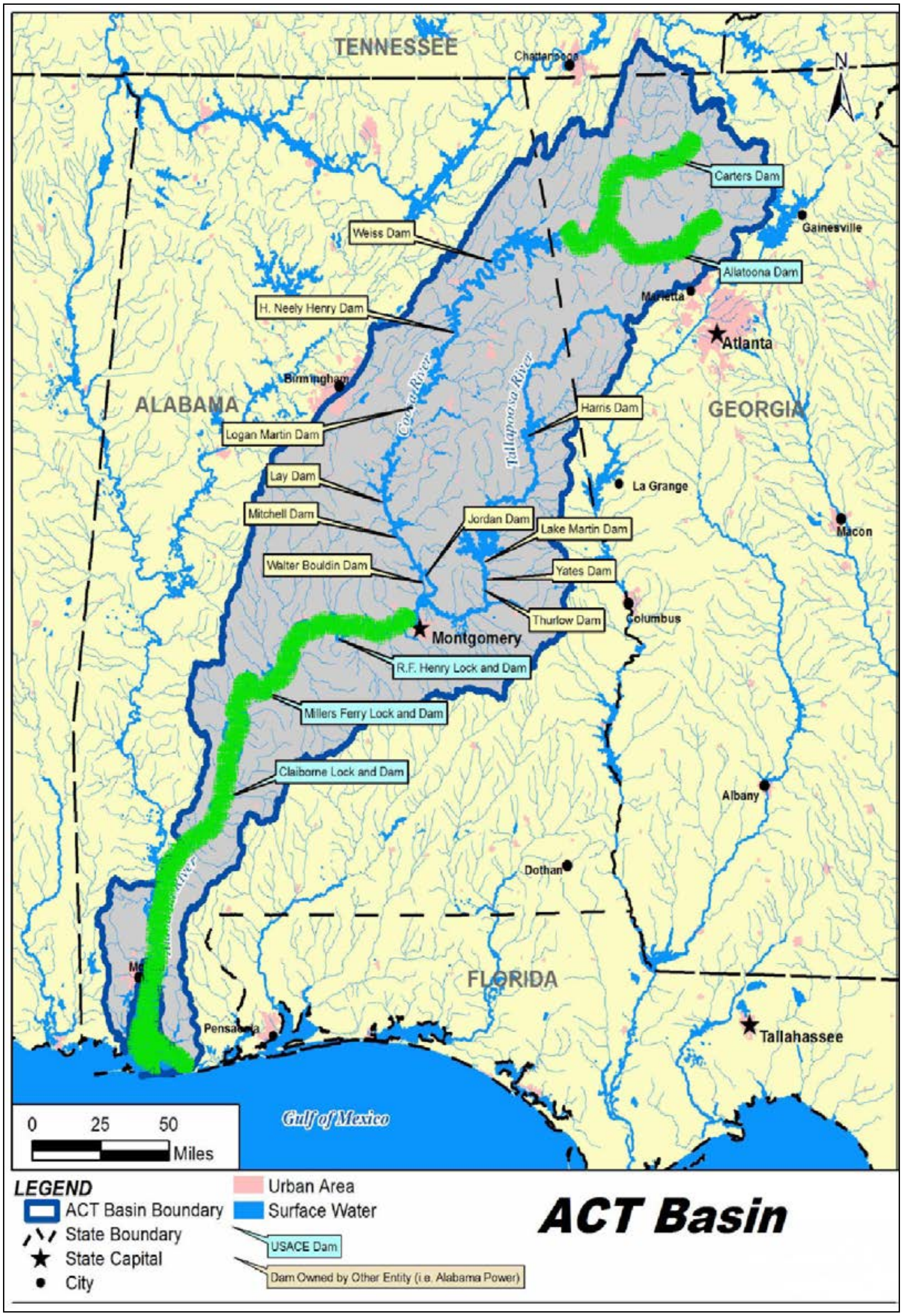


Figure 2. Limited Action Area Downstream of USACE Projects
in the ACT Basin (green shading).

Birds

Wood stork (*Mycteria Americana),* is a wetland dependent bird species and loss of foraging wetlands is the primary threat. The species is only indirectly associated with riverine habitat.

Mammals

West Indian manatee (*Trichechus manatus),* is found in marine, estuarine and freshwater environments. The species is occasionally found in Mobile Bay and into the Mobile River. In 2012, a single individual was sighted near Claiborne Dam on the Alabama River. The species is intolerant of cold and does not overwinter in Alabama.

Reptiles and amphibians

Red hills salamander (*Phaeognathus hubrichti)* is found in Butler, Conecuh, Covington, Crenshaw, Monroe, and Wilcox Counties in Alabama, in the lower portions of the Alabama River basin. The species is found typically on steep sloped ravines and bluffs dominated by hardwoods with high soil moisture and full tree canopy. The lower ACT basin has bluffs and ravines associated with the species preferred riverine habitat which could be impacted by changes in river flows.

Alabama red-belly turtle (*Pseudemys alabamensis),* is found in Mobile and Baldwin Counties, Alabama in quiet backwaters of upper Mobile Bay in water generally one to two meters in depth. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Fish

Gulf sturgeon (*Acipenser oxyrinchus desotoi),* is listed in the lower Alabama River basin, in Baldwin, Clarke, Monroe, Washington and Mobile Counties, Alabama. The species is primarily marine/estuarine in winter; it migrates to upper rivers in spring for spawning; returns to sea/estuary in fall; some may remain near spawning areas. First two years are spent in riverine habitats. Spawns in fresh water (sometimes tidal) usually over bottom of hard clay, rubble, gravel, or shell. Critical habitat has been designated for the Gulf sturgeon but does not include the Mobile River and sub-basins, including the Alabama River. The Service has indicated that there is no recent documented spawning in those rivers, and for that reason critical habitat was not designated. It seems likely that because at least two of the Primary Constituent Elements (PCE's) associated with the designated critical habitat units are not met, spawning remains unlikely in the Mobile and Alabama Rivers. Those PCE's are river spawning sites, and a safe and unobstructed migratory pathway (an unobstructed river or dammed river that still allows for passage of the species). The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Blue shiner (*Cyprinella caerulea),* occurs in Tennessee, Alabama and Georgia counties in the Coosa River basin. The species is restricted to the Conasauga River and tributaries in Tennessee and Georgia, Coosawattee River and tributaries in Georgia upstream of Carters Dam, and Weogufka and Choccolocco creeks and lower Little River, tributaries of Coosa River in Alabama. Habitat includes cool, clear, small to medium-sized rivers over firm substrates (sand, gravel, or rubble) in pools, backwaters, and areas of moderate current. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Etowah darter (*Etheostoma etowahae),* is found in the Etowah mainstem and eight tributaries in Georgia. The species has been reported in the Etowah River downstream of Allatoona Dam. However, the species is known to co-occur with the closely related greenbreast darter in this reach and may in fact represent a distinct hybrid population segment. The results of genetic testing to confirm this theory are not available yet (Brett Albanese, Georgia Department of Natural Resources, personal communication, 2011). Counties include Bartow, Cherokee, Dawson, Lumpkin, Paulding and Pickens. Typically, the species is found in riffles of streams with moderate to strong current over gravel or cobble substrate. It is also found in medium size rivers with riffles and strong currents. It is intolerant of stream impoundments. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Cherokee darter (*Etheostoma. scotti),* occurs in several Georgia counties in the Coosawattee and Etowah River watersheds. Habitat includes pools and adjacent riffles of creeks and small rivers about 1-15 meters wide, with moderate gradient and predominantly rocky bottoms; usually in shallow water in sections of reduced current, typically in runs above and below riffles and at the ecotones of riffles and backwaters; associated with large gravel, cobble, and small boulder substrates; uncommonly or rarely over bedrock, fine gravel, or sand; most abundant in sections with relatively clear water and substrates mainly clear of silt. It is intolerant of impoundment. The species occurs mostly within tributaries to riverine habitat potentially affected by changes to flows or water quality.

Cahaba shiner (*Notropis cahabae),* is limited to the Cahaba River basin, a major tributary to the Alabama River. Habitat includes flowing pools, usually over sand or gravel, in the main channel of medium-sized rivers. It moves into lower reaches of small tributaries during flood events and is occasionally found at the heads of pools and in shallow gravel riffles. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Amber darter (*Percina antesella),* is found in several Georgia counties in the ACT basin and several counties in Tennessee upstream of Allatoona and Carters Reservoirs. The current range includes the Coosa River system, the mainstream Etowah River upstream of Allatoona Reservoir, tributaries upstream of the area influenced by Allatoona Reservoir, and the Coosawattee River downstream of Carters Reservoir. It occurs in flowing pools and deeper runs with clean substrates of sand and fine gravel with scattered. It has been found associated with vegetation in riffle areas in midsummer.

Usually it is in cool, clear water up to 60 cm deep, with moderate to swift current. Critical habitat has been designated on the Conasauga River from Polk County, Tennessee downstream approximately 33.5 miles to the Georgia State Highway 2 Bridge, Murray County, Georgia. The species occurs within riverine habitat potentially affected by changes to flows or water quality.
Goldline darter (*Percina aurolineata),* is found in several Alabama counties in the Cahaba River basin and in several Georgia counties in the Coosawattee River basin. Its habitat includes fast rocky runs of small to medium rivers, main channels in areas of white-water rapids to three or more feet deep, and substrates of bedrock, boulders, rubble and gravel. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Conasauga logperch (*Percina. jenkinsi),* is found in Murray County, Georgia and Bradley County Tennessee on the Conasauga River above Carters Reservoir. Critical habitat has been designated on the Conasauga River from Polk County, Tennessee downstream approximately 11miles to the Georgia State Highway 2 Bridge, Murray County, Georgia. The species occurs within riverine habitat potentially affected by changes to flows or water quality.

Alabama sturgeon (*Scaphirhynchus suttkusi),* is found in the Alabama River in Autauga, Baldwin, Bibb, Clarke, Dallas, Monroe, Perry and Wilcox Counties, Alabama. Habitat includes the main channels of major rivers in areas below the Fall Line; most specimens have been taken in moderate to swift current at depths of 6-14 meters, over sand and gravel or mud; a couple records are from oxbow lakes. This species apparently prefers relatively stable substrates of gravel and sand in river channels with swift currents. Spawning occurs probably in areas with current, perhaps on hard substrates that may occur in main channels or in deep-water habitats associated with channel-training structures in major rivers or possibly in tributaries.

Critical habitat has been designated by the Service in a Final Rule, 50 CFR Part 17 (Federal Register (FR)/Volume 74, Number 104, Pages 26488-26510). That rule designated as critical habitat 326 miles of river channel from the Alabama River confluence with the Tombigbee River upstream to the R.F. Henry Lock and Dam, and the Cahaba River from its confluence with the Alabama River upstream to U.S. Highway 82 in Bibb County, Alabama.

As stated in the Final Rule, the primary constituent elements (PCE) of critical habitat for the Alabama sturgeon are: (i) A flow regime (*i.e.,* the magnitude, frequency, duration, seasonality of discharge over time) necessary to maintain all life stages of the species in the riverine environment, including migration, breeding site selection, resting, larval development, and protection of cool water refuges (*i.e.,*tributaries); (ii) River channel with stable sand and gravel river bottoms, and bedrock walls, including associated mussel beds; (iii) Limestone outcrops and cut limestone banks, large gravel or cobble such as that found around channel training devices, and bedrock channel walls that provide riverine spawning sites with substrates suitable for embryo deposition and development; (iv) Long sections of free-flowing water to allow spawning migrations and development of embryos and larvae; (v) Water temperature not exceeding 32° Celsius (90° Fahrenheit); dissolved oxygen levels not less than 5 milligrams per liter (mg/L) (5 parts per million (ppm)), except under extreme conditions due to natural causes or downstream of existing hydroelectric impoundments, where it can range from 5 mg/L to 4 mg/L (5 ppm to 4 ppm); and pH within the range of 6.0 to 8.5.

The Service changed the first PCE from the originally proposed minimum flow at Montgomery, Alabama of 4,640 cubic feet per second (cfs) to the final wording to reflect that the species' flow needs are relative to the season of the year. The discussion in the FR indicated that flows greater than 4,640 cfs are likely needed in the spring to successfully spawn. On the other hand, it stated that while lower flows may involve adverse effects, depending on other factors, such low flows may not result in measureable adverse effects or constitute a threshold for adverse modification of Critical Habitat.

In the FR, the Service noted that during 2007 and 2008, the Alabama River Basin experienced the worst drought ever recorded. However, the discussion also noted that the 2007-2008 drought may have actually been normal in the context of the past 1000 years and that the 40-year period prior to the present may have been exceptionally wet. The Service stated their belief that the species is adapted to period low-flow conditions similar to the 2007-2008 drought, but that they do not believe that the sturgeon is adapted to survive extended drought periods where water quality is compromised by excessive discharges that the river is unable to assimilate.

As stated earlier, the proposed action would be expected to achieve flows of 4,640 cfs 96% of the time and overall, achieve flows similar to the current conditions (see Figures 6.1-42 and 6.1-43 of the DEIS). In October and November average daily flows would be slightly lower (up to 4%) than for the current operation. As shown in DEIS Table 6.1-4, the proposed action would result in Drought Level 3 operations 1.2% of the time based on the 1939-2008 modeled hydrologic conditions. The Drought Level 3 operation would come as a result of implementation of a basin wide drought plan as shown in DEIS Table 4.2-9. The drought plan was developed in coordination with the Service and has received its concurrence in previous communications.

APC projects on the Coosa and Tallapoosa Rivers ultimately determine the flows on the Alabama River at Montgomery and downstream to the USACE Claiborne project. This is due to APC control of all storage downstream of Allatoona and Carters Reservoirs (which together comprise only 17% of basin storage), down to the three USACE projects on the Alabama River. This results in the three lower USACE projects being almost entirely dependent on APC releases for inflows and because there they have no storage capacity must pass those inflows as they are received.

Actual flows on the Alabama River at Montgomery were cut by APC by 57% from the 4,640 cfs level during the 2007 drought to approximately 2,000 cfs. The drought plan developed by APC for its Coosa relicensing effort was developed in coordination with USACE for this manual update in order to provide a single basin-wide drought plan and under it the lowest permitted flows during Drought Level 3 operations would be about

2,000 cfs . The Service did not consider potential impacts to the sturgeon in its June 7, 2012 Biological Opinion (BO) issued for the APC Coosa River Project.

Because there would be almost no changes on river flows due to the proposed action, there would be no changes to river morphology including substrates, banks and channels. There would be no impacts on rock, cobble or gravel outcroppings. There would be no impact to feeding or spawning habitat. There would be no changes to long reaches of free-flowing water. As noted previously, there would be negligible changes in water quality on the Alabama River.

The Alabama sturgeon and its critical habitat occur within riverine habitat potentially affected by changes to flows or water quality. USACE believes that because flows as a result of the proposed action would be generally the same as the baseline condition, flows during extreme drought would be similar to those of 2007, that the proposed action would cause no changes in flows or water quality conditions that could impact those areas.

Mollusks

Several listed mussel and snail species occur in the ACT basin. All are benthic, aquatic organisms with specific substrate, flow and water quality requirements that would be potentially impacted by changes to river conditions. A summary of those requirements is provided for each species as shown. Locations where the species are indicated by the Service to potentially occur are indicated by the following codes: *uco=upper Coosa basin, lco=lower Coosa basin, al=Alabama River basin, t= Tallapoosa River basin.*

Finelined pocketbook (*Lampsilis altilis),* usually found in creeks, high gradient, low gradient, medium river, moderate gradient, riffles, sand and gravel substrates. *uco, lco, al*

Orange-nacre mucket (*Lampsilis perovalis),* in creeks medium river, moderate gradient, riffles, sand, gravel, cobble substrate in swift current. *al lco*

Alabama moccasinshell (*Medionidus acutissimus*), in big rivers, medium rivers, high, low gradient, sand or gravel substrate in clear water of moderate flow. *uco,lco, al*

Coosa moccasinshell (*Medionidus parvulus),* in creeks, small rivers high to medium gradient with riffles, sand and gravel substrate in clear streams. *uco lco, al*

Ovate clubshell (*Pleurobema perovatum*), in big rivers to medium rivers and creeks, moderate gradient, pools and riffles, sand gravel shoals. *lco, al, t*

Southern clubshell (*Pleurobema decisum),* in large rivers to small streams, with sand and gravel substrate on shoals or in center of river. *al uco, lco, t*

Southern pigtoe (*Pleurobema georgianum),* in big rivers, medium rivers, streams, shoals with stable gravel and sandy-gravel substrates. *uco, lco*

Triangular kidneyshell (*Ptychobranchus greenii),* in big rivers to medium rivers and creeks, moderate gradient, pools and riffles, substrate of firm coarse gravel and sand. *uco, lco*

Southern acornshell (*Epioblasma othcaloogensis),* in creeks medium river, moderate gradient, riffles on coarse particle substrates. *uco, lco, al*

Upland combshell (*Epioblasma metastriata),* in creeks, medium rivers of moderate gradient and swift currents on stable substrates. *uco, al*

Critical habitat has been designated (50 CFR, Part 17, Federal Register Volume 69, Number 126, Pages 40084-40171) for the ten species described above within the Mobile River basin. Some of the critical habitat units are designated in the Tombigbee River basin and are therefore not affected by the proposed action in the ACT. Other units are within the ACT. Unit 14 is designated on the Alabama River, in Alabama from the confluence with the Cahaba River upstream to the confluence with Big Swamp Creek for the Southern clubshell and the Orange-nacre mucket. Unit 15 is designated in Alabama on Bogue Chitto Creek from the confluence with the Alabama River upstream to U.S. Highway 80 for the Southern Clubshell, Alabama moccasinshell, and the Orange-nacre mucket. Unit 16 is designated on the Tallapoosa River from U.S. Highway 431 in Alabama upstream to McClendon Creek in Georgia and includes Cane Creek in Alabama and Mud and McClendon Creeks in Georgia for the Fine-lined pocketbook. Unit 17 is designated on the Uphapee Creek in Alabama from U.S. Highway 199 upstream through Choctafaula, Chewacla and Opintlocco Creeks for the Ovate clubshell, Southern clubshell and Fine-lined pocketbook. Unit 18 is designated on the Coosa River mainstem from the power line crossing southeast of Maple Grove, Alabama upstream to Weiss Dam, Terrapin Creek and South Fork Terrapin Creek for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland Combshell, Triangular Kidneyshell, Coosa moccasinshell, Southern pigtoe, and fine-lined pocketbook. Unit 19 is designated in Alabama on Hatchet Creek for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland combshell, Triangular kidneyshell, Coosa moccasinshell, Southern pigtoe, and fine-lined pocketbook. Unit 20 is designated in Alabama on Shoal Creek for the Triangular kidneyshell, Coosa moccasinshell, Southern pigtoe, and fine-lined pocketbook. Unit 21is designated on Kelly Creek from the confluence with the Coosa River upstream to the confluence of Shoal Creek and Shoal Creek from the confluence with Kelly Creek upstream to the St. Clair/Shelby County, Alabama line for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland combshell, Triangular kidneyshell, Coosa moccasinshell, Southern pigtoe, and Fine-lined pocketbook. Unit 22 in Alabama includes Cheaha Creek from the confluence with Choccolocco Creek upstream to Chinnabee Lake dam for the Triangular kidneyshell, Coosa moccasinshell, Southern pigtoe, and Fine-lined pocketbook. Unit 23 in Alabama includes Yellowleaf Creek and Muddy Prong Creek for the Triangular kidneyshell, Coosa moccasinshell, Southern pigtoe, and fine-lined pocketbook. Unit 24 in Alabama includes Big Canoe Creek for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland Combshell, Triangular Kidneyshell, Coosa Moccasinshell, Southern pigtoe, and Fine-lined pocketbook. Unit 25 in Georgia includes the Oostanaula River mainstem from its confluence with the Etowah River upstream to the confluence of the Conasauga and Coosawattee River, the Coosawattee River mainstem from its confluence with the Conasauga River upstream to Georgia State Highway 136, the Conasauga River mainstem from the confluence with the Coosawattee River upstream to Murray County Road 2, and Holly Creek for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland combshell, Triangular kidneyshell, Alabama moccasinshell, Coosa moccasinshell, Southern pigtoe, and Fine-lined pocketbook. Unit 26 includes the Coosa River mainstem from Alabama State Highway 111 upstream to Jordan Dam for the Southern acornshell, Ovate clubshell, Southern clubshell, Upland combshell, Triangular kidneyshell, Alabama moccasinshell, Coosa moccasinshell, Southern pigtoe, and Fine-lined pocketbook.

The primary constituent elements include: (i) Geomorphically stable stream and river channels and banks; (ii) A flow regime (*i.e.*, the magnitude, frequency, duration, and seasonality of discharge over time) necessary for normal behavior, growth, and survival of all life stages of mussels and their fish hosts in the river environment; (iii) Water quality, including temperature, pH, hardness, turbidity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; (iv) Sand, gravel, and/or cobble substrates with low to moderate amounts of fine sediment, low amounts of attached filamentous algae, and other physical and chemical characteristics necessary for normal behavior, growth, and viability of all life stages; (v) Fish hosts, with adequate living, foraging, and spawning areas for them; And (vi) Few or no competitive nonnative species present.

Alabama pearlshell (*Margaritifera marrianae),* in headwater streams slow to moderate velocity with substrates of sand, mud or gravel. *al*

Critical habitat has been designated for the Alabama pearlshell (50 CFR, Part 17, FR, Volume 77, Number 196, Pages 61664-61719). Within the ACT, critical habitat is limited to one habitat unit. Unit AP1 has been designated on the mainstem of Big Flat Creek from State Route 41 upstream 35 miles, Flat Creek and Dailey Creek upstream from their confluence with Big Flat Creek in Alabama.

Primary constituent elements include: (i) Geomorphically stable stream and river channels and banks (channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation). (ii) Stable substrates of sand or mixtures of sand with clay or gravel with low to moderate amounts of fine sediment and attached filamentous algae. (iii) A hydrologic flow regime (magnitude, frequency, duration, and seasonality of discharge over time) necessary to maintain benthic habitats where the species are found, and to maintain connectivity of rivers with the floodplain, allowing the exchange of nutrients and sediment for habitat maintenance, food availability, and spawning habitat for native fishes. (iv) Water quality, including temperature (not greater than 32 °C), pH (between 6.0 to 8.5), oxygen content (not less than 5.0 milligrams per liter), hardness, turbidity, and other chemical characteristics necessary for normal behavior, growth, and viability of all life stages. (v)

The presence of fish hosts. Diverse assemblages of native fish species will serve as a potential indication of host fish presence until appropriate host fishes can be identified.

Southern combshell (*Epioblasma penita),* in high gradient, medium river, riffles, sandy gravel to gravel-cobble substrate. *al*

Heavy pigtoe (*Pleurobema taitianum),* in big rivers to medium rivers and creeks, moderate gradient, pools and riffles, substrate in Alabama River is composed of gravel with large component of coarse sand. *al*

Alabama heelsplitter (*Potomilus inflatus),* big rivers to medium rivers, moderate gradient, pools, riffles. Substrate includes soft stable bars of sand mud, silt and sandy-gravel. *al*

Georgia pigtoe (*P. hanleyianum),* in medium rivers, high gradient, medium gradient, riffles with sand-gravel-cobble bottom. *uco lco t*

Critical habitat has been designated for the Georgia pigtoe and two snail species described below, the Interrupted rocksnail and the Rough hornsnail (50 CFR Part 17, FR Volume 75, Number 211, Pages 67512-67550).

For the Georgia pigtoe, Habitat Unit 1 includes the channel of the Conasauga River from the confluence of Minnewaga Creek, Polk County, Tennessee, downstream to U.S. Highway 76. Unit 2 includes the channel of Terrapin Creek from Alabama Highway 9 downstream to the confluence with the Coosa River and the Coosa River from Weiss dam downstream one mile below the confluence with Terrapin Creek, in Alabama. Unit 3 includes the channel of Hatchet Creek from Clay County Road 4, Clay County Alabama downstream to the Confluence with Swamp Creek.

Primary constituent elements include: (i) Geomorphically stable stream and river channels and banks (channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation). (ii) A hydrologic flow regime (the magnitude, frequency, duration, and seasonality of discharge over time) necessary to maintain benthic habitats where the species is found. Unless other information becomes available, existing conditions at locations where the species occurs will be considered as minimal flow requirements for survival. (iii) Water quality (including temperature, pH, hardness, turbidity, oxygen content, and chemical constituents) that meets or exceeds the current aquatic life criteria established under the Clean Water Act (33 U.S.C. 1251–1387). (iv) Sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae. (v) The presence of fish host(s) for the Georgia pigtoe (species currently unknown). Diverse assemblages of native fish will serve as a potential indication of presence of host fish.

Interrupted rocksnail (*Leptoxis foremani),* in shoals, riffles and reefs of small to large rivers. Attached to bedrock, boulders, cobble and gravel. *uco, lco*

For the Interrupted rocksnail, Habitat Unit 1 includes the Coosa River from Weiss Dam downstream to one mile below the confluence with Terrapin Creek, Alabama . Unit 2 includes the channel of the Oostanaula River from the confluence of the Conasauga and Coosawattee Rivers, downstream to Georgia Highway 1 Loop, in Georgia. Unit 3 includes the Coosa River fro Jordan Dam downstream to Alabama Highway 111 in Alabama.

Primary constituent elements include: (i) Geomorphically stable stream and river channels and banks (channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation). (ii) A hydrologic flow regime (the magnitude, frequency, duration, and seasonality of discharge over time) necessary to maintain benthic habitats where the species is found. Unless other information becomes available, existing conditions at locations where the species occurs will be considered as minimal flow requirements for survival. (iii) Water quality (including temperature, pH, hardness, turbidity, oxygen content, and chemical constituents) that meets or exceeds the current aquatic life criteria established under the Clean Water Act (33 U.S.C. 1251–1387). (iv) Sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae.

Rough hornsnail (*Pleurocera foremani),* in creeks and medium rivers of moderate gradient, on gravel, cobble, bedrock and mud. Tolerant of silt deposition. *lco*

For the Rough hornsnail, Habitat Unit 1 includes the Coosa River from Jordan Dam downstream to the confluence with the Tallapoosa River, in Alabama. Unit 2 includes Yellowleaf Creek from the confluence of Morgan Creek downstream to one mile below Alabama Highway 25 in Alabama.

Primary constituent elements include: (i) Geomorphically stable stream and river channels and banks (channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation). (ii) A hydrologic flow regime (the magnitude, frequency, duration, and seasonality of discharge over time) necessary to maintain benthic habitats where the species is found. Unless other information becomes available, existing conditions at locations where the species occurs will be considered as minimal flow requirements for survival. (iii) Water quality (including temperature, pH, hardness, turbidity, oxygen content, and chemical constituents) that meets or exceeds the current aquatic life criteria established under the Clean Water Act (33 U.S.C. 1251–1387). (iv) Sand, gravel, cobble, boulder, or bedrock substrates with low to moderate amounts of fine sediment and attached filamentous algae.

Lacy elimia (*Elimia crenatella),* snail on the mainstem of the Coosa River found on rock shoals and gravel bars, under rock slabs in small streams with a moderate current and sand, gravel, cobble substrates. *lco*

Round rocksnail (*Leptoxis ampla),* in creeks high gradient, medium rivers in riffles and shoals over gravel cobble or rocky substrate in strong currents. *lco*

Painted rocksnail (*Leptoxis taeniata),* in medium rivers, high gradient to moderate gradient, riffles. Shoals and riffles of rivers on substrates of cobble and gravel. More tolerant of siltation than other snails. *lco, al*

Flat pebblesnail (*Lepyrium showalteri),* in clean smooth stones in rapid current of small to large high gradient river shoals. *lco al*

Cylindrical lioplax snail (*Lioplax cyclostomaformis),* found in isolated mud deposits under large rocks and boulders in rapid currents of streams and river shoals. *lco, al*

Tulotoma snail (*Tulotoma magnifica),* in large rivers to creeks, low-moderate gradient, riffles. Riffles and shoals on the undersides of large rocks. *lco al*

Plants

Georgia rockcress (*Arabis Georgiana),* is found in found in several counties throughout the ACT basin on dry, shallow soils on rocky bluffs and sandy loam soils on eroding river banks. There would be no erosion or disturbance to river banks as a result of the proposed action.

Critical Habitat for the Georgia rockcress has been proposed (50 CFR Part 17, No. 177, Pages 56506-56540. Eighteen critical habitat units are proposed and occur in scattered locations through the ACT and ACF River basins in Alabama and Georgia. Primary constituent elements include (i) Large river bluffs with steep and/or shallow soils that are subject to localized disturbances that limit the accumulation of leaf litter and competition within the Lower Gulf Coastal Plain, Upper Gulf Coastal Plain, Red Hills, Black Belt, Piedmont, and Ridge and Valley Physiographic Provinces of Georgia and Alabama. (ii) Well-drained soils that are buffered or circumneutral generally within regions underlain or otherwise influenced by granite, sandstone, or limestone. (iii) A mature, mixed-level canopy with spatial heterogeneity, providing mottled shade and often including species such as eastern red cedar, America hophornbeam, chinquapin oak, white ash, southern sugar maple, and redbud with a rich diversity of grasses and forbs characterizing the herb layer. (iv) Intact habitat with mature canopy and discrete disturbances, buffered by surrounding habitat to impede the invasion of competitors.

Harperella (*Ptilimnium nodosum),* is found in Cherokee, DeKalb, and Marshall Counties, Alabama and several counties in Georgia outside the ACT basin. Occurs in three habitat types: rocky/gravelly shoals or cracks in bedrock outcrops beneath the water surface in clear, swift-flowing streams (usually in microsites that are sheltered from rapidly moving water); edges of intermittent pineland ponds or low, wet savannah meadows on the Coastal Plain; and granite outcrop seeps. In all habitat-types, the species occurs in a narrow range of water depths; it is intolerant of deep water and of conditions that are too dry. However, the plants readily tolerate periodic, moderate flooding. It is listed as occurring in the upper Coosa River.

Kral's water-plantain (*Sagittaria secundifolia),* is found in several counties in the Coosa River basin including Cherokee, Clay, Coosa, DeKalb, Lawrence, and Winston, Alabama, and Chatooga, Georgia. Preferred habitat is undammed riverine reaches on exposed shoals or rooted among loose boulders in sands, gravels, and silts in pools up to 1 m deep. Stream bottoms are typically narrow and bounded by steep slopes.

Green pitcher-plant (*Sarracenia oreophila*) is found in several ACT counties including Calhoun, Cherokee, DeKalb, Etowah, Jackson, Marshall, and St. Clair, Alabama and Gilmer, Towns, and Union, Georgia. Habitat is composed of sandstone streambanks, mixed oak or pine flatwoods and seepage bogs. All habitats are generally moist, but the species does not occur in areas where flooding is regular and soils are continually saturated. In bogs the species grows away from continually flooded areas about two feet above summer water levels.

Alabama canebrake pitcher plant (*Sarracenia rubra alabamensis),* is found in Autauga, Chilton and Elmore Counties in the lower Coosa and upper Alabama River watersheds. Preferred habitat includes sandhill seeps, swamps, and sloping bogs along the Fall Line Hills that divide the upper Coastal Plain and Piedmont physiographic regions. Soils are deep peaty sands or clays. The plants grow best exposed to full or nearly full sun. Historically, fire played an important role in maintaining the open character of these habitats.

Tennessee yellow-eyed grass (*Xyris tennesseensis*), occurs in several counties in Alabama and Georgia, including those in the Coosawattee, Etowah, and Coosa River basins. The species is found in open or thin canopy woods in gravelly seep-slopes or gravelly bars and banks of small streams, springs and ditches.

6. ENVIRONMENTAL BASELINE

As described in the Section 7 Consultation Handbook, the environmental baseline is a "snapshot" of a species' health at a specified point in time. It does not include the effects of the proposed action, but rather provides an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat (including designated critical habitat), and ecosystem, within the action area. The baseline includes anticipated effects of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process (cite handbook). The action under review is the USACE Update of the Water Control Manual for the ACT River Basin in Georgia and Alabama. In the case of an ongoing water project, such as the USACE projects in the ACT, the total effects of all past activities, including the effects of construction and past operation, current non-federal activities, and federal projects with completed section 7 consultations, form the environmental baseline. Based on the description given above, the environmental baseline also includes effects of the currently approved dredging operations and other navigation maintenance activities. The environmental baseline considers the effects of operating the basin-wide system of dams and reservoirs, regardless of owner, since completion of the last project in the ACT basin. There are a total of 18 dams on the mainstems of the Alabama, Coosa, and Tallapoosa Rivers, including those shown in Figure 1 plus the Carters Re-regulation Dam and the Thomson Weinman Dam. The Thomson Weinman Dam is a low head dam located approximately 10 miles downstream of Allatoona Dam which was previously used as a hydropower facility by the City of Cartersville and is now abandoned. The last project complete was Harris Dam owned by APC, located on the Tallapoosa River and was completed in 1983. The Affected Environment Section (Section 2) of the DEIS provides a detailed description of the actions influencing the condition of the environmental Baseline and that information is incorporated by reference. The affected environment, as described in the DEIS, for the proposed action includes the Alabama, Coosa and Tallapoosa Rivers and all areas in the basin from the headwaters downstream to the mouth of the Alabama River at its confluence with the Tombigbee River where it forms the Mobile River, and downstream to include the Mobile Bay.

7. EFFECTS ANALYSIS

This section is an analysis of the effects of the proposed action on the species and critical habitat. The previous "Environmental Baseline" section considers the effects of the past and current operations. This section addresses the future direct and indirect effects of implementing the proposed action.

7.1. FACTORS CONSIDERED

For the purposes of this BA we consider three principal components of the species' environment in the action area: channel morphology, flow regime, and water quality. Physical habitat conditions for the listed species in the action area are largely determined by flow regime, and channel morphology sets the context for the flow regime. Although channel morphology has changed relative to the pre-dam period in the river sections below the USACE projects, it is likely that the rate of change has slowed and it appears to have entered a somewhat dynamic equilibrium condition based on the maintenance needs of the navigation channel portions of the action area. We have no ability at this time to predict specific effects on channel morphology due to the influence of the proposed action on the flow regime. The proposed action relates to water management at federal projects in the ACT basin and includes limits on the extent to which the USACE alters basin inflow into the downstream river segments via operations of the ACT dams and reservoirs; therefore, the primary focus of this analysis is the flow regime of the rivers with and without the proposed action. Our analysis of flow regime and water quality alteration relative to the listed species and critical habitats considers the following factors based on the 1998 Consultation Handbook (USFWS 1998).

Proximity of the action: The proposed action may affect habitat occupied by all life stages of the listed species described above in the rivers below USACE projects. Portions of these rivers are also designated as critical habitat. The proposed action includes releases from USACE dams and may affect some of the species' life history stages and habitat features from as close as immediately below the dam to many miles downstream.

Distribution: The proposed action could alter flows in the rivers downstream of the USACE dams and alter freshwater inflow to Mobile Bay. The distribution of the various species considered is described in the Status of the Species section above. This analysis examines how the proposed action may variously affect different portions of the action area according to the distribution of the species and important habitat features in the action area.

Timing: The proposed action could alter flows in the rivers downstream of the USACE dams and alter freshwater inflow to Mobile Bay at all times of the year. It will reduce flows when increasing conservation storage in the ACT reservoirs and increase flows when decreasing conservation storage. Therefore, we examine how the proposed action may alter the seasonal timing of biologically relevant flow regime features in our analysis.

Nature of the effect: The proposed action will reduce flows when increasing conservation storage in the ACT reservoirs and increase flows when decreasing conservation storage. Flow regime and water quality may be affected by the actions. Therefore, we examine how the proposed action may affect the listed species and critical habitat elements through flow regime and water quality analyses focused on key locations in the basin.

Duration: This proposed action is a modification to the current operations at the USACE projects in the ACT River Basin and the operations described under the proposed action are applicable until revised or until another updated Water Control Plan is adopted. Although the duration of the proposed action is indefinite, the nature of its effects is such that none are permanent. The USACE can alter its reservoir operations at any time; therefore, flow alterations that may result from the proposed action will not result in permanent impacts to the habitat of any of the listed species. Therefore, we examine how implementation of the proposed action may alter the duration of high flows and low flows that are relevant to the listed species and critical habitats.

Disturbance frequency: The proposed action is applicable year round; therefore, changes to the flow regime and water quality parameters may occur at any time and/or continuously until such time as the proposed action is revised or until another updated Water Control Plan is adopted. Therefore, we examine how implementation of the proposed action may alter the frequency of high flows and low flows that are relevant to the listed species and critical habitats.

Disturbance intensity and severity: The proposed action may variously affect the flow regime depending on time of year, basin inflow, and conservation storage levels. Therefore, we examine how the proposed action affects the magnitude of high and low flow events relative to the baseline. However, for the species considered, the most relevant adverse effects are likely those that occur during low flow conditions due to exposure of aquatic habitat and organisms, desiccation of individuals, spawning areas and food sources, increased access by predators and associated changes in water quality.

7.2. ANALYSIS FOR EFFECTS OF THE ACTION

The Effects Analysis for the proposed action uses the HEC-ResSim Model to simulate flow operations in the ACT Basin. The DEIS impact analysis included HEC-5Q model simulations to evaluate the impacts of proposed alternative water management plans on long-term, system-wide, stream and reservoir water quality. This information is also used in the Effects Analysis to assess potential water quality changes resulting from the proposed action. Details about the ResSim model and 5Q model are provided below in the MODEL DESCRIPTION section.

We determine the future effect of project operations, as prescribed by the proposed action, by comparing the environmental conditions expected to occur under the proposed action to the environmental baseline. The flow regime of the environmental baseline is described using post-1983 flow records, because this period represents the complete hydrology of the current configuration of the ACT federal and non-federal reservoir projects that influence the river flows in the action area. The proposed action simulations were simulated utilizing the maximum contracted amounts for municipal and industrial (M&I) withdrawals from USACE reservoirs for all years and the maximum observed M&I and Agricultural demands (2006) for all other locations throughout the simulated period. Since consumptive demands in locations other than federal reservoirs are not controlled by the USACE and vary over time, we impose the highest observed consumptive demands as a conservative estimate of potential M&I demands. This conservative estimate represents a greater demand in most years than was actually observed.

As described above, the principal factor examined in determining effects for the proposed action is the flow regime in the rivers below USACE projects and how the flow regime affects habitat conditions for the listed species. Differences between the Baseline (observed flows) and proposed action simulated flow regimes are generally attributable to the USACE discretionary operations. However, it should be noted that some of the differences are also attributable to the conservative demand set utilized in the proposed action simulations. In many years this represents a higher consumptive demand than actually occurred in the observed Baseline flow regime. The observed Baseline flow regime also includes incremental changes in operation that have occurred at both federal and non-federal reservoirs over time due to maintenance at hydropower facilities, operations for public health and safety, and other discretionary operations. Except in very general terms, it is not possible to describe a single set of reservoir operations that apply to the entire post-1983 period. Although these operational anomalies are typically small in duration and magnitude, they can influence the analysis. Therefore, if the proposed action does not significantly differ from the Baseline, its effect on the species/habitat is considered to be a continuation of the Baseline effect, if any.

7.3. MODEL DESCRIPTION

HEC-ResSim

The HEC-ResSim model was used to simulate reservoir operations in the ACT Basin. HEC-ResSim is a state-of-the-art tool for simulating flow operations in managed systems. It was developed by the USACE Hydrologic Engineering Center (HEC) to aid engineers and planners performing water resources studies in predicting the behavior of reservoirs and to help reservoir operators plan releases in real time during day-to-day and emergency operations. This effects analysis used HEC-ResSim Version 3.2DEV "Build 3.2.1.15R" (USACE, 2014). The label "DEV" means that the software is undergoing final testing before distribution as an official version.

HEC-ResSim has a graphical user interface designed to follow Windows® software development standards. The model's interface can be learned without extensive tutorials. Familiar data entry features make model development easy, and localized mini plots graph the data entered in most tables so that errors can be seen and corrected quickly. A variety of default plots and reports, along with tools to create customized plots and reports, facilitate output analysis.

HEC-ResSim provides a realistic view of the physical river/reservoir system using a map-based schematic. The program's user interface allows the user to draw the network schematic as a stick figure or as an overlay on one or more geo-referenced maps of the watershed. HEC-ResSim represents a system of reservoirs as a network composed of four types of physical elements: junctions, routing reaches, diversions, and reservoirs. By combining those elements, the HEC-ResSim modeler is able to build a network capable of representing anything from a single reservoir on a single stream to a highly developed and interconnected system like that of the ACT Basin. A reservoir is the most complex element of the reservoir network and is composed of a pool and a dam. HEC-ResSim assumes that the pool is level (i.e., it has no routing behavior), and its hydraulic behavior is completely defined by an elevation-storage-area table. The real complexity of HEC-ResSim's reservoir network begins with the dam.

Most federal reservoirs are authorized by Congress to operate for one or more of the following purposes: flood risk management, power generation, navigation, water supply, recreation, and environmental quality. Those purposes typically define the goals and constraints that describe the reservoir's release objectives. Other factors that might influence the objectives include time of year, hydrologic conditions, water temperature, current pool elevation (or zone), and simultaneous operations by other reservoirs in a system. HEC-ResSim uses an original rule-based description of the operational goals and constraints that reservoir operators must consider when making release decisions.

To provide a potential range of flows that might be experienced while the proposed action scenario is in effect, the ResSim model simulates river flow and reservoir levels using a daily time series of unimpaired flow data as input for a certain period of record. Whereas basin inflow is computed to remove the effects of reservoir operations from observed flow, unimpaired flow is developed to remove the effects of both reservoir operations and consumptive demands from observed flow. The ResSim model imposes reservoir operations and consumptive demands onto the unimpaired flow time series to simulate flows and levels under those operations and demands. The unimpaired flow data set is the product of the Tri-State Comprehensive Study, in which the States of Alabama, Florida, and Georgia, participated.

The current unimpaired flow data set for the ACT represents the years 1939 through 2011. The USACE has not yet computed unimpaired flow for 2012-current day. Unimpaired flow computations require actual water use data from the two States and 2011 is the most recent year of this data provided to the USACE. For purposes of evaluating the proposed action, a 73-year unimpaired flow hydrologic period of record (1939 through 2011) was used to run the simulations. However, for the purposes of this effects analysis, we focus on the data from 1983 through 2011, because this period represents the complete hydrology of the current physical configuration of the ACT federal and private reservoir projects with an unimpaired flow computation.

HEC-5Q

An HEC-5Q model was developed for the Alabama-Coosa-Tallapoosa (ACT) Basin, in support of the Environmental Impact Statement (EIS) for the Water Control Manual Update Study. The purpose of the HEC-5Q model was to evaluate the impacts of proposed alternative water management plans on long-term, system-wide, stream and reservoir water quality. HEC-5Q was selected as a logical choice for the water quality model because it is compatible with HEC-ResSim and has been used for previous analyses of the ACT. HEC-5Q was aligned to work seamlessly with the HEC-ResSim model used to evaluate the water management alternatives.

The HEC-5Q modeling software used for the 1999 EIS was updated to implement a 6-hour time step to capture diurnal variations, which are often important. Then the 1999 HEC-5Q model of the ACT was extended to simulate the reservoirs as well as the rivers. The ACT HEC-5Q model was then adjusted to approximate the 2000 – 2008 observed data, followed by verification with additional observations at key locations. The revised HEC-5Q model was used to make preliminary observations using present-day water quality loading parameters applied to water levels and flows for four proposed water management alternatives. This work was performed in close coordination with water quality and water management technical staff members from Mobile District, Tetra Tech, the Hydrologic Engineering Center (HEC), and Resource Management Associates (RMA).

The water quality model was created to serve as a defensible screening tool to make relative comparisons of the impacts among various water management alternatives. The central focus of this effort was to enable the EIS team to evaluate the differences in water quality between alternatives over a growing season. The water quality model was evaluated for the 2000 – 2008 period to best capture the effects of recent population, water usage, and land use on pollution levels. The evaluation also ensured that the model exhibited the tendencies seen in the observed data and that it was sufficient to provide reasonable longterm estimates of water quality through the ACT system. The 2000 – 2008 period includes hydrologic conditions that were representative of "normal" instream flows, as well as years with high flow or drought conditions. Point (wastewater) and non-point (tributary streams) inflow quality was developed from database information compiled during this analysis.

HEC-5Q follows well-known solutions for key water quality values and does not attempt to simulate the concentration changes or transport of every type of constituent. Its one-dimensional nature limits the amount of input data and detail of results at sites. Although these limitations restrict the depth of analysis possible from its results, they also relieve heavy burdens regarding prohibitively long computation time and large input data requirements. The simplified inputs and calculation, and connection to HEC-ResSim, make possible relative comparisons of the water quality impacts of water management alternatives broadly across the basin. This comparison can also be used to evaluate effects to listed species in the action area. A detailed description of the HEC-5Q model is provided in Appendix D of the DEIS.

7.4. MODEL SIMULATIONS

HEC-ResSim

For purposes of evaluating alternative operational plans for the ACT water control plan update, a 73-year hydrologic period of record (1939 through 2011) was run using the HEC-ResSim hydrologic simulation software. The results of this simulation are presented in the DEIS. However, for the purposes of this Biological Assessment, we focused on the data from 1983-2011. To ensure comparisons that are most likely to reveal anthropogenic differences between the sets of environmental conditions (Proposed Action and Baseline) and not hydrologic differences between years, we use the output from the ResSim models for the period that is also represented in the baseline, which is 1983 through 2011 (29 years). Using only the latter 29 years of the ResSim results removes 44 years of model results from our analysis. However, the later 29 years of the simulated period appear to represent the most "critical" period for the model, as this is when reservoir levels and flows reach their lowest levels in the simulation. Further, the basin experienced below normal precipitation and basin inflow levels from 2006 through much of 2008 and record low conservation storage levels were recorded per calendar date in 2007 and 2008. A limitation of comparing modeled flows to observed flows is that the model uses a set of "rules" that result in some of the predicted outputs and they do not reflect the actual variation and special circumstances that may affect the observed data. For example, the model uses an assumed minimum flow at the Allatoona project of exactly 240 cfs while the observed normal fluctuation may be several percent higher or an emergency situation may require temporary suspension of releases.

HEC-5Q

HEC-5Q was used to simulate water quality in the ACT basin under the current reservoir operation and three alternative reservoir operation scenarios for the 2000 – 2008 period. The results are available in the DEIS and consist of time series, cumulative occurrence profiles, and longitudinal river profiles of occurrence of each water quality parameter (Water temperature, Dissolved Oxygen (D.O.), 5-Day Uninhibited BOD (BOD5U), Nitrate-Nitrogen (NO3-N), Ammonia-Nitrogen (NH3-N), Phosphate-Phosphorous (PO4-P), Municipal and Industrial Wastewater as Percent of Flow, Phytoplankton (Algae) reported as Chlorophyll a).

In the flow regime effects analysis, the simulated flows are compared to the observed flows during the 1983 through 2011 period. Observed water quality data for these various parameters is not consistently available for the locations analyzed in the effects section below. Therefore, we are using the current reservoir operation (No Action) simulation as a surrogate for the observed baseline. Although the HEC-ResSim model has been updated to simulate through 2011, the updated HEC-5Q water quality results for this same period are not yet available. The DEIS presents the water quality simulation results for the 2000-2008 period. We utilize these results to analyze the effects, if any, to listed species based on changes to water quality due to implementation of the proposed action.

7.5. GENERAL EFFECTS ON THE FLOW REGIME

The proposed action will not change the general nature of water management at USACE projects, i.e. it will continue to reduce flows when attempting to increase conservation storage (Spring) and increase flows when decreasing conservation storage (Fall). In addition to the discussion of effects of the proposed action on hydrology as presented in the DEIS, the effects of the proposed action on the flow regime is also evaluated by comparing the environmental conditions expected to occur under the proposed action to the environmental baseline.

Flow statistics were evaluated at four locations in the ACT. These include the Allatoona Dam tailwater, the Carters Re-Regulation Dam tailwater, the Alabama River at Montgomery, Alabama, and the Claiborne Dam tailwater. The first two were chosen because they represent the points where flows are most directly impacted by the USACE releases. Montgomery was chosen because it represents the point where the cumulative impact of upstream USACE releases and APC releases combine to provide water to the three run-of-river USACE projects downstream. As run-of-river projects, their releases are controlled by upstream releases. Claiborne was chosen because of its position as the most downstream point of water regulation in the ACT by USACE. This analysis is provided in Appendix A in Figures 1-52 and a discussion of the results is provided below.

This comparison of flows is related to each of the FACTORS CONSIDERED in section 7.2 above.

Proximity of the Action and Distribution. The USACE proposed action has the potential to most directly impact those species that are closest to the two upstream projects. This is because the proposed water management plan involves discretionary decisions primarily at the Allatoona and Carters projects and few if any water management decisions at the downstream run-of-river projects. The effects of releases from the upstream reservoirs become ameliorated due to the influence of other tributaries and the water management decisions made at the APC projects. As seen at the Montgomery and Claiborne locations (see discussion for those locations below) there are no significant differences between the baseline and proposed action flows. Although reservoir management decisions can affect river conditions many miles downstream of a reservoir, the effects to species would be expected to be reduced. Therefore, the Alabama River would be subject to less impacts than the areas immediately downstream of Allatoona or Carters dams. As an example, due to proximity, the Etowah darter, Amber darter and the other fish and mussel species discussed above are more likely affected by releases from headwater projects than species occurring lower in the system, such as the Alabama sturgeon. Discretionary operations at Allatoona Dam and Carters Dam have little to no potential effect on this species.

Timing, Nature of the effect, Disturbance Frequency, and Disturbance intensity and severity. Because these factors are largely interdependent and evaluated based on a comparison of the simulated proposed action and baseline flow regimes, they are discussed together. Figures 1-4 illustrate the average annual flows at Allatoona, Carters, Montgomery, and Claiborne expressed as frequency (% of days) that daily average discharge (cfs) values are exceeded during the years 1983-2011. The proposed action simulated flow regime closely approximates the environmental baseline flow regime at each location. We examine how the proposed action operations would affect the seasonal timing and magnitude frequency of the flow in the rivers at these four locations below.

Allatoona

Specific information regarding minimum flows or other flow regime requirements for the Etowah darter, the only potentially known species occurring downstream of Allatoona in the Etowah River, are not available. Figures 5-16 show the frequency (% of days) that daily average discharge (cfs) values are exceeded during the years 1983-2011 for each calendar month at the Allatoona Dam tailrace. When examined monthly, Allatoona releases under the proposed action typically resulted in higher flows during low flow conditions (flow values that are exceeded at least 75% of the time)as compared to the baseline. This is particularly evident during the winter through late spring months, which may be beneficial to spawning and rearing activities of aquatic species inhabiting the river below Allatoona Dam. Discharges during the summer months under the proposed action closely approximate those of the baseline and effects, if any, are considered a continuation of the baseline effect. Although the daily average flows evaluated under the baseline and proposed action conditions provide valuable insight into the seasonal distribution of flows below the dam, it is important to note that throughout the baseline period and under the proposed action the hydropower peaking operation at Allatoona Dam results in significant periods of time each day when only a minimum release of 240 cfs occurs. Interruptions to this hydropower peaking operation occur when high inflows above the dam necessitate continuous hydropower generation and/or releases through the spillway gates or when special operations or equipment malfunctions necessitate. Under the proposed action, like the baseline, hydropower generation would continue to occur at least 5 days per week throughout the year resulting in a daily minimum flow of 240 cfs and daily maximum releases of either 3,250 or 6,500 cfs, (at this time, only one hydropower unit is operational and therefore the maximum hydropower release is 3,250 cfs). During flood risk management operations, additional releases may also occur through the spillway gates. During most times of the year throughout the baseline period and under the proposed action, hydropower generation occurs roughly 4-8 hours per day resulting in a flow an order of magnitude higher than the 240 cfs minimum flow that occurs for the remaining 16-20 hours. This is a dominant feature of the aquatic environment below the Allatoona project that exists under both the baseline and proposed action. Therefore, the effects to listed species, if any, as a result of the proposed action are considered a continuation of the baseline effect. Releases from Allatoona Dam under the proposed action would not be expected to change flows in tributaries where species such as the Cherokee darter could occur. There would be no expected effects to listed species, such as the Amber darter and Etowah darter, occurring in river segments upstream of the dam..

<u>Carters</u>

Based on information available to USACE there is no specific information regarding minimum flows or other flow regime requirements for the species occurring downstream of Carters Dam in the Coosawattee River. Those species include Amber darter and the freshwater mussel species described in the Status of the Species/Critical Habitat section above. Species that are known to occur upstream of Carters Reservoir and potentially occurring downstream include the Blue shiner (also found in Alabama). Figures 17-28 show the frequency (% of days) that daily average discharge (cfs) values are exceeded during the years 1983-2011 for each calendar month at the Carters Dam tailrace. The proposed action provides flows closely approximating those observed in the baseline period. However, the proposed action typically resulted in higher flows during low flow conditions (flow values that are exceeded at least 75% of the time) as compared to the baseline. This is a result of the seasonal minimum flow schedule, developed in close coordination with the Service, incorporated into the proposed action. The background for the flow schedule stems from a series of letters (Service to USACE 19 June 2003, USACE to Service 15 August 2003) telephone calls and meetings proposing such a schedule in the context of informal Section 7 consultation. As described in Section 3, Proposed Action, when the reservoir level is in Zone 1 a seasonal minimal flow would be in place. When in Zone 2, a minimum discharge of 240 cfs would be in place. Table 2 below describes the monthly minimum flow schedule when operating in Action Zone 1, incorporated into the proposed action and the corresponding minimum flow requirement in place during the baseline period.

Table 2. Monthly Minimum Releases (cfs) at Carters Re-Regulation Dam for Proposed Action and Baseline in Action Zone 1[1]												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Proposed	660	790	865	770	620	475	400	325	250	275	350	465
Baseline	240	240	240	240	240	240	240	240	240	240	240	240

[1]Minimum Releases in Zone 2 is 240 cfs

The seasonal monthly flow schedule prescribed in the proposed action includes a provision for reducing the minimum flow requirement when the pool level enters Action Zone 2 in order to ensure maintenance of at least the 240 cfs release. This reduction in flows is typically realized during the warmer months of the year and accordingly results in slightly lower flows during drought events (flows exceeded at least 90% of the time) than occurred under the baseline during the summer months. The graphs show that for most months, the ability to meet the revised monthly minimum releases would be achieved about 95% of the time. Amber darter critical habitat occurs upstream of Carters dam but would not be affected by the proposed action. Conasauga logperch and its Critical Habitat are found upstream of Carters dam. Although the species potentially occurs below Carters it has not been reported and upstream populations and Critical Habitat would not be affected.

Montgomery and Claiborne

Alabama sturgeon is potentially found in the Alabama River from Montgomery downstream to below Claiborne. For the listed critical habitat the PCEs include "A flow regime (*i.e.*, the magnitude, frequency, duration, seasonality of discharge over time) necessary to maintain all life stages of the species in the riverine environment, including migration, breeding site selection, resting, larval development, and protection of cool water refuges (*i.e.*,tributaries)". There is no specific information regarding flow requirements for the species. Figures 29-52 show the frequency (% of days) that daily average discharge (cfs) values are exceeded during the years 1983-2011 for each calendar month at the Montgomery and Claiborne. In all months the simulated proposed action flow regime is nearly identical to the baseline flow regime with the exception of proposed action resulting in higher flows during drought periods (flows that are exceeded at least 90% of the time) than the baseline condition. This is likely a beneficial effect to the species. The proposed action flow regime is not expected to have any effect on the other PCE's including channel morphology, substrate or water temperatures.

It should be noted that because of the intervening APC reservoirs on the Coosa and contributing flows released from the APC Martin and Harris Reservoirs from the Tallapoosa River, the impact at Montgomery and Claiborne from the USACE operations at Allatoona and Carters would likely be overshadowed by any operational deviations by APC. For example this was observed during the 2007 drought when APC effectively cut flows at Montgomery by 57%. Flows in the Cahaba River where the Cahaba shiner is known to occur would remain unchanged by USACE discretionary operations.

For other potentially affected species, including Wood stork, West Indian manatee and Red belly turtle there is no information relating to flow regimes (timing, distribution, duration, etc.) that would allow more refined determinations of affects. Therefore, since the proposed action flow regime is consistent with the baseline flow regime, effects, if any, are considered to be a continuation of the baseline effect.

In order to further evaluate the disturbance intensity and severity, we focus on the most extreme low and high flow events at each of the locations. Figures 53-60 show the average daily flow from 1983-2011 that is exceeded at least 90% of the time (extreme low flow) and 10% of the time (extreme high flow) under both the baseline and simulated proposed action flow regimes at each of the four locations.

Figure 53 presents average daily flows at Allatoona at the 90% exceedance rate for the calendar year. As these flows would be exceeded 90% of the time, they represent low flows that could be expected during drought conditions. In general, the figure shows that the proposed action would result in higher low flows than the baseline during the December-May time period and approximately equal flows during other parts of the year.

Figure 54 presents average daily flows at Allatoona at the 10% exceedance rate for the calendar year. As these flows would be exceeded only 10% of the time, they represent high flows. The general pattern of high flow events is consistent between the two flow regimes. However, the proposed action simulation does result in somewhat lower magnitude high flow events during the summer and fall months. This is most notable during the month of October when the proposed action includes a reduction in hydropower production related to the step down guide curve that is not present in the baseline condition.

Figure 55 presents average daily flows at Carters Re-Reg at the 90% exceedance rate for the calendar year.. In general, the figure shows that the proposed action would result in higher low flows than the baseline during the entire year. During the months of June and September, the proposed action results in slightly lower low flow conditions than occur in the baseline for these same months. However, the difference in flow values during these two months is generally only 50-150 cfs.

Figure 56 presents average daily flows at Carters Re-Reg at the 10% exceedance rate for the calendar year. The proposed action simulation and observed flow regimes are generally consistent throughout the calendar year, with the proposed action resulting in occasionally higher spring flow spikes and slightly lower summer and fall high flow events.

Figure 57 presents average daily flows at Montgomery at the 90% exceedance rate for the calendar year.. The proposed action simulation and observed flow regimes are generally consistent throughout the calendar year, with the proposed action consistently resulting in slightly higher low flows. The improvements in lower flows realized under the proposed action would be a beneficial effect to listed species. Higher flows during low-flow conditions would allow greater mobility during spring migrations. This would benefit species such as the Alabama sturgeon as well as host fish species for listed mussels in the Alabama River.

Figure 58 presents average daily flows at Montgomery at the 10% exceedance rate for the calendar year.. With respect to high flows, the proposed action simulation and observed flow regimes are essentially identical throughout the calendar year.

Figure 59 presents average daily flows at Claiborne at the 90% exceedance rate for the calendar year.. The proposed action simulation and observed flow regimes are generally consistent throughout the calendar year, with the proposed action consistently resulting in slightly higher low flows. This is most evident during the spring and early winter. Higher flows during low-flow conditions would allow greater mobility during spring migrations. This would benefit species such as the Alabama sturgeon as well as host fish species for listed mussels in the Alabama River.

Figure 60 presents average daily flows at Claiborne at the 10% exceedance rate for the calendar year.. With respect to high flows, the proposed action simulation and observed flow regimes are essentially identical throughout the calendar year.

Of the plant species discussed in STATUS OF SPECIES only Krals water plantain and Harparela are aquatic or living directly in the riverine environment. Neither occur directly in the mainstream of ACT Rivers and would therefore likely not be effected. Other plant species including Georgia rockcress, Green pitcher plant, Alabama canebrake pitcher plant and Tennessee yellow-eye grass live in close proximity to the rivers throughout the ACT basin, but there is little likelihood that the proposed action would have effects on river banks or wetlands in which they occur due to the overall similarity of flow regimes when the proposed action is compared to the baseline.

The flow regime analysis indicates that effects, if any, as a result of implementing the proposed action are generally a continuation of the baseline effect, with the exception of the proposed action resulting in beneficial effects to some of the flow dependent factors. These beneficial effects are generally attributable to the drought plan and seasonally varying minimum flow from the Carters Re-Regulation dam, both of which the Service has expressed support for in the Draft Fish and Wildlife Coordination Report.

7.6. GENERAL EFFECTS ON WATER QUALITY

The overall effect of the Proposed Action Alternative on water quality would be expected to be negligible. A full discussion of water quality impacts is found in Section 6.1.2 of the DEIS. State agencies would continue to apply adaptive management techniques to more precisely define the ACT system’s assimilative capacity. Water quality is closely tied to flow conditions, and based on the discussion above, the proposed operational changes in the Proposed Action Alternative would be expected to have little effect on water temperature, DO, phosphorous and nitrogen levels, chlorophyll *a* levels in the ACT Basin. A discussion of the HEC-5Q water quality simulation results is provided below. As described in the Model Description section, this analysis is summarized from the DEIS and compares the no action simulation to the proposed action simulation.

Water Temperature

Modeled results indicate that especially during low-flow conditions, there would be some locations with either slightly higher or lower water temperatures compared to the current operation. In the Alabama River at the confluence of the Coosa and Tallapoosa Rivers median water temperatures during low-flow periods are predicted to increase by as much as 1.8 °F (DEIS Figures 6.1-54).

The river reach immediately downstream of Allatoona Reservoir and Carters Reservoir would be expected to experience slightly decreased median water temperatures during periods of dry weather. Implementing a phased guide curve at Allatoona Reservoir and reducing hydropower during fall drawdown would be expected to have little effect on water temperatures in the lake and in reaches downstream. In the Etowah River from Allatoona Dam downstream to the Coosa River, median water temperatures would be expected to be slightly less than the No Action Alternative. Those slightly decreased water temperatures during dry periods from the No Action Alternative would be expected to have a negligible effect on aquatic species. During periods of drought, median water temperatures downstream of Carters Reregulation Dam are predicted to decrease by 0.9 °F immediately downstream of the dam (DEIS Figure 6.1-58).

Dissolved Oxygen

The proposed operational changes in the Proposed Action Alternative would be expected to have variable results on dissolved oxygen (DO) levels depending on flow conditions and location. The greatest changes in median DO would be expected during drought conditions. The timing and quantity of flow influence the system's ability to assimilate oxygen-demanding pollutants that results in changes in DO. As shown in Table 6.1-7 of the DEIS, most modeled locations would see dry-weather changes in DO from -0.05 to 0.05 milligrams per liter (mg/L), compared to current conditions, essentially constituting no change. Below Allatoona Reservoir, there would no change in DO (DEIS Figure 6.1-63), below Carters Reservoir (DEIS Figure 6.1-64) there would be a predicted decrease in DO of about 0.1 mg/L during extreme drought years. On the Alabama River (DEIS Figure 6.1-70) above R.F. Henry there would be DO decreases up to 0.5 mg/L from the current condition, during drought years, and further downstream to Claiborne Lake there would be varying results from slight DO decreases of <0.5 mg/L to slight increases of up to < 0.5 mg/L. Although the predicted variability would see some locations with slight DO decreases and others with slight increases, overall there would be no consistent pattern of changes and the proposed action is considered to have a negligible effect.

Phosphorous and Nitrogen

The proposed operational changes in the Proposed Action Alternative on would be expected to have variable results on phosphorous and nitrogen levels depending on flow conditions and location. The greatest changes would be expected during drought conditions. On the Coosa River during dry years, there would be a small overall increase in phosphorous (up to approximately 0.01 mg/L) (DEIS Figure 6.1-75) which is considered negligible. Other locations would see variable phosphorous levels generally in the range of ±0.1 mg/L. In the Coosawattee and Oostanaula Rivers during dry years, nitrogen is expected to increase up to approximately 0.1 mg/L downstream to the confluence with the Etowah River (DEIS Figure 6.1-73). Nitrogen on the Coosa River is elevated upstream of Weiss Lake less than 0.1 mg/L and then drops downstream of Weiss Lake. On the Alabama River, there would be negligible change from current conditions during the growing season.

Chlorophyll *a*

The proposed operational changes in the Proposed Action Alternative on would be expected to have variable results on chlorophyll *a* levels depending on flow conditions and location. Overall, the effect would be negligible. During periods of dry weather, there would be increased chlorophyll *a* levels upstream of Weiss Lake that would correspond with increases in phosphorous (DEIS Figure 6.1-98). At that location, chlorophyll *a* would be expected to increase about 10 mg/L compared to current operations during drought conditions.

7.7. CUMULATIVE EFFECTS

Cumulative effects of the proposed action on the environment in general are discussed in greater detail in Section 6.9 of the DEIS. Reference is made to that discussion; however, this discussion is focused on potential effects to federally listed threatened and endangered species.

Cumulative effects in ecosystems are defined as, “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions” (40 Code of Federal Regulations Parts 1500–1508). Constructing dams in riverine ecosystems abruptly, severely, and permanently alters many important physical and biological processes involving the movement of water, energy, sediments, nutrients, and biota. Eighteen dams impound mainstem channels of the ACT Basin, eliminating, fragmenting, and dramatically altering riverine habitat. USACE owns and operates five of those with APC owning the remainder. It should be re-emphasized that although the Alabama portion of the basin wide drought plan was developed in coordination with APC, USACE has no operational control over their water releases. During droughts, flows on the Coosa River below Weiss Dam (APC owned), the Tallapoosa River below Harris Dam (APC owned) and the Alabama River are almost entirely dependent on those APC releases from upstream projects.

As discussed in the DEIS there are a total of 280 other reservoirs in the basin that are 20 acres or larger in size with an average size of about 62 acres, totaling about 17,200 acres. These reservoirs which currently exist are part of the environmental baseline. Together they have had a cumulative effect on past alterations of flows in the ACT basin. In addition, there are several additional reservoirs that have been proposed and are in the process of planning or permitting by regulatory agencies (Table 2.1-6 of DEIS). There are a total of 56 locations (Table 2.1-20 DEIS) in the upper ACT basin in Georgia that have been deemed suitable by the State of Georgia for future water supply reservoir construction. Although the latter represent speculative ideas for future water supply, they cannot be completely discounted.

Water quality is influenced by a number of factors, including pollutant loads and in-stream flows (water quantity). Pollutant loads include both point and nonpoint sources of pollution. Point sources of pollution are regulated by USEPA through the NPDES under the Water Pollution Act of 1972 as amended. Nonpoint sources of pollution are also targeted to reduce pollutant loads under the Water Pollution Act of 1972 as amended through TMDLs. Enforcement of reductions is varied because of limited resources. As activities in the ACT Basin change from forested to urban land cover, especially in the headwaters areas of the Etowah River Basin, peak flows in the system are likely to increase and base flows in the system are likely to decrease. Urban land cover generally decreases interception of rainfall and infiltration, increasing stormwater runoff. That would be expected to result in less assimilative capacity during periods of low flow because base flow decreases. The combined total of all these activities including reservoirs past and future along with growing M&I demand, land use, point source discharge and resulting water quality could have future impacts on the environment in general and on listed species in particular.

USACE believes that the proposed action would not add to or worsen the cumulative effects described above. We believe that there would be no cumulative effect on listed species and for some factors as previously discussed would represent an improvement.

8. CONCLUSION

Based on the effects analyses described above, the USACE has determined that the proposed action may affect but is not likely to adversely affect Wood stork, West Indian manatee, Red hills salamander, Alabama red-belly turtle, Gulf sturgeon, Blue shiner, Etowah darter, Cherokee darter, Cahaba shiner, Amber darter, Goldline darter, Conasauga logperch, Alabama sturgeon, Finelined pocketbook, Orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, Ovate clubshell, Southern clubshell, Southern pigtoe, Triangular kidneyshell, Southern acornshell, Upland combshell, Alabama pearlshell, Southern combshell, Heavy pigtoe, Alabama heelsplitter, Georgia pigtoe, Interrupted rocksnail, Rough hornsnail, Lacy elimia, Round rocksnail, Painted rocksnail, Flat pebblesnail, Cylindrical lioplax snail, Tulotoma snail, Georgia rockcress, Harperella, Kral's water-plantain, Green pitcher-plant, Alabama canebrake pitcher plant and Tennessee yellow-eyed grass. It may affect but is not likely to adversely affect critical habitat for Amber darter, Conasauga logperch, Alabama sturgeon, Finelined pocketbook, Orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, Ovate clubshell, Southern clubshell, Southern pigtoe, Triangular kidneyshell, Southern acornshell, Upland combshell, Alabama pearlshell, Georgia pigtoe, Interrupted rocksnail, Rough hornsnail and Georgia rockcress.

Therefore, we request concurrence with this determination per section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq).

Appendix A

Figures

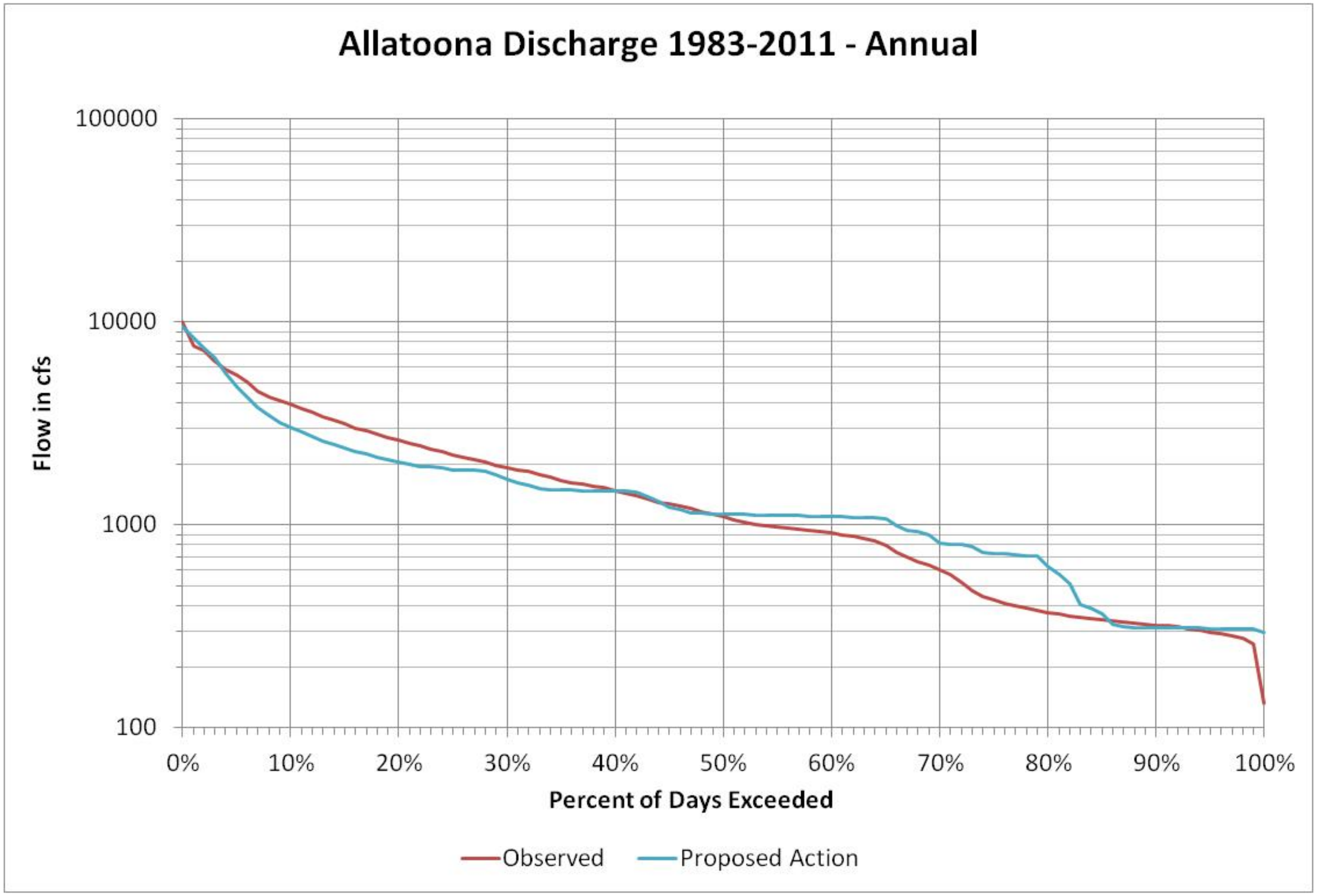


Figure 1. Comparison of Observed Data and Modeled Proposed Action for Average Annual Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

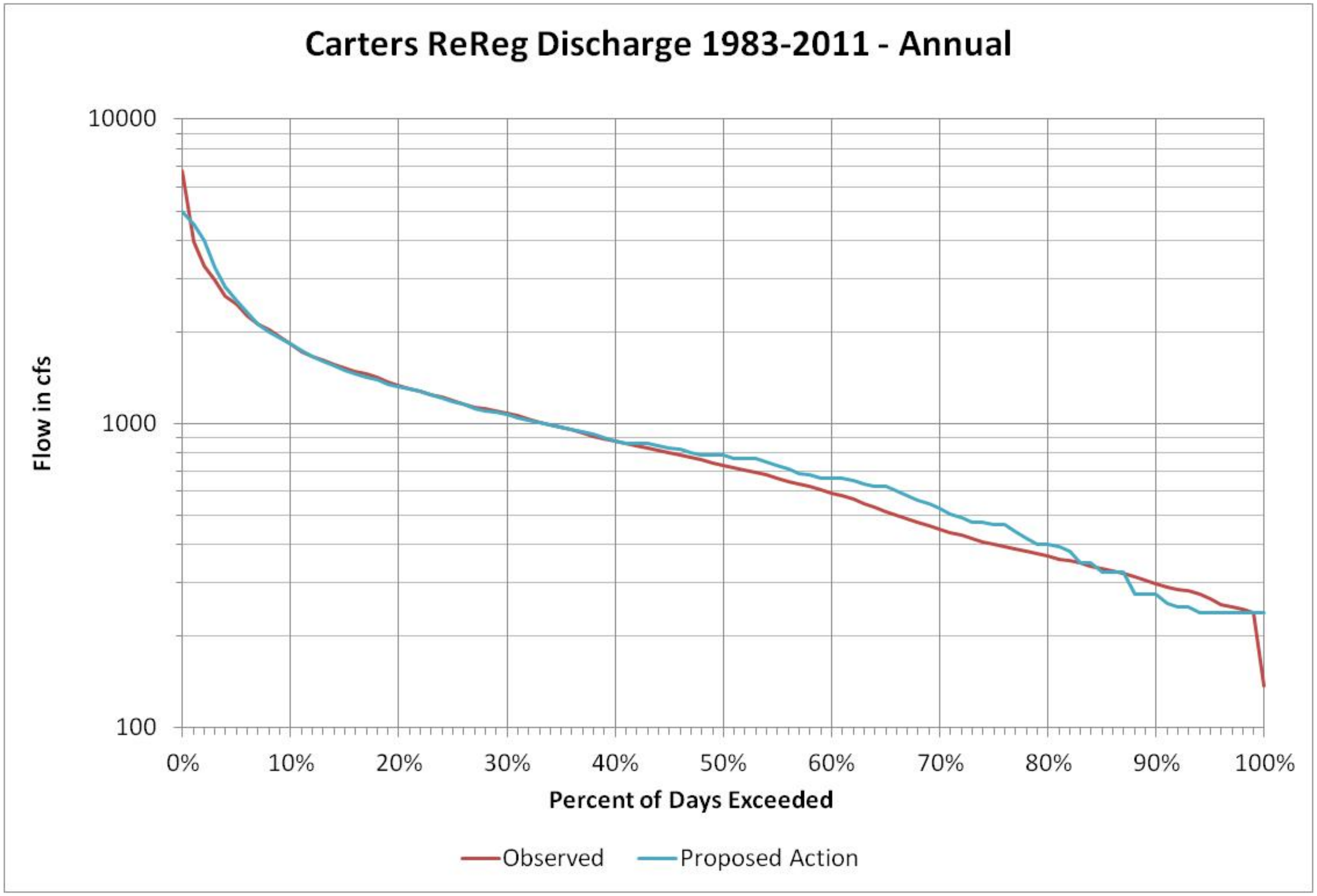


Figure 2. Comparison of Observed Data and Modeled Proposed Action for Average Annual Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

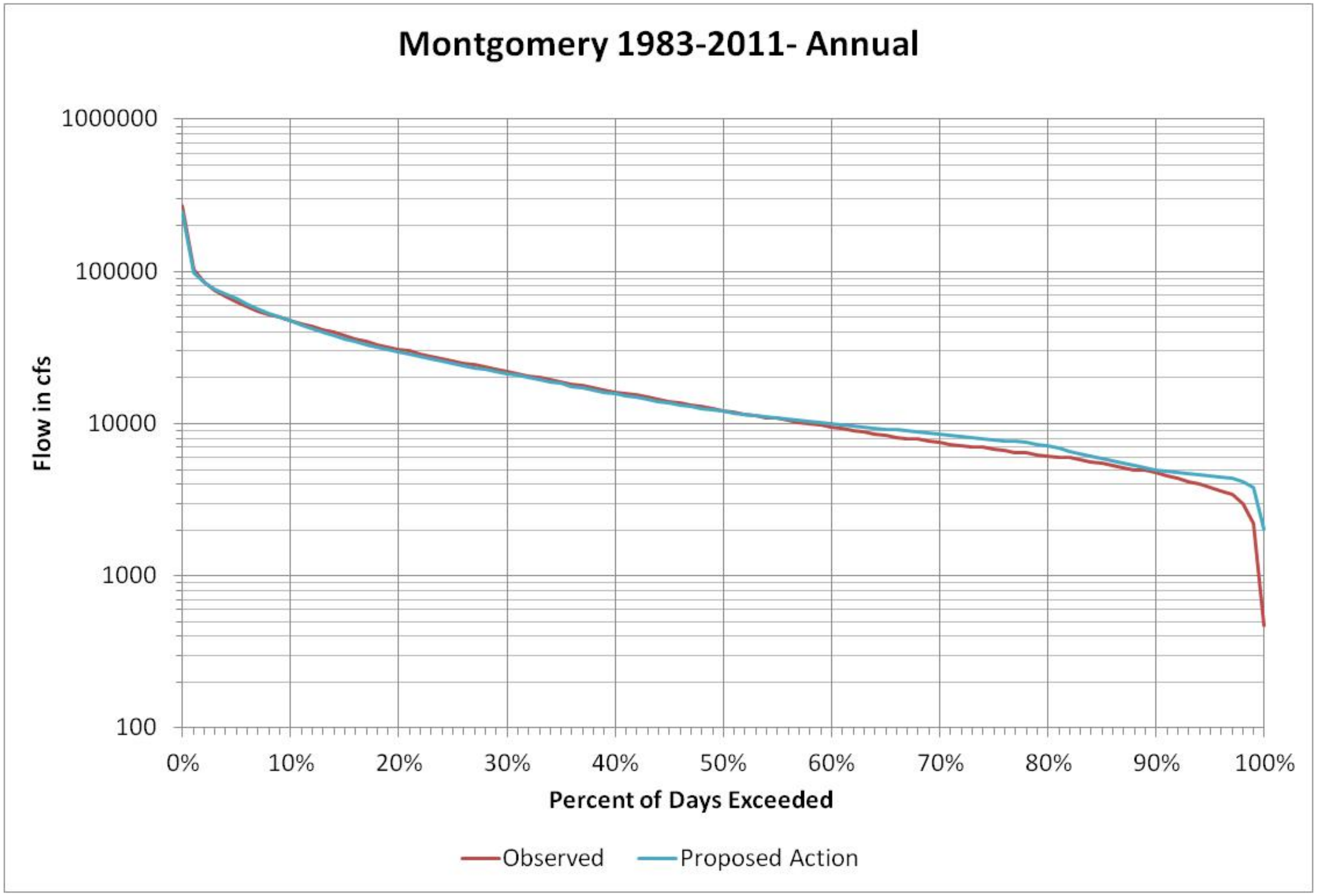


Figure 3. Comparison of Observed Data and Modeled Proposed Action for Average Annual Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

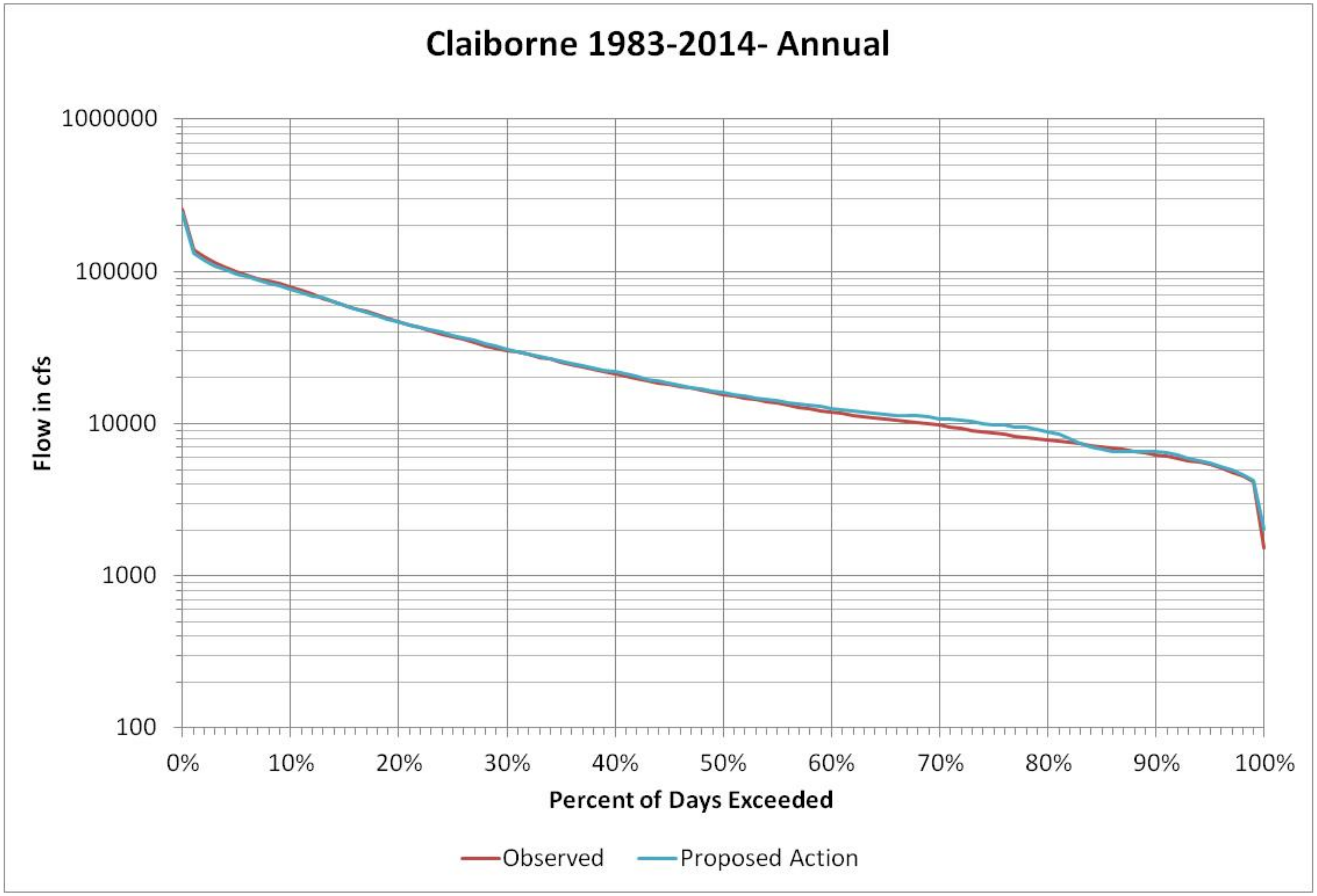


Figure 4. Comparison of Observed Data and Modeled Proposed Action for Average Annual Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

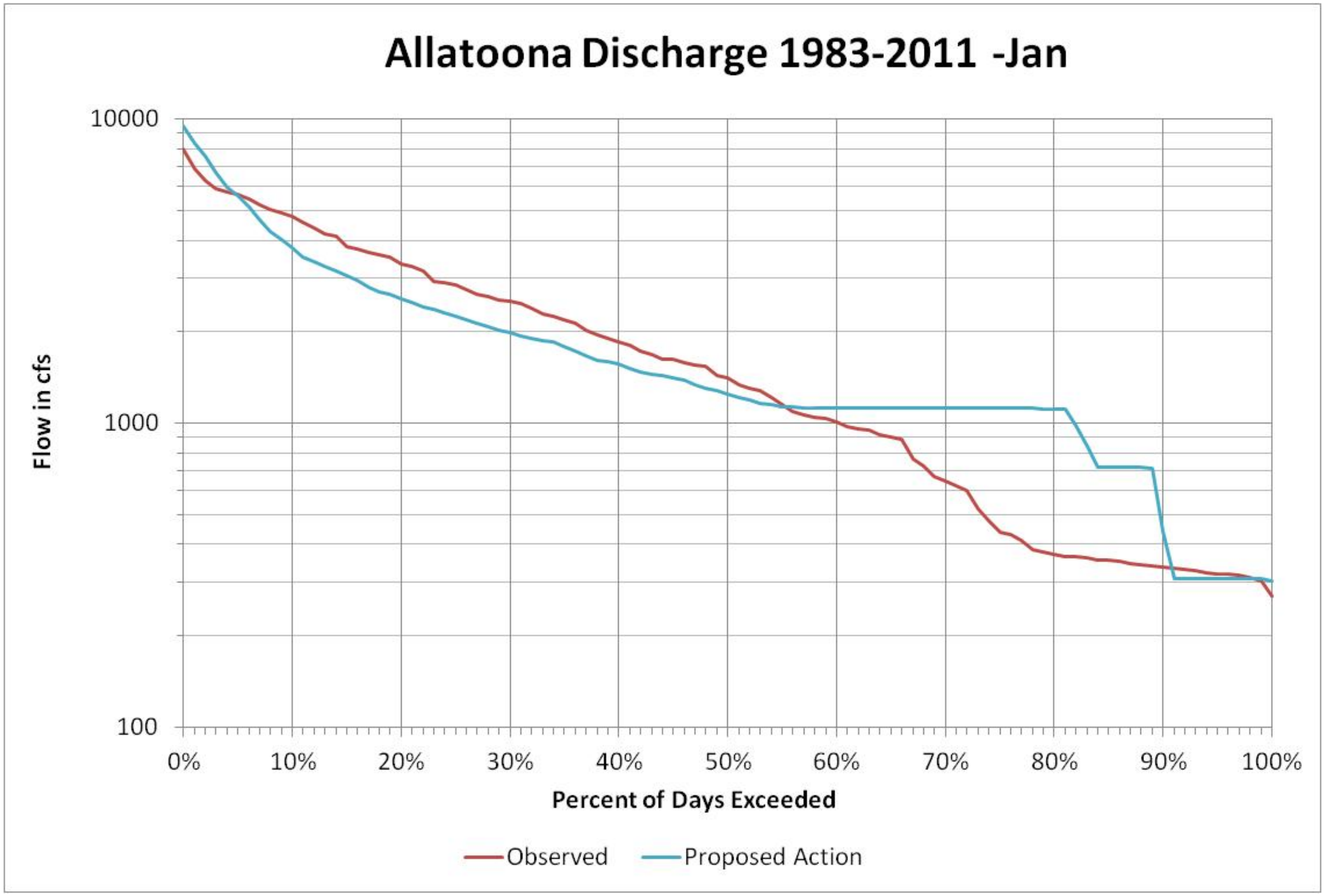


Figure 5. Comparison of Observed Data and Modeled Proposed Action for Average January Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

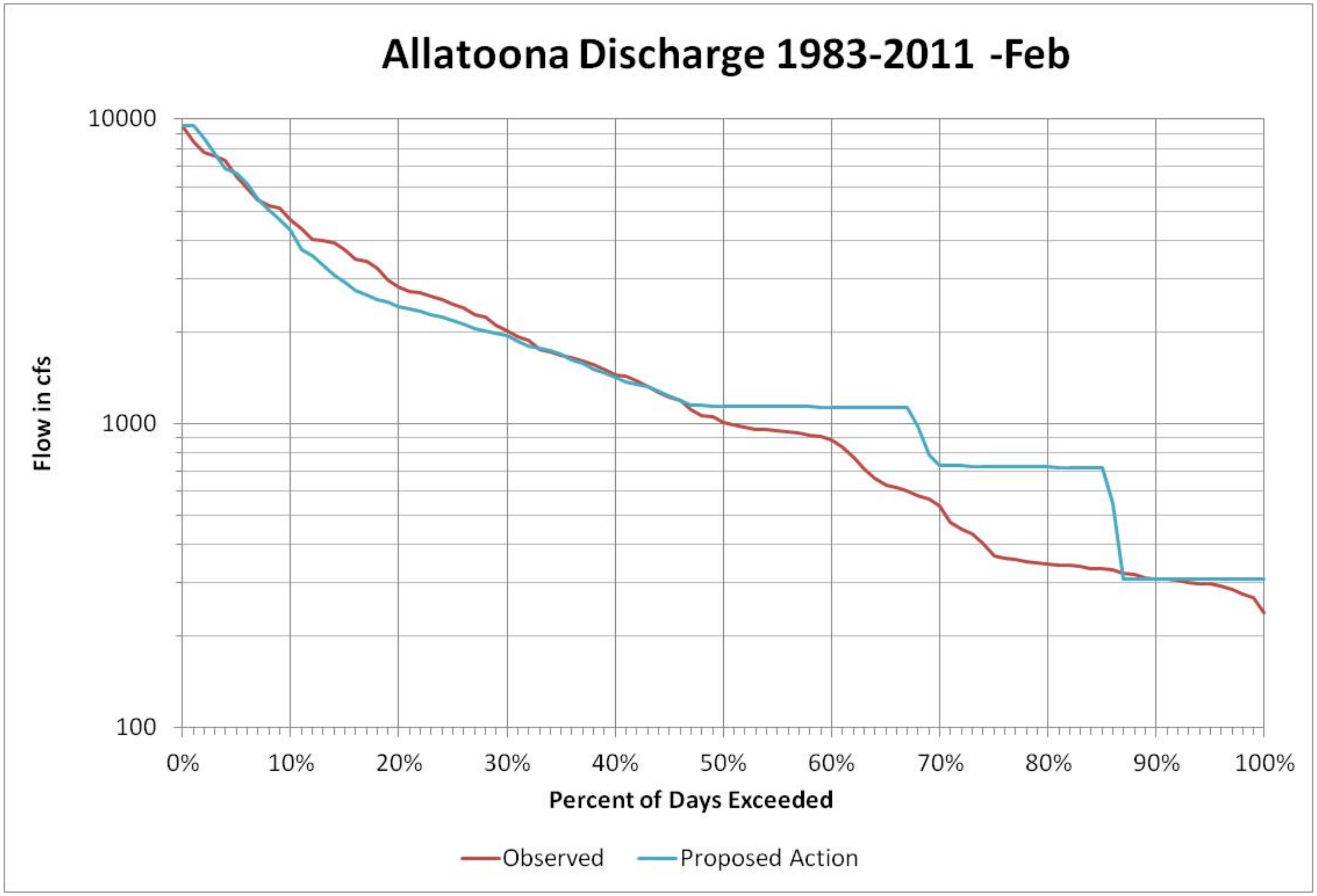


Figure 6. Comparison of Observed Data and Modeled Proposed Action for Average February Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

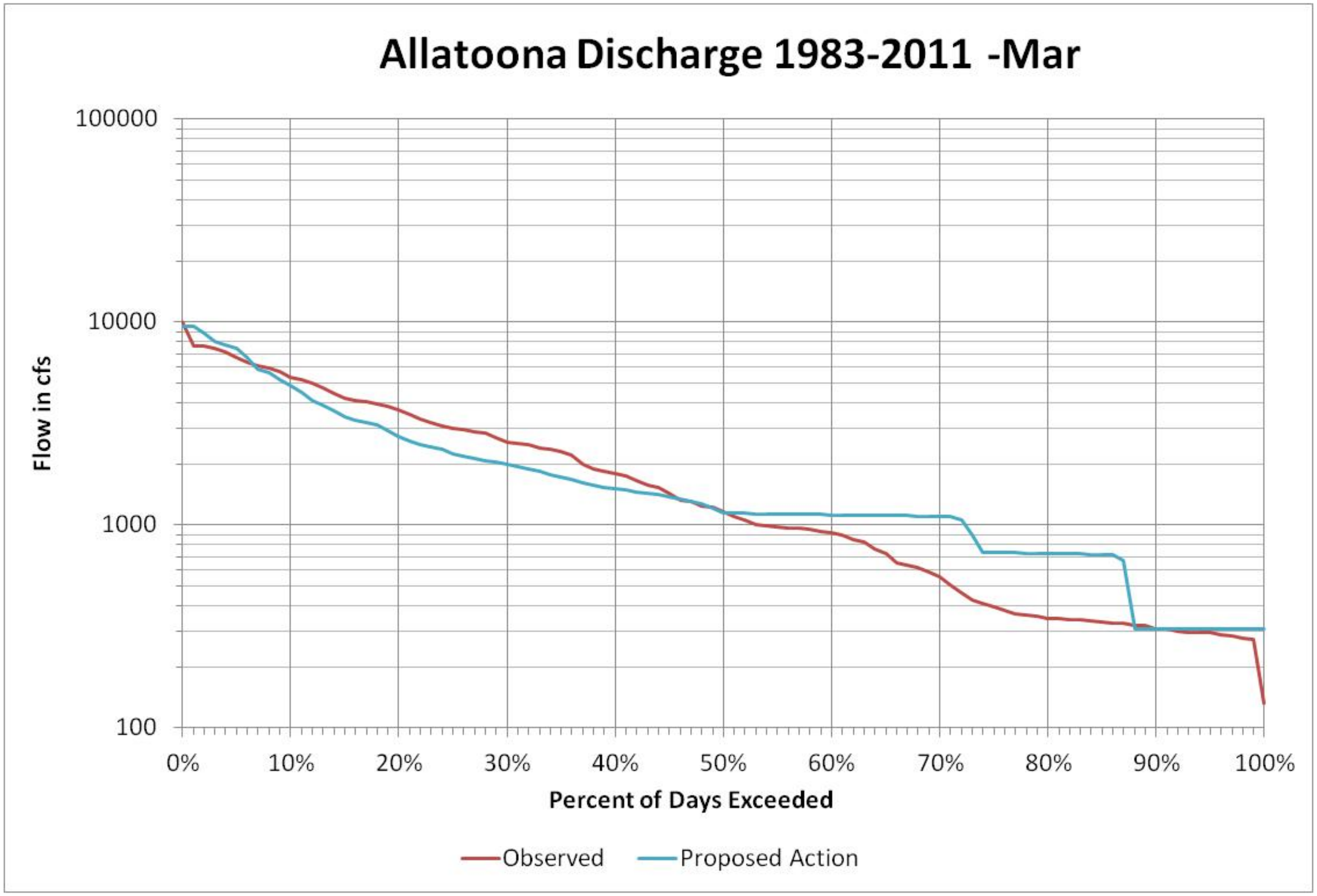


Figure 7. Comparison of Observed Data and Modeled Proposed Action for Average March Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

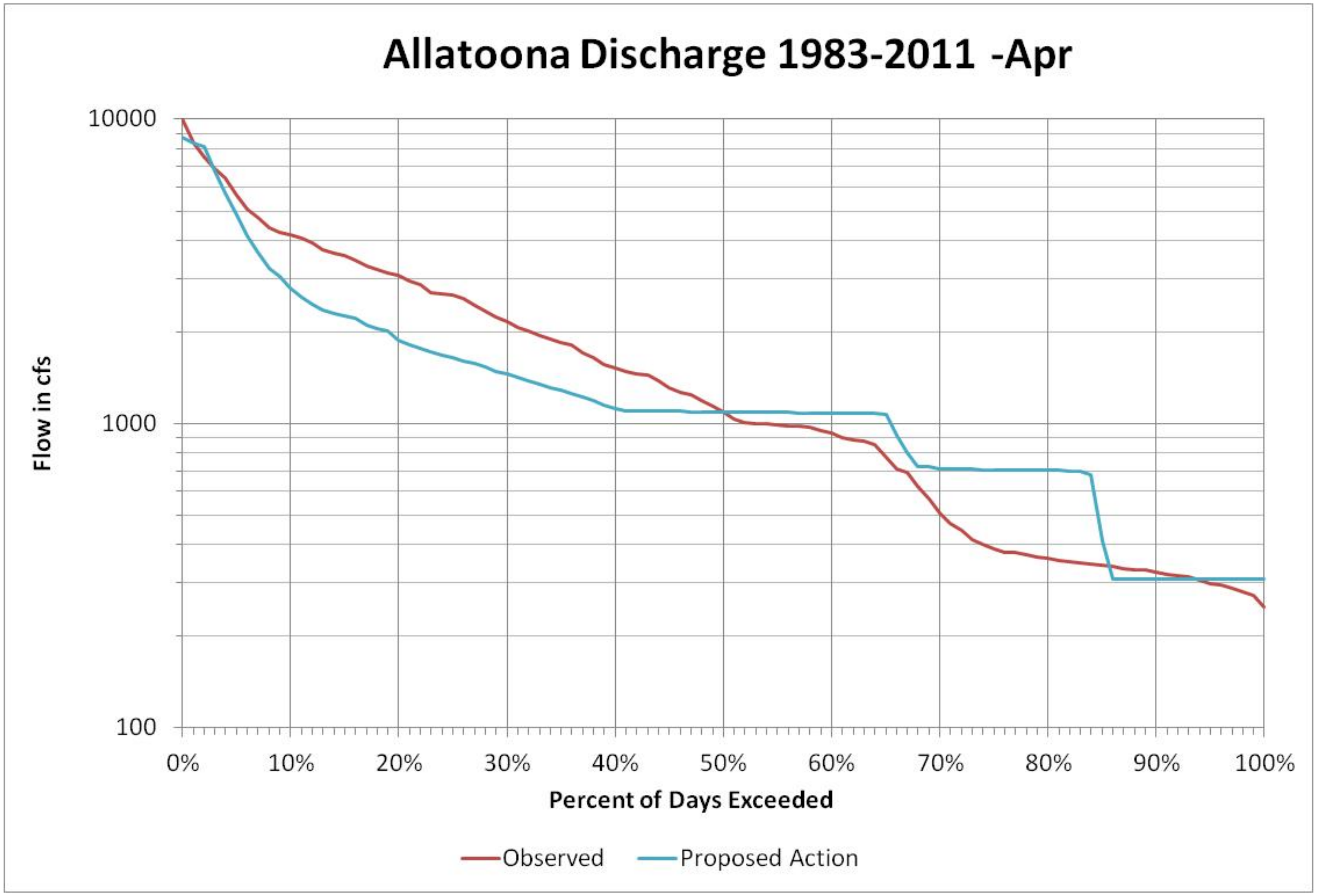


Figure 8. Comparison of Observed Data and Modeled Proposed Action for Average April Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

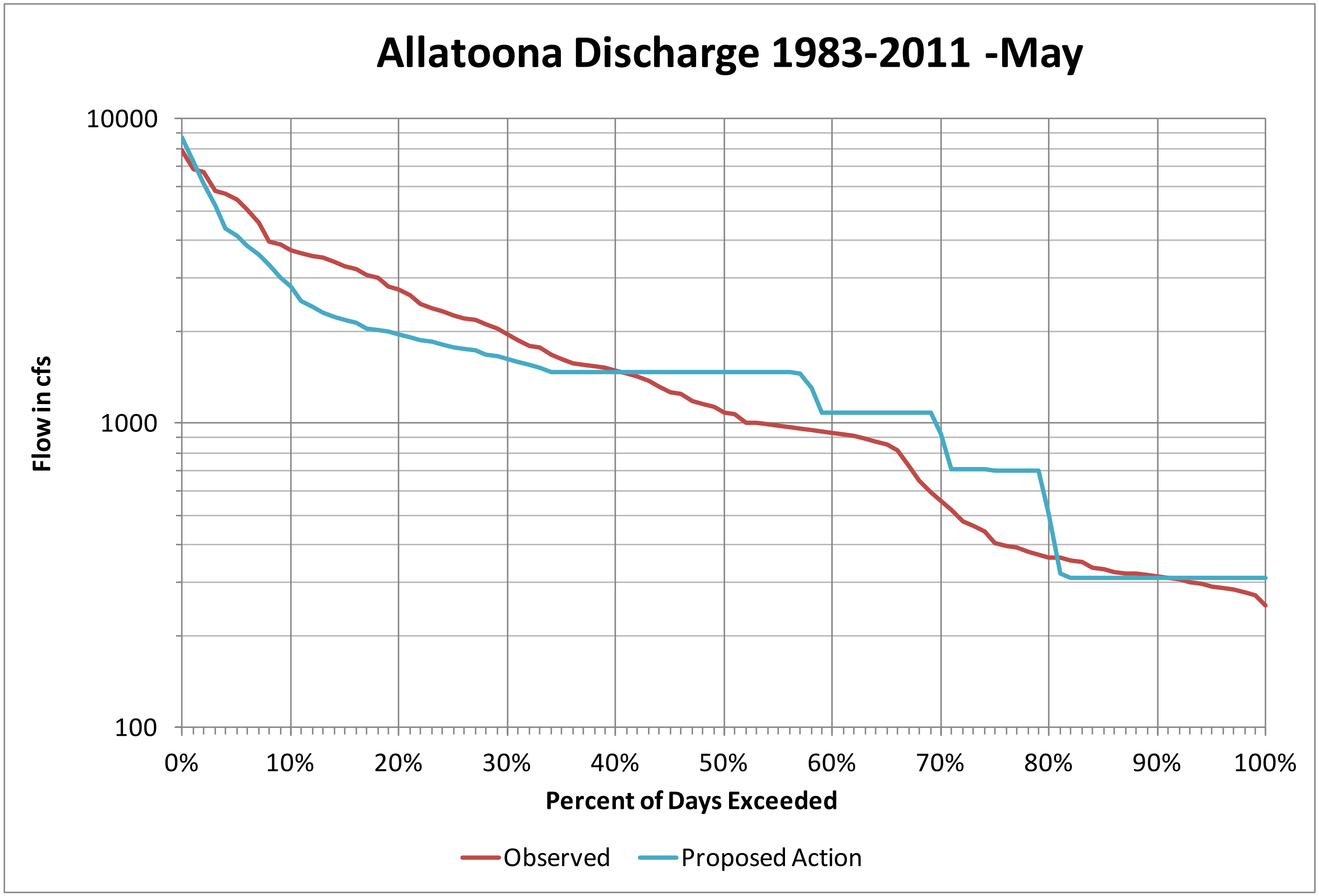


Figure 9. Comparison of Observed Data and Modeled Proposed Action for Average May Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

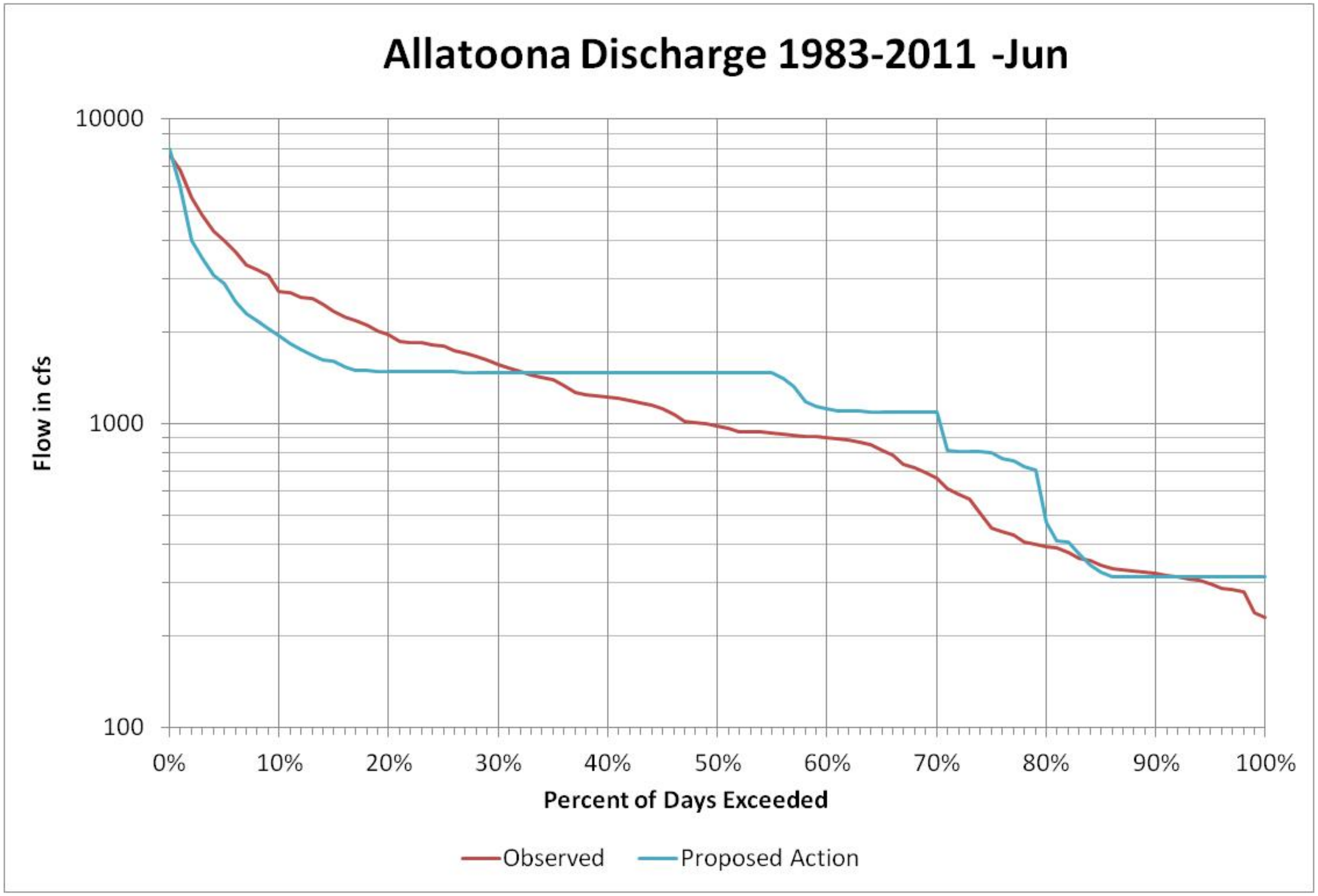


Figure 10. Comparison of Observed Data and Modeled Proposed Action for Average June Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

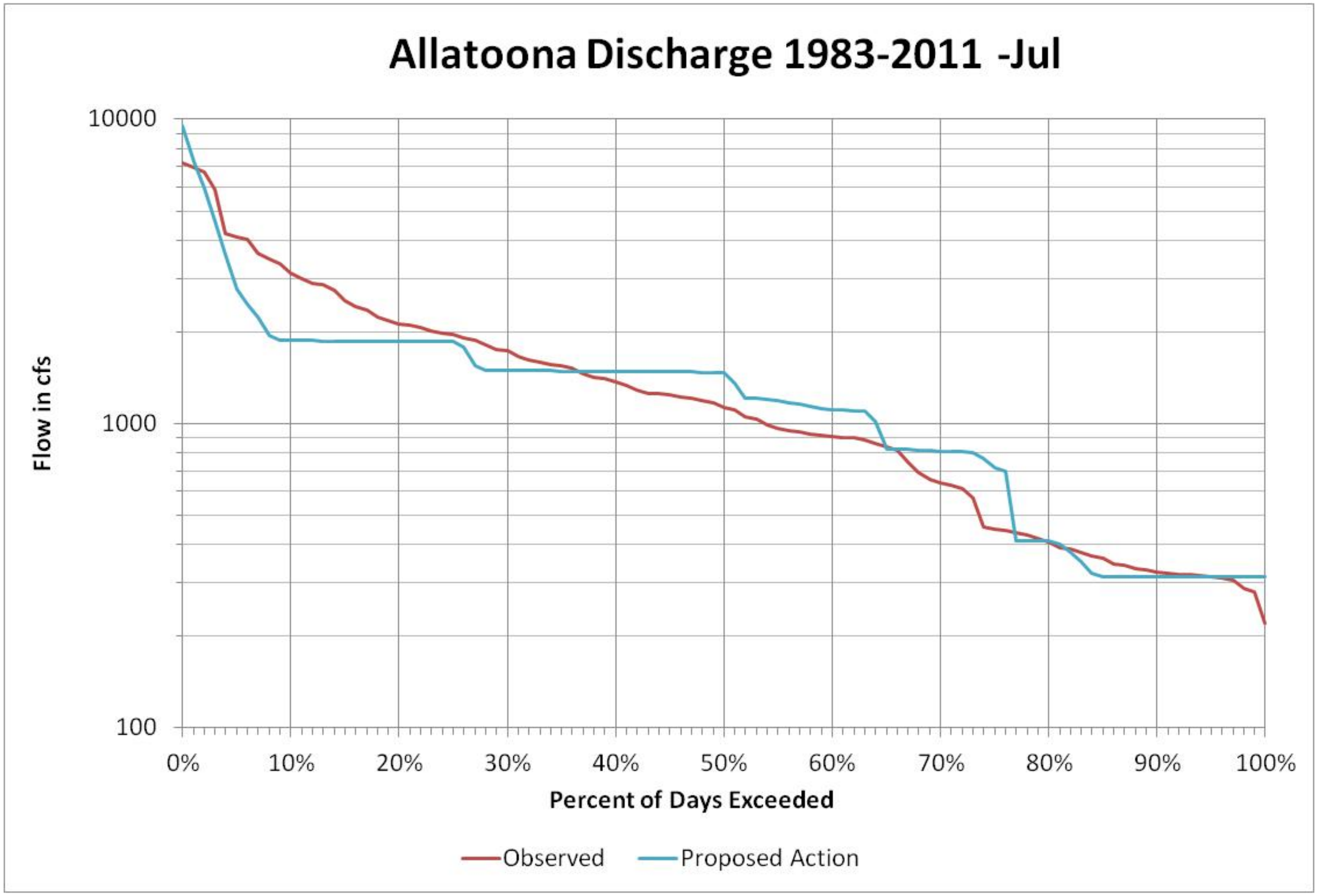


Figure 11. Comparison of Observed Data and Modeled Proposed Action for Average July Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

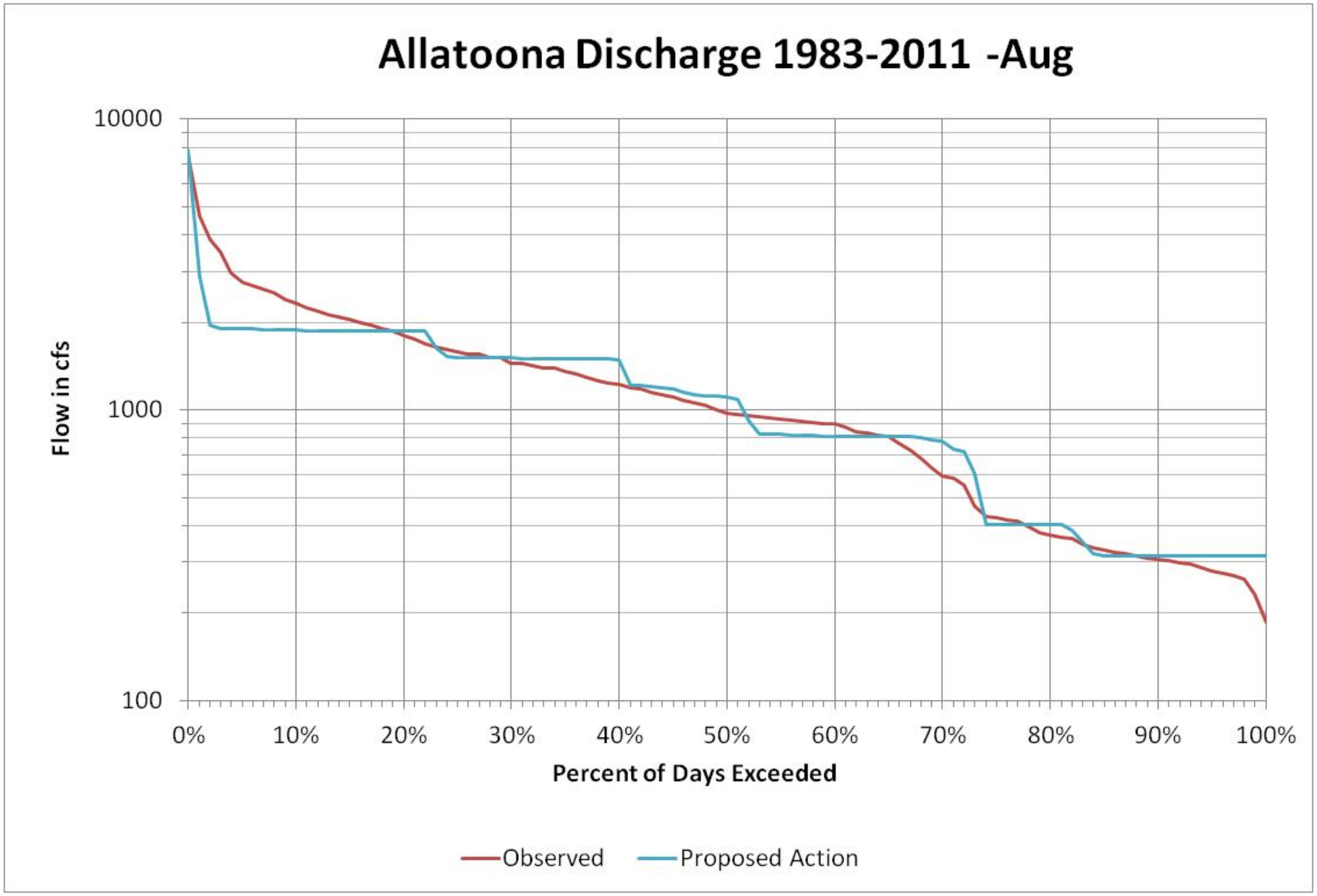


Figure 12. Comparison of Observed Data and Modeled Proposed Action for Average August Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

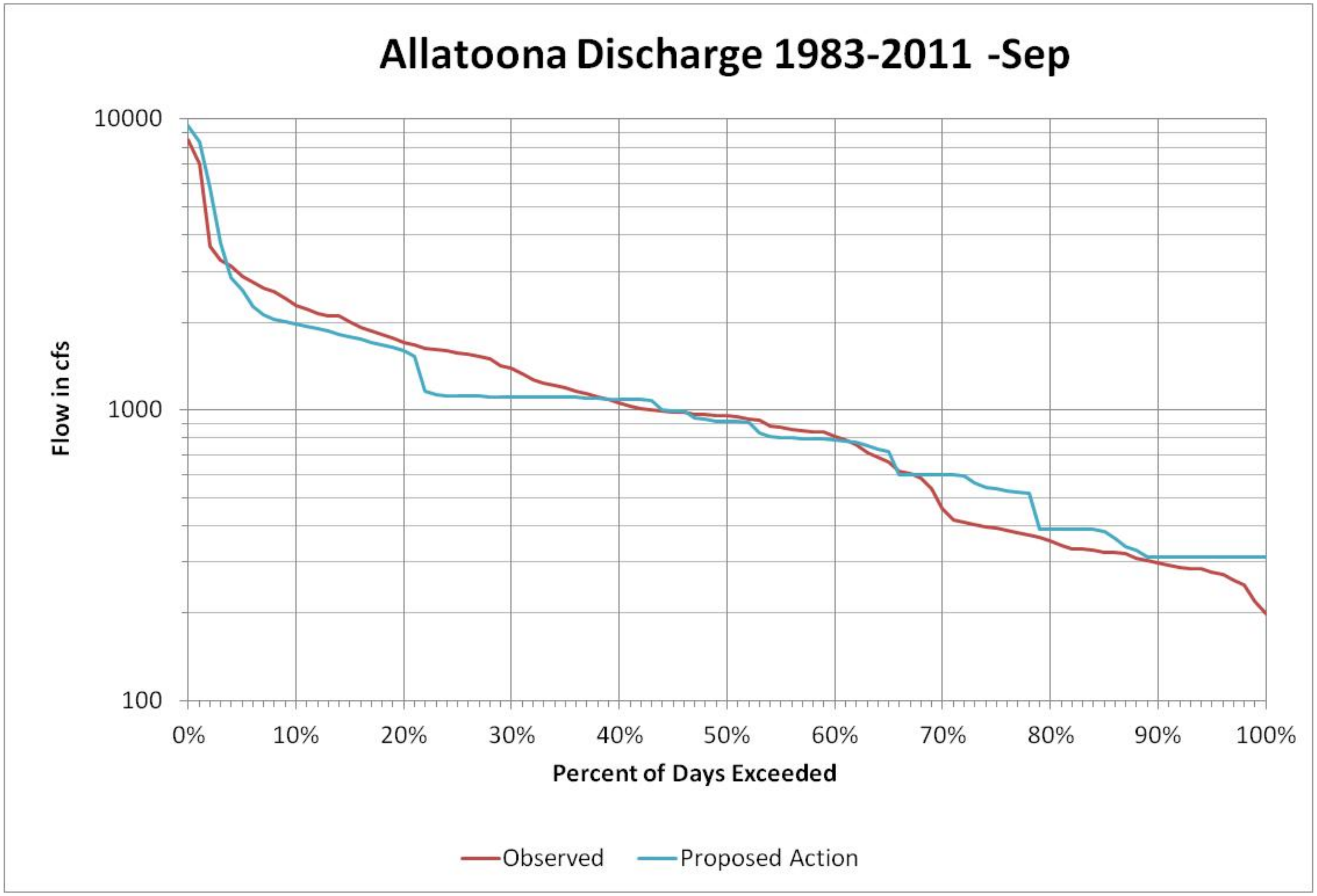


Figure 13. Comparison of Observed Data and Modeled Proposed Action for Average September Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

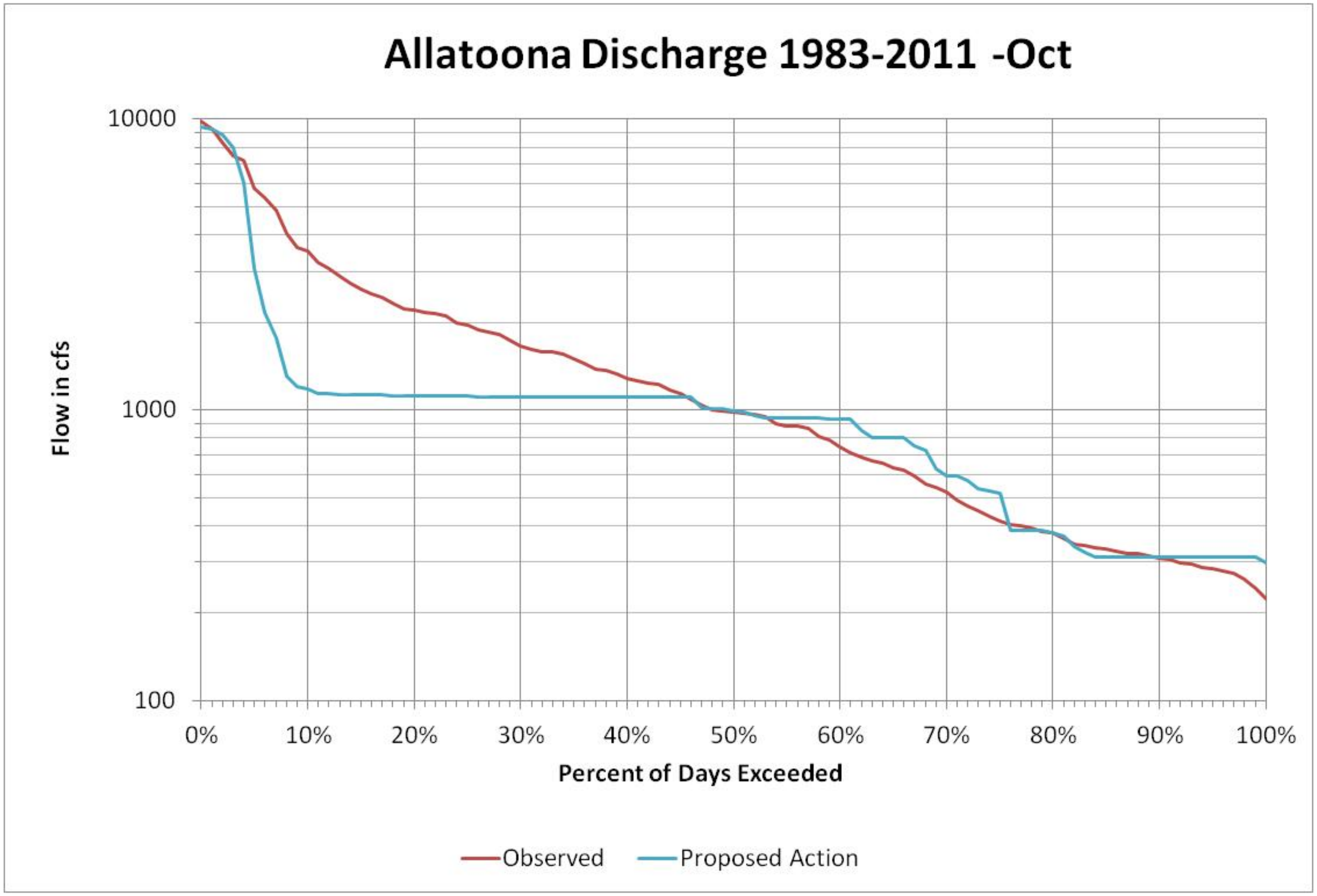


Figure 14. Comparison of Observed Data and Modeled Proposed Action for Average October Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

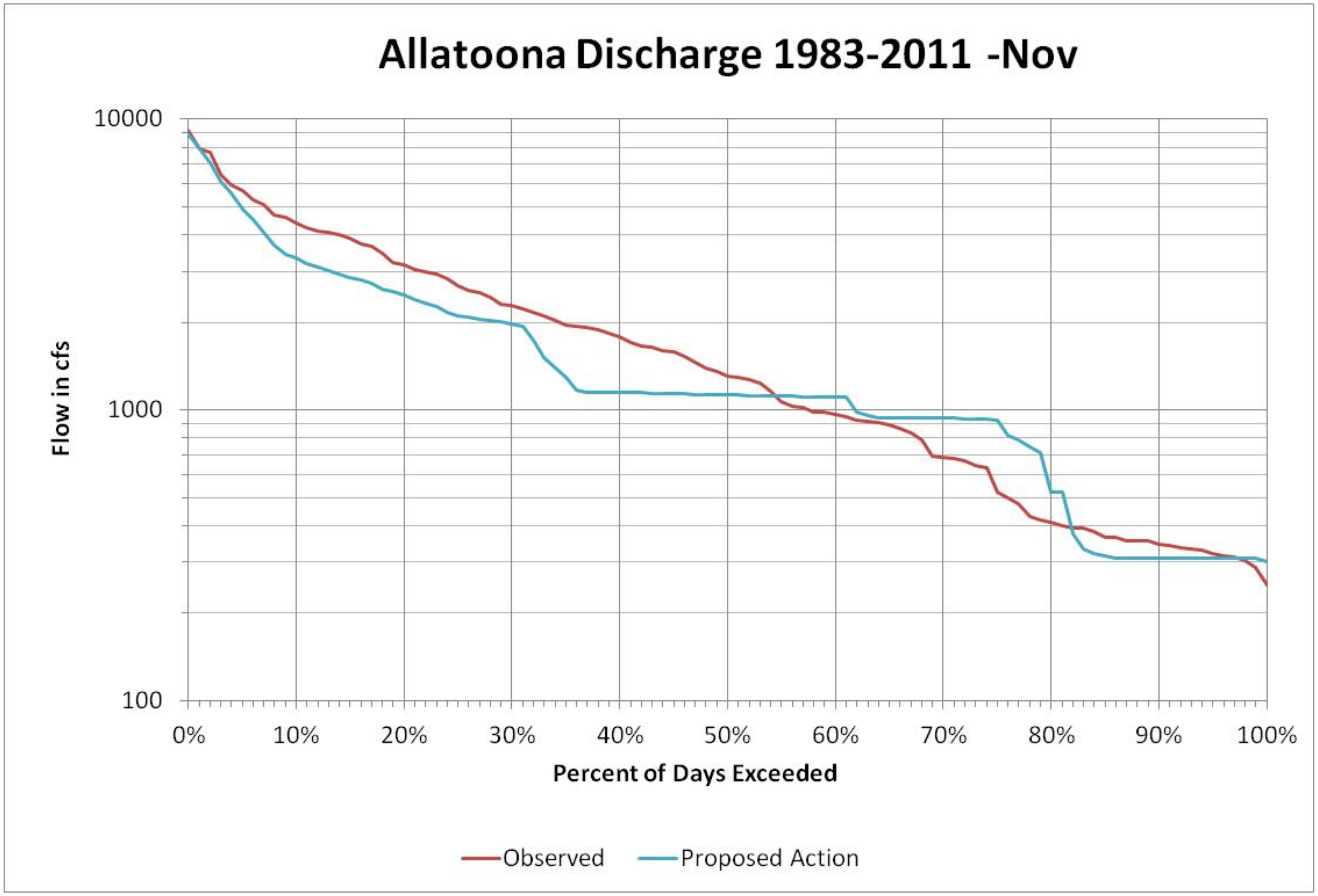


Figure 15. Comparison of Observed Data and Modeled Proposed Action for Average November Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

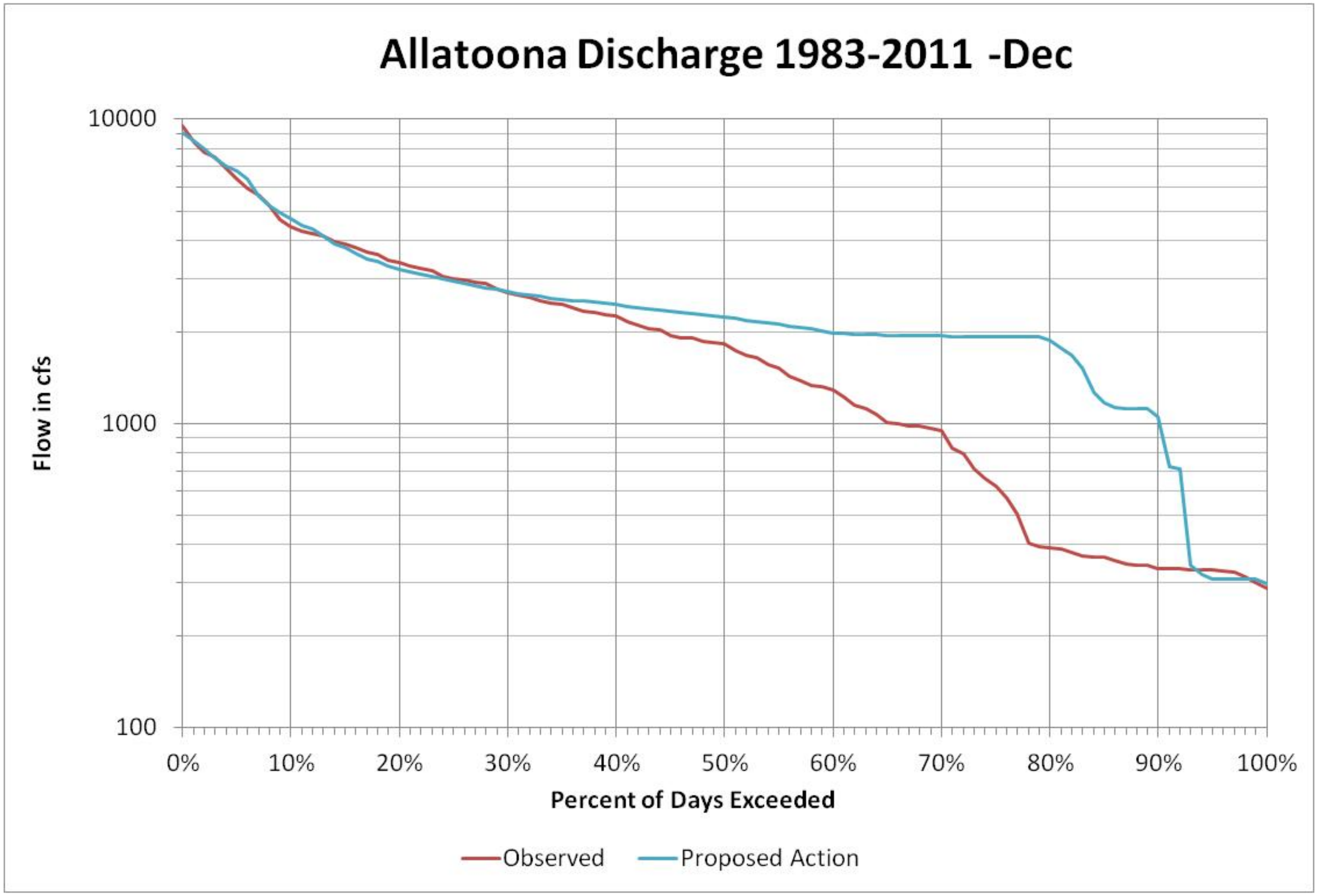


Figure 16. Comparison of Observed Data and Modeled Proposed Action for Average December Flow Duration in Percent Days Exceeded at the Allatoona Dam Tailrace, years 1983-2011.

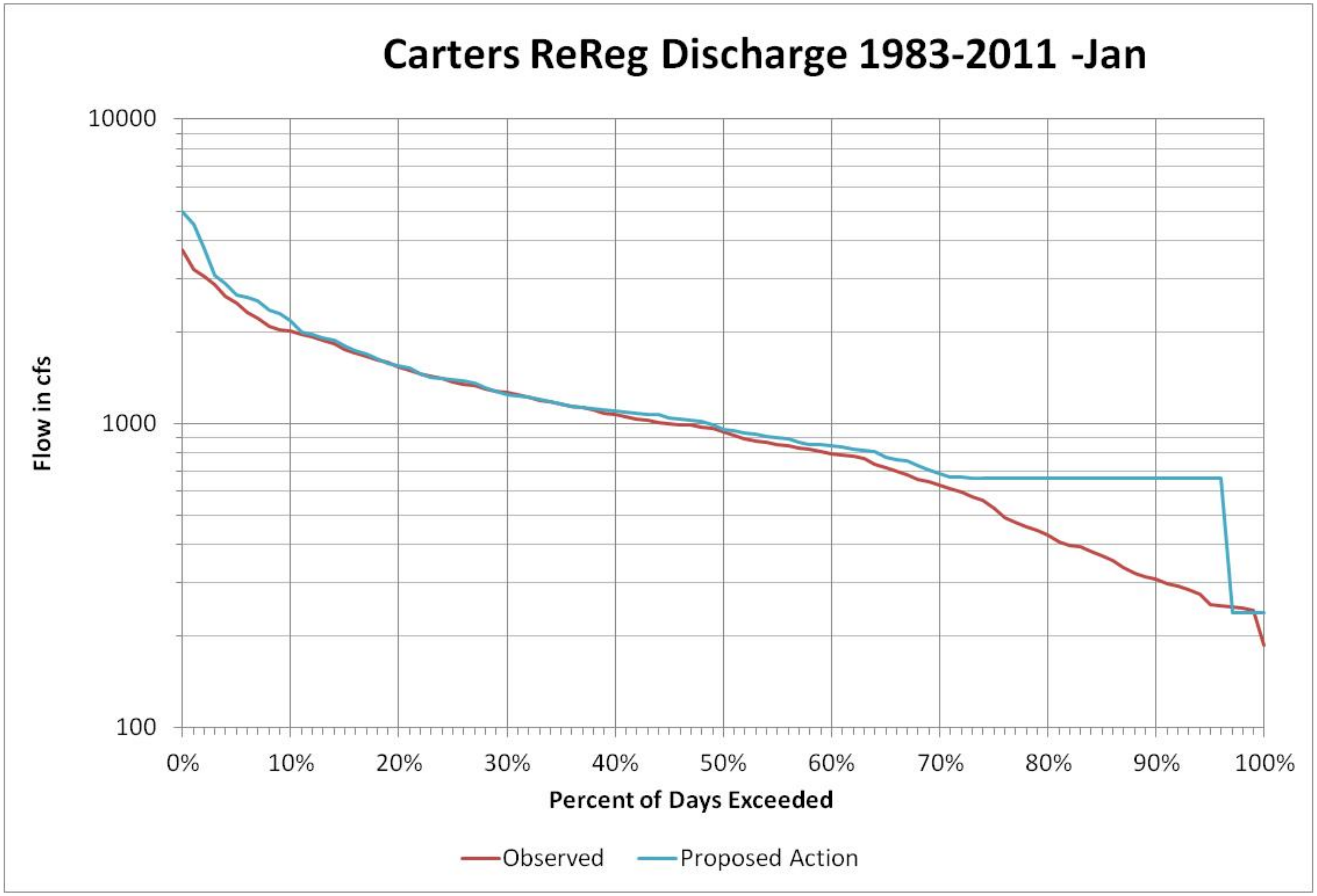


Figure 17. Comparison of Observed Data and Modeled Proposed Action for Average January Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

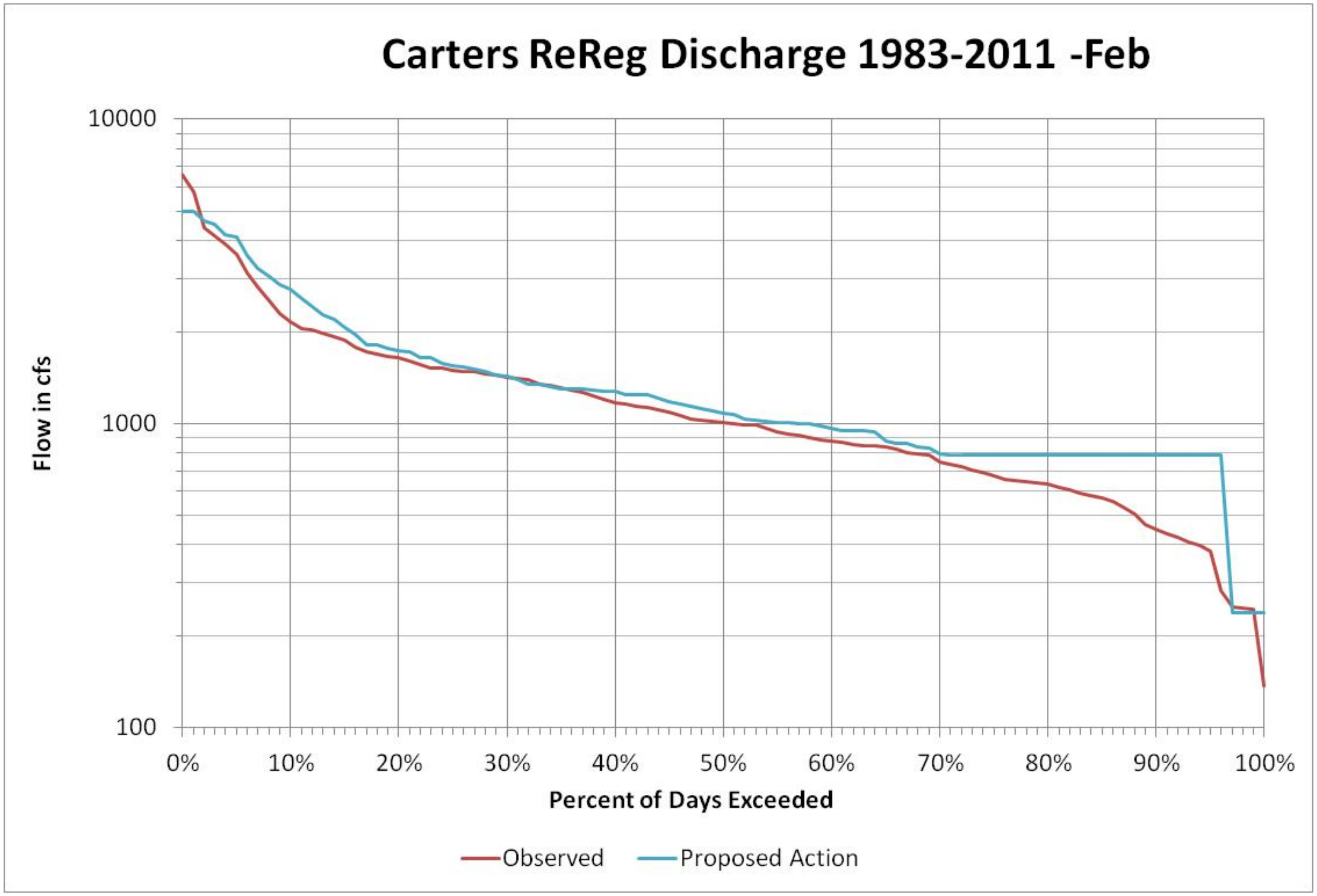


Figure 18. Comparison of Observed Data and Modeled Proposed Action for Average February Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

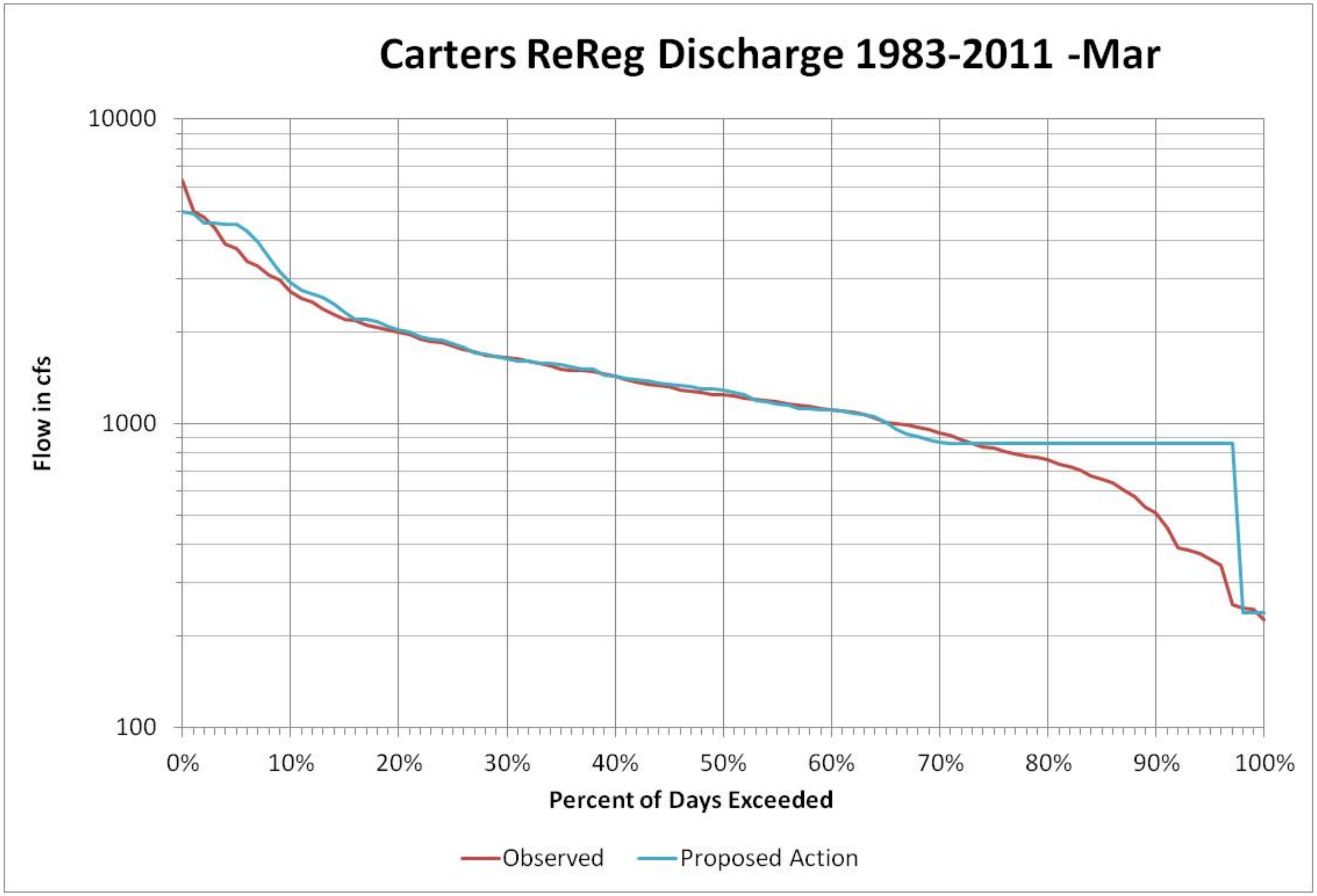


Figure 19. Comparison of Observed Data and Modeled Proposed Action for Average March Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

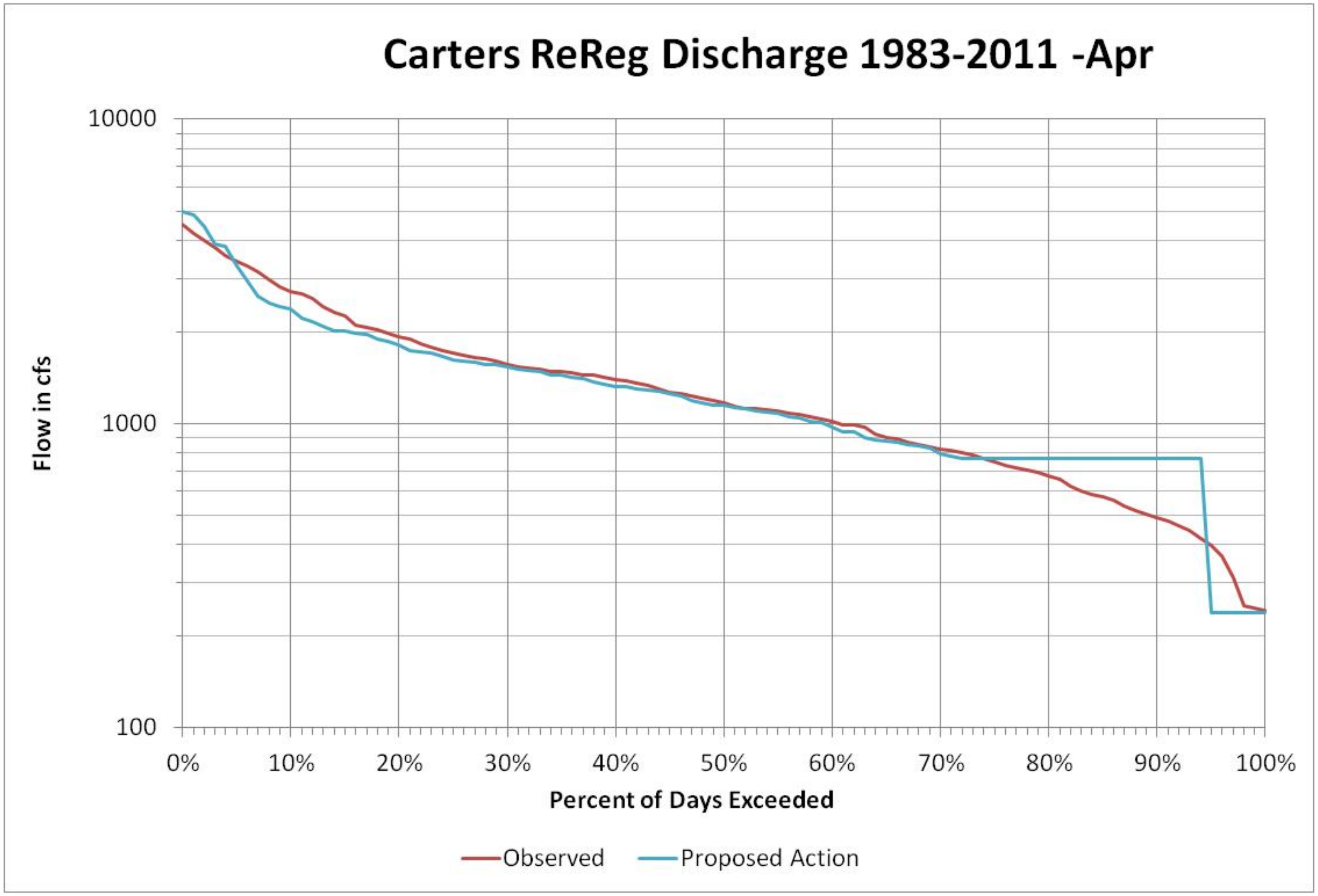


Figure 20. Comparison of Observed Data and Modeled Proposed Action for Average April Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

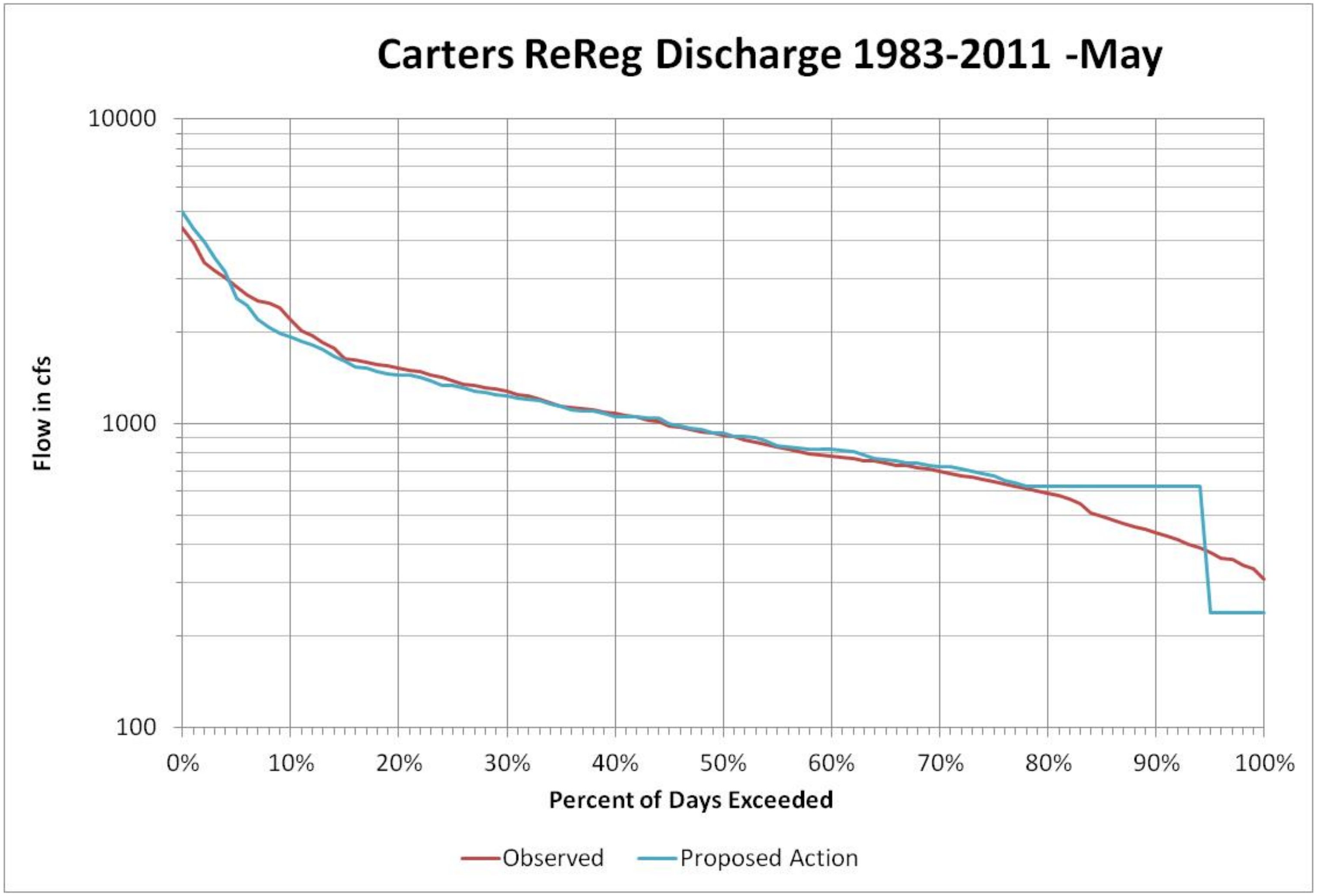


Figure 21. Comparison of Observed Data and Modeled Proposed Action for Average May Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

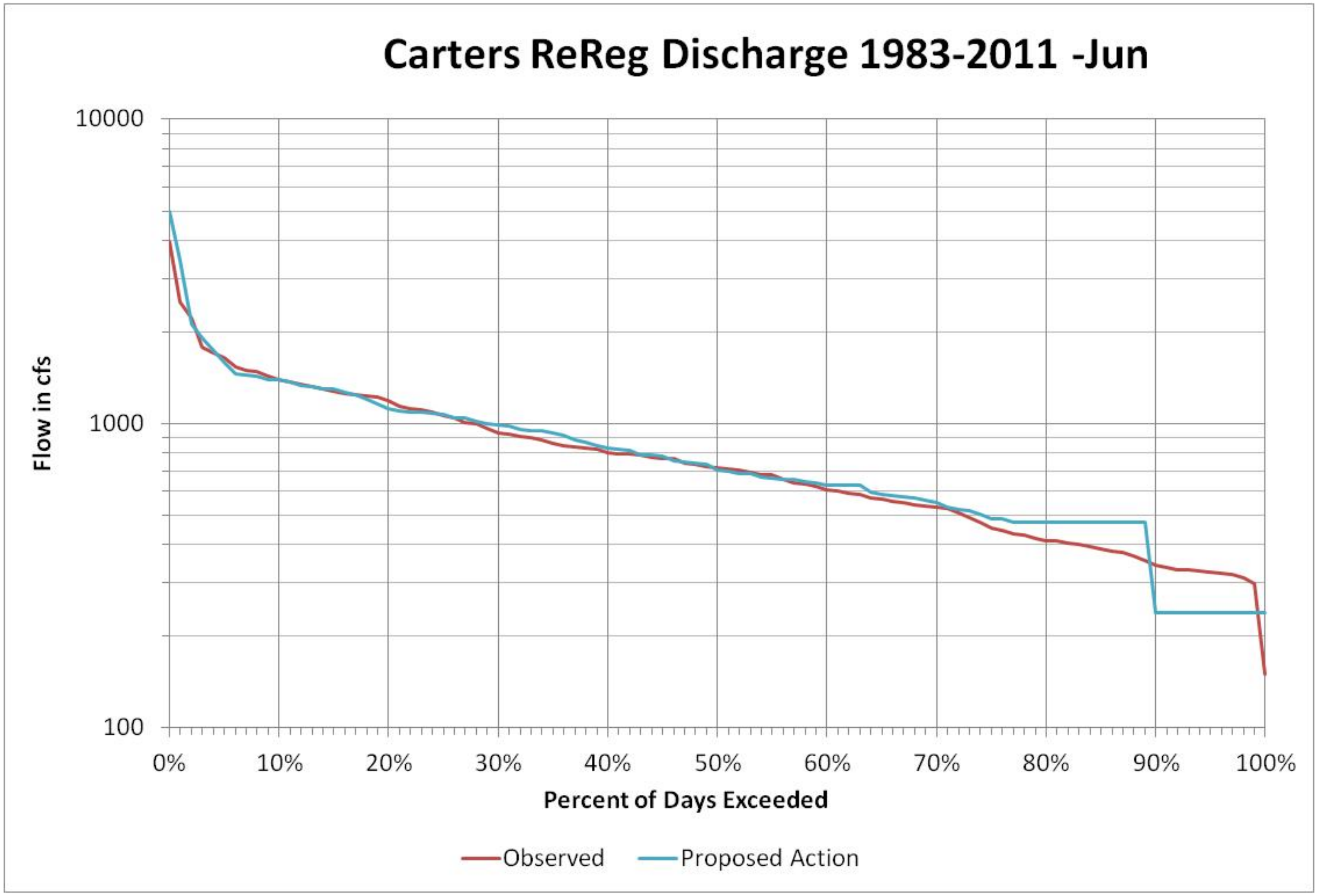


Figure 22. Comparison of Observed Data and Modeled Proposed Action for Average June Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

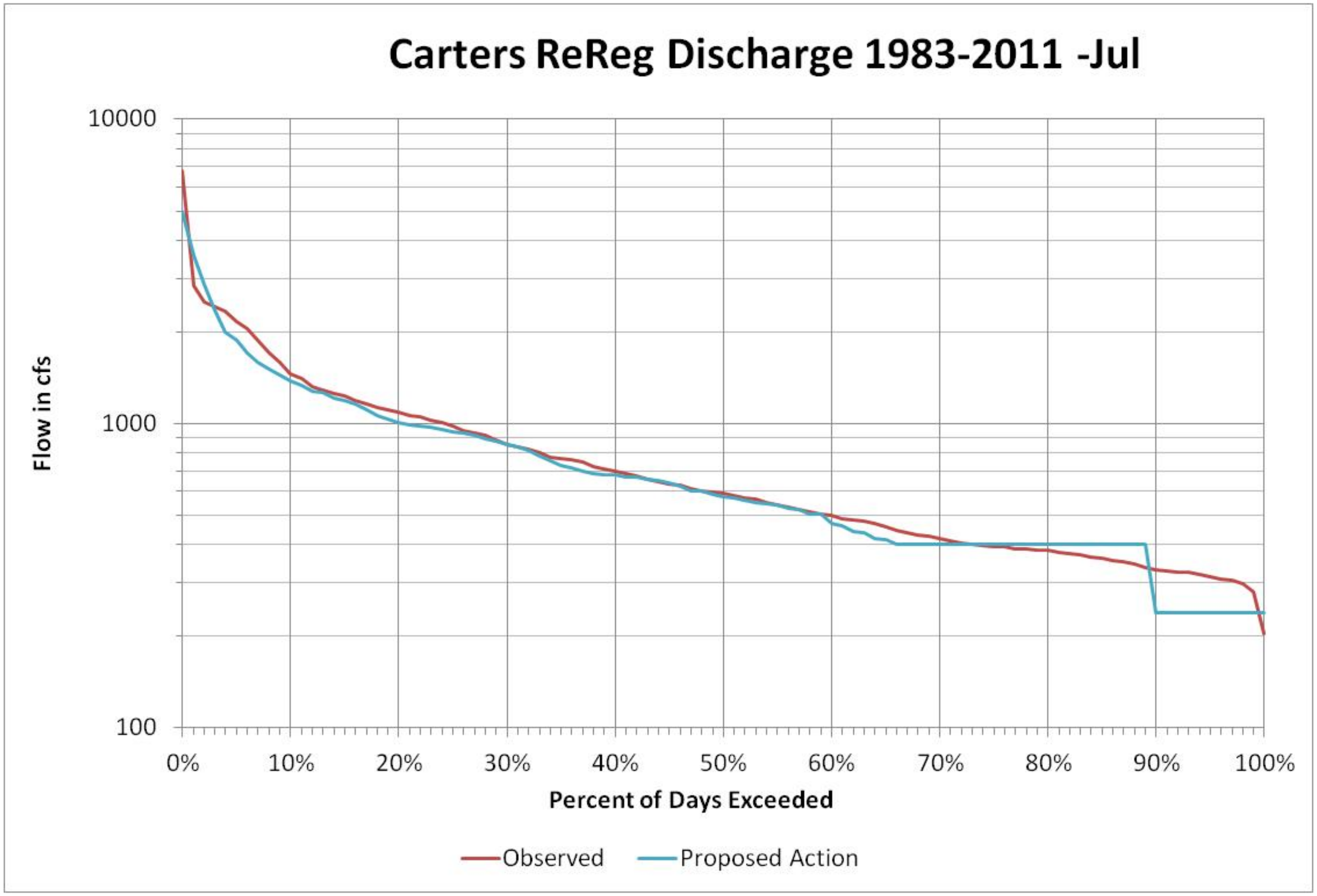


Figure 23. Comparison of Observed Data and Modeled Proposed Action for Average July Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

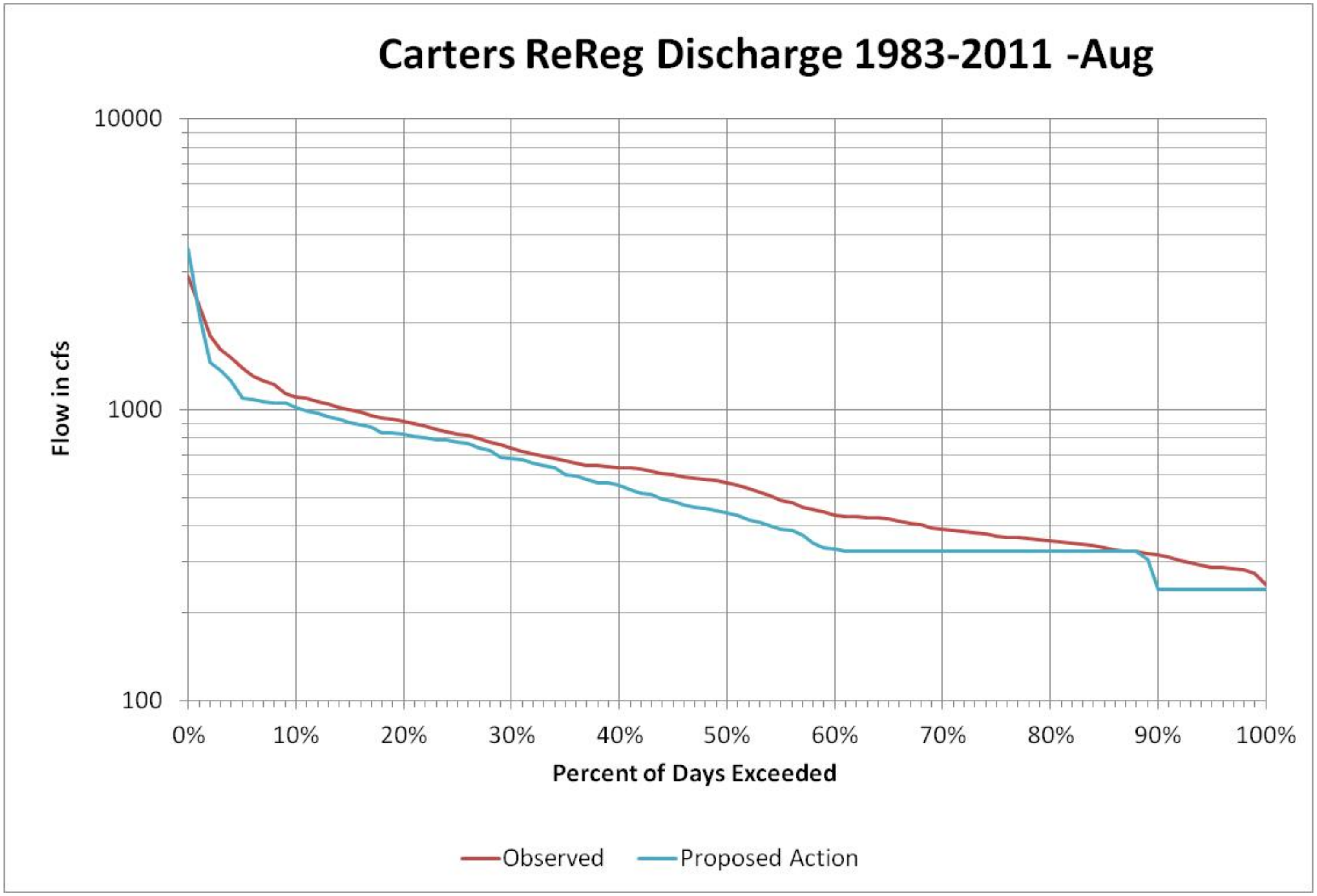


Figure 24. Comparison of Observed Data and Modeled Proposed Action for Average August Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

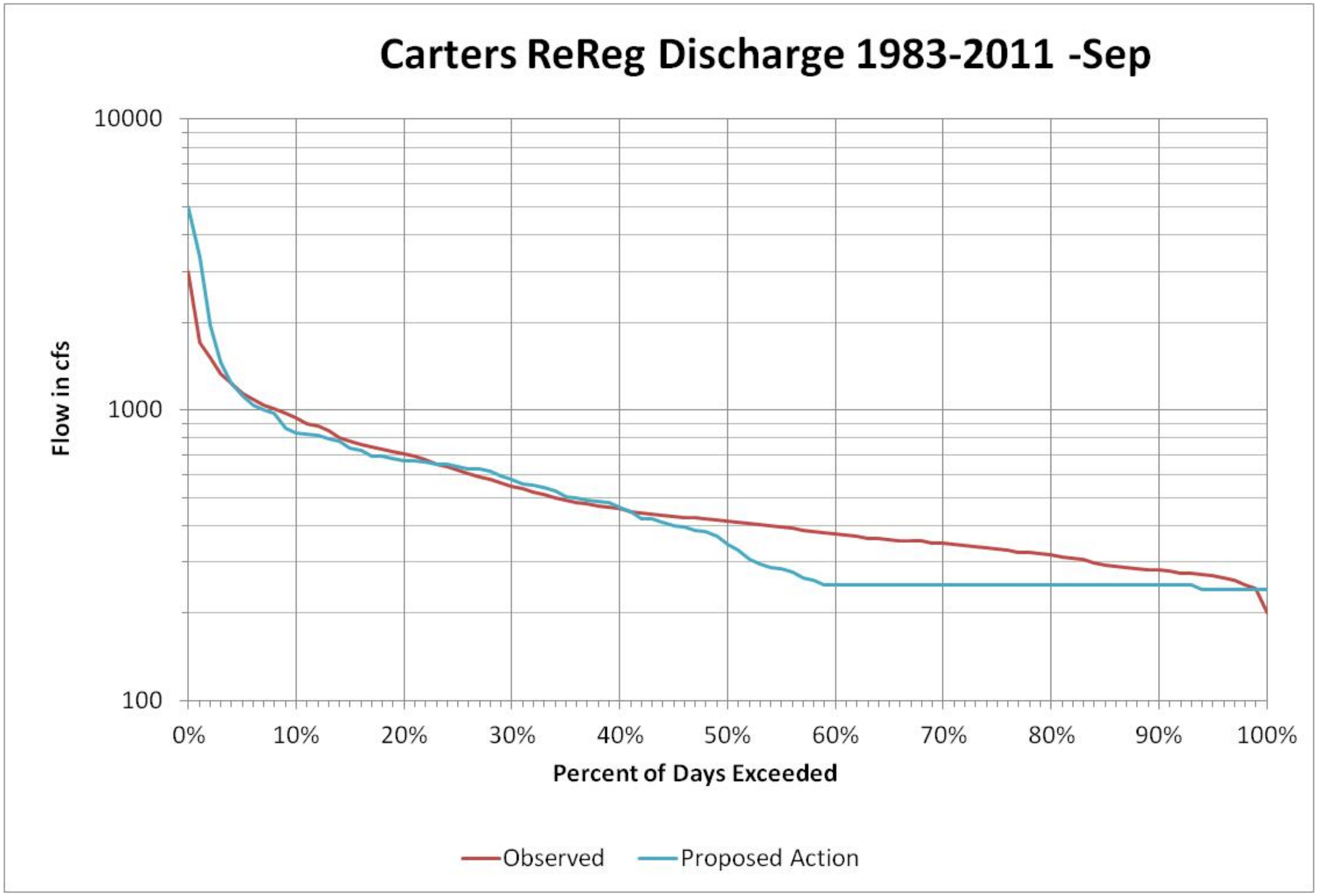


Figure 25. Comparison of Observed Data and Modeled Proposed Action for Average September Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

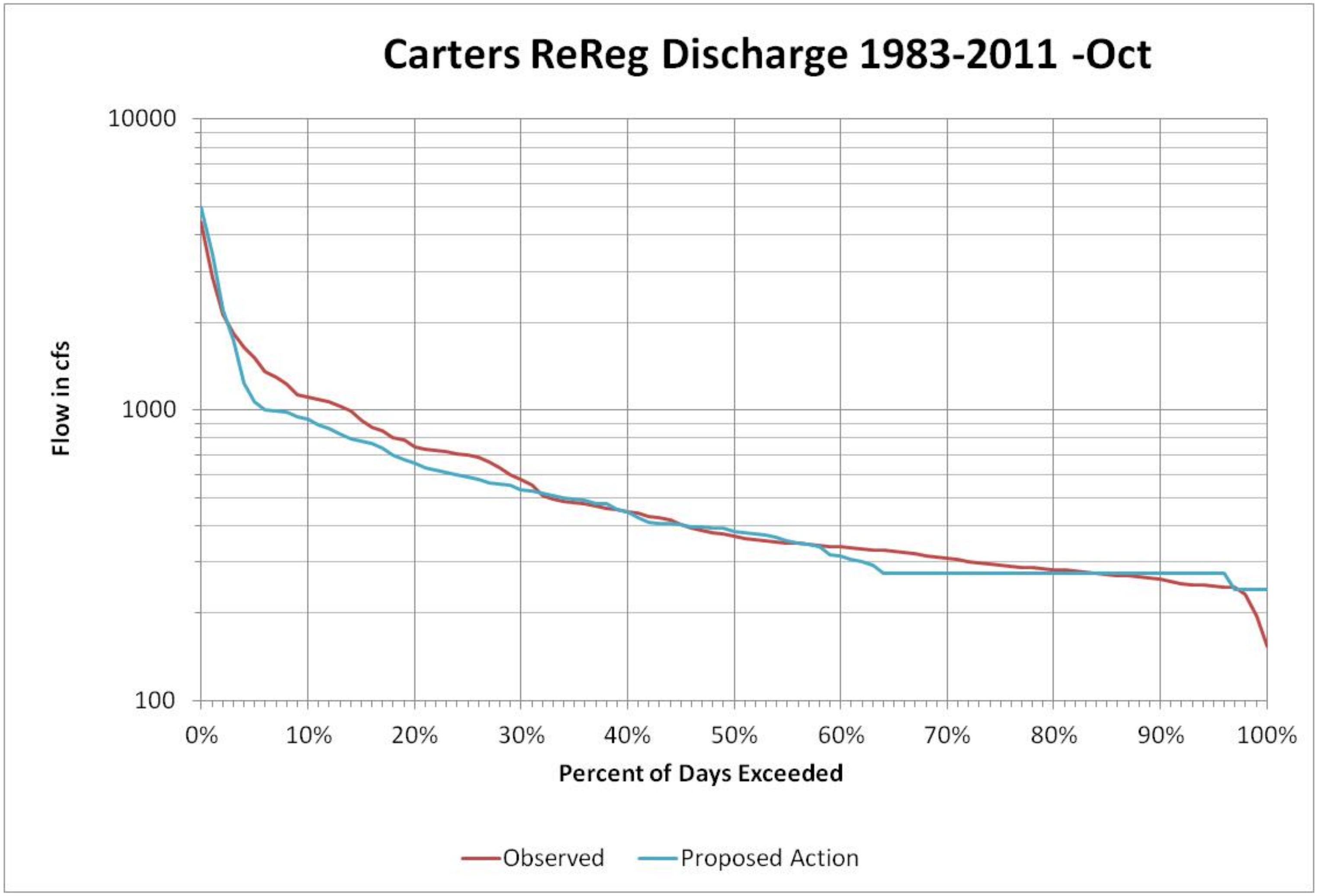


Figure 26. Comparison of Observed Data and Modeled Proposed Action for Average October Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

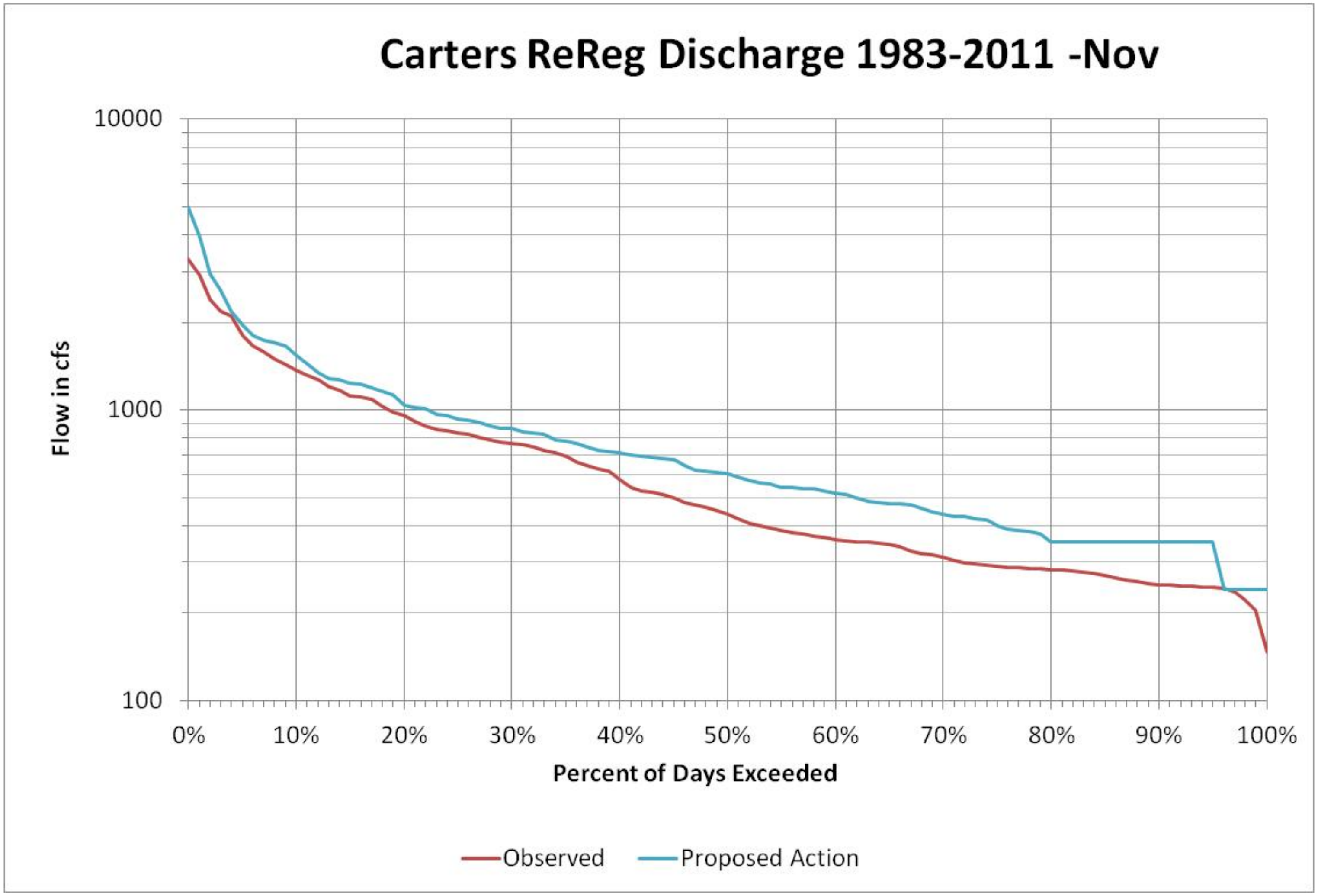


Figure 27. Comparison of Observed Data and Modeled Proposed Action for Average November Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

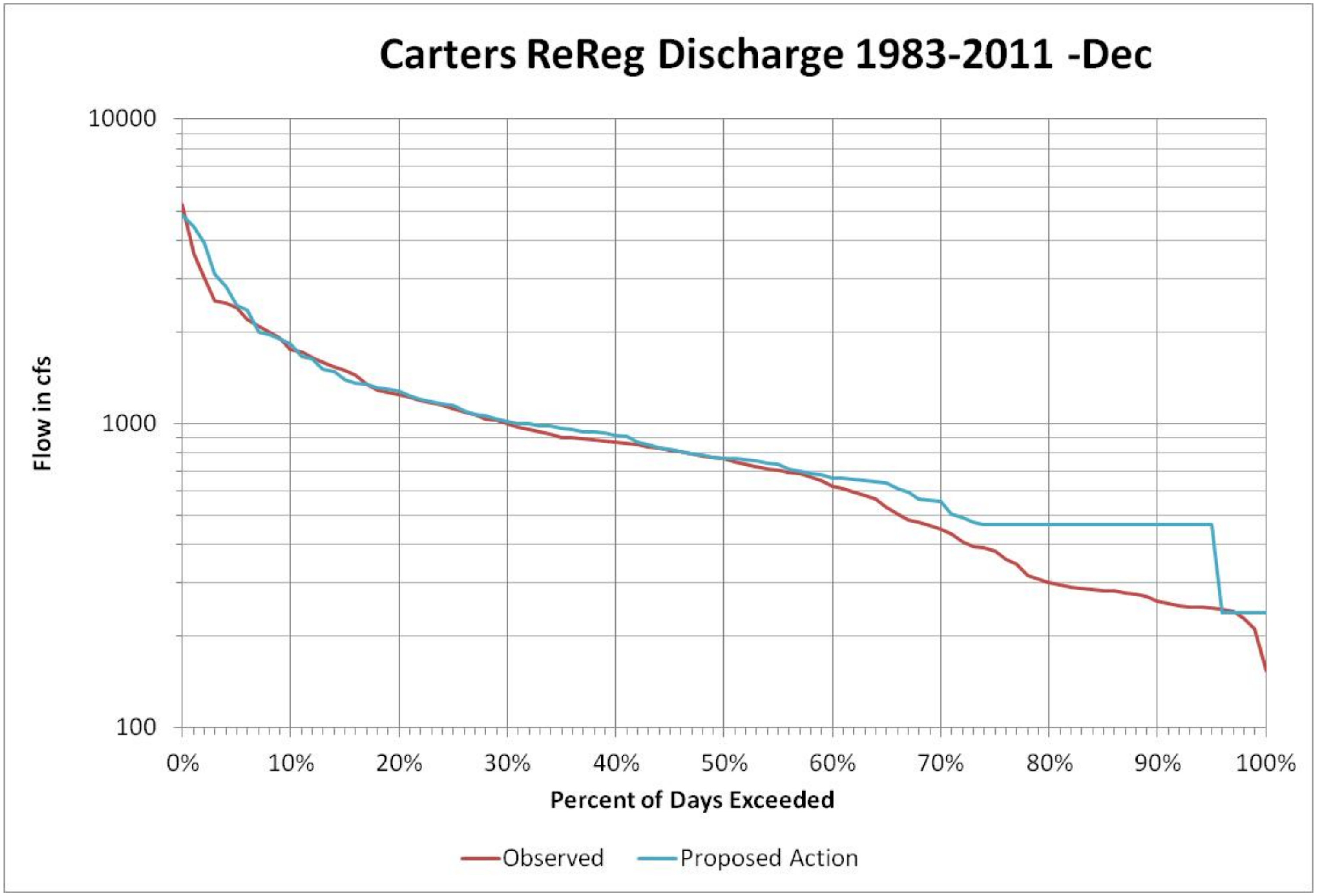


Figure 28. Comparison of Observed Data and Modeled Proposed Action for Average December Flow Duration in Percent Days Exceeded at the Carters ReRegulation Dam Tailrace, years 1983-2011.

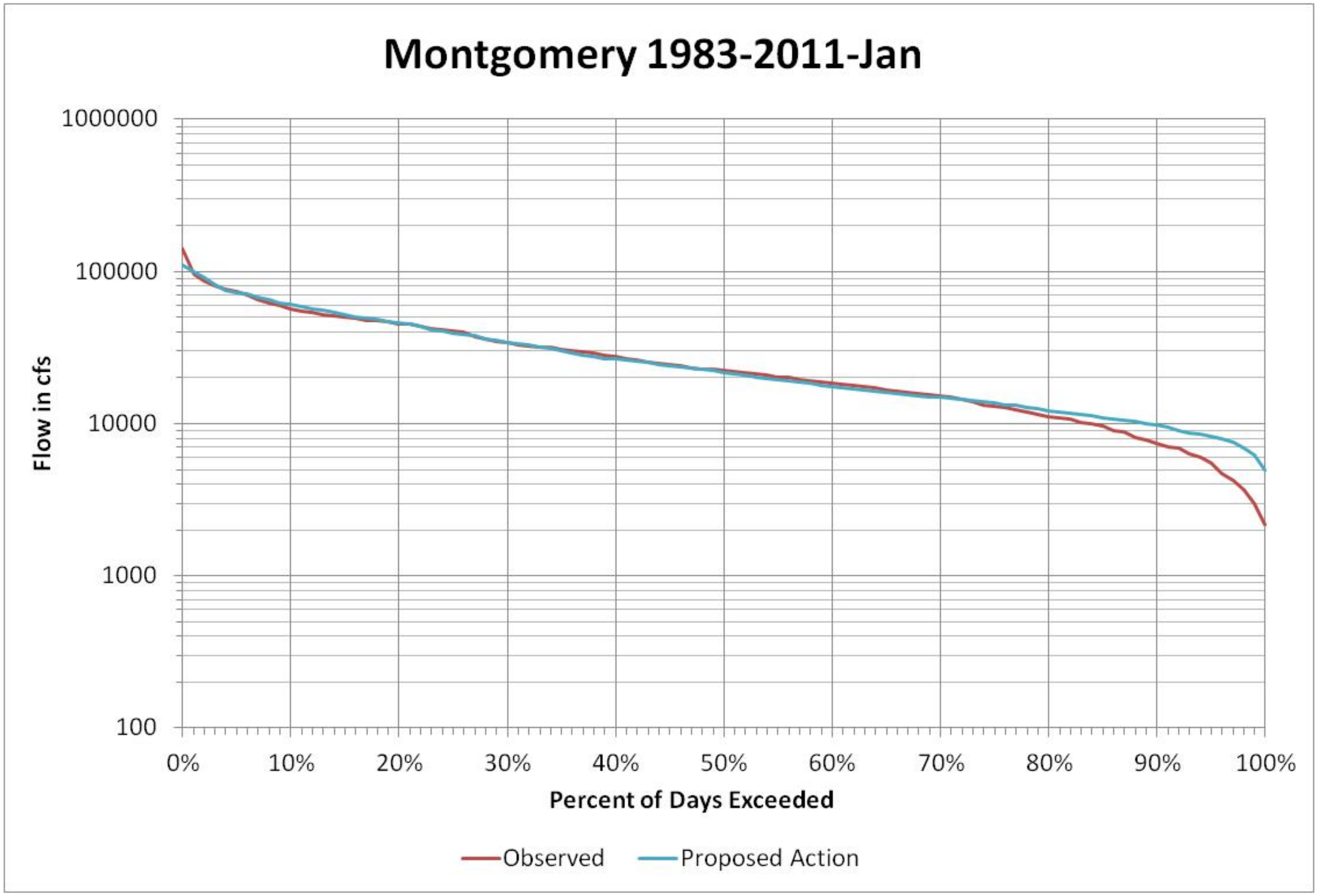


Figure 29. Comparison of Observed Data and Modeled Proposed Action for Average January Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

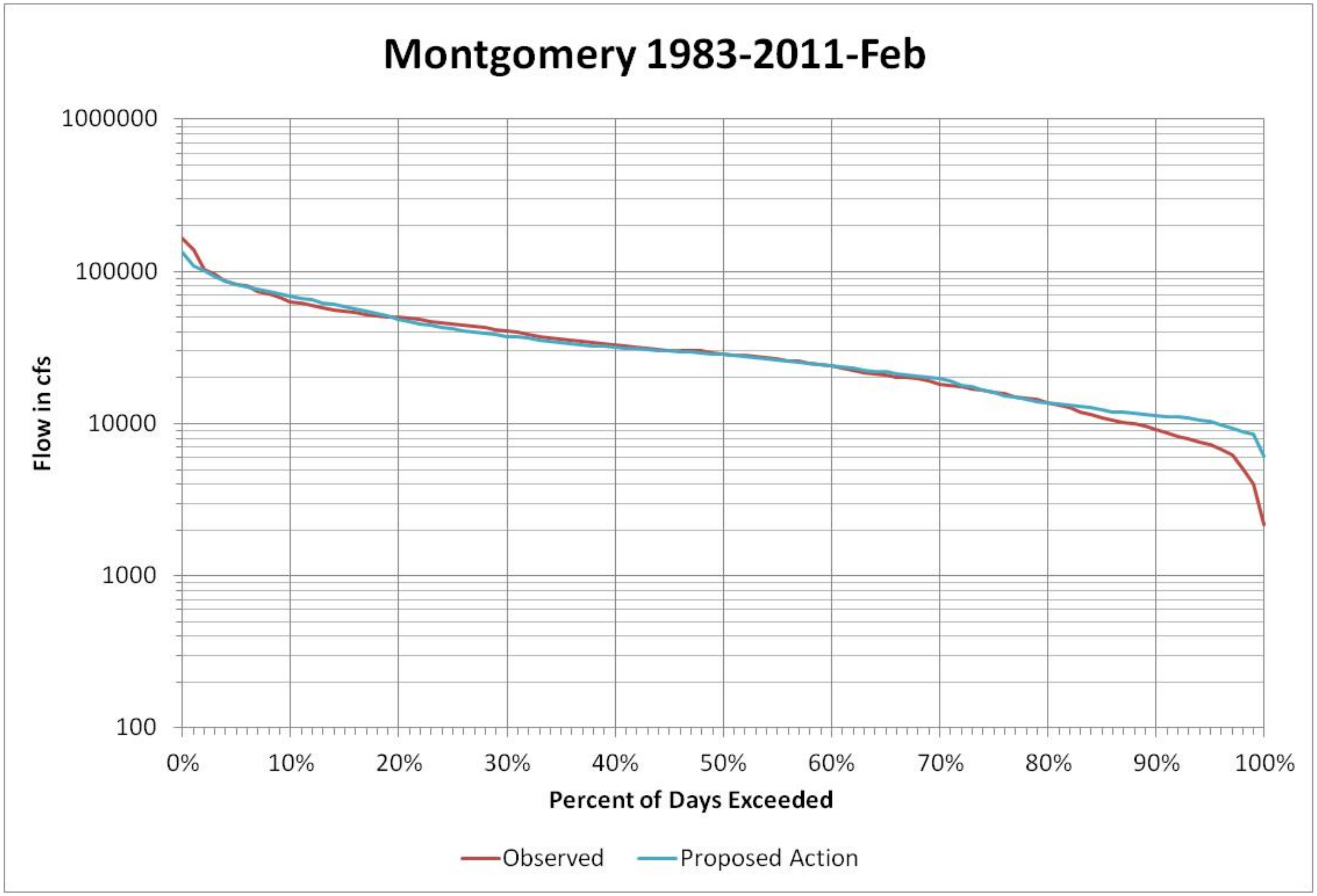


Figure 30. Comparison of Observed Data and Modeled Proposed Action for Average February Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

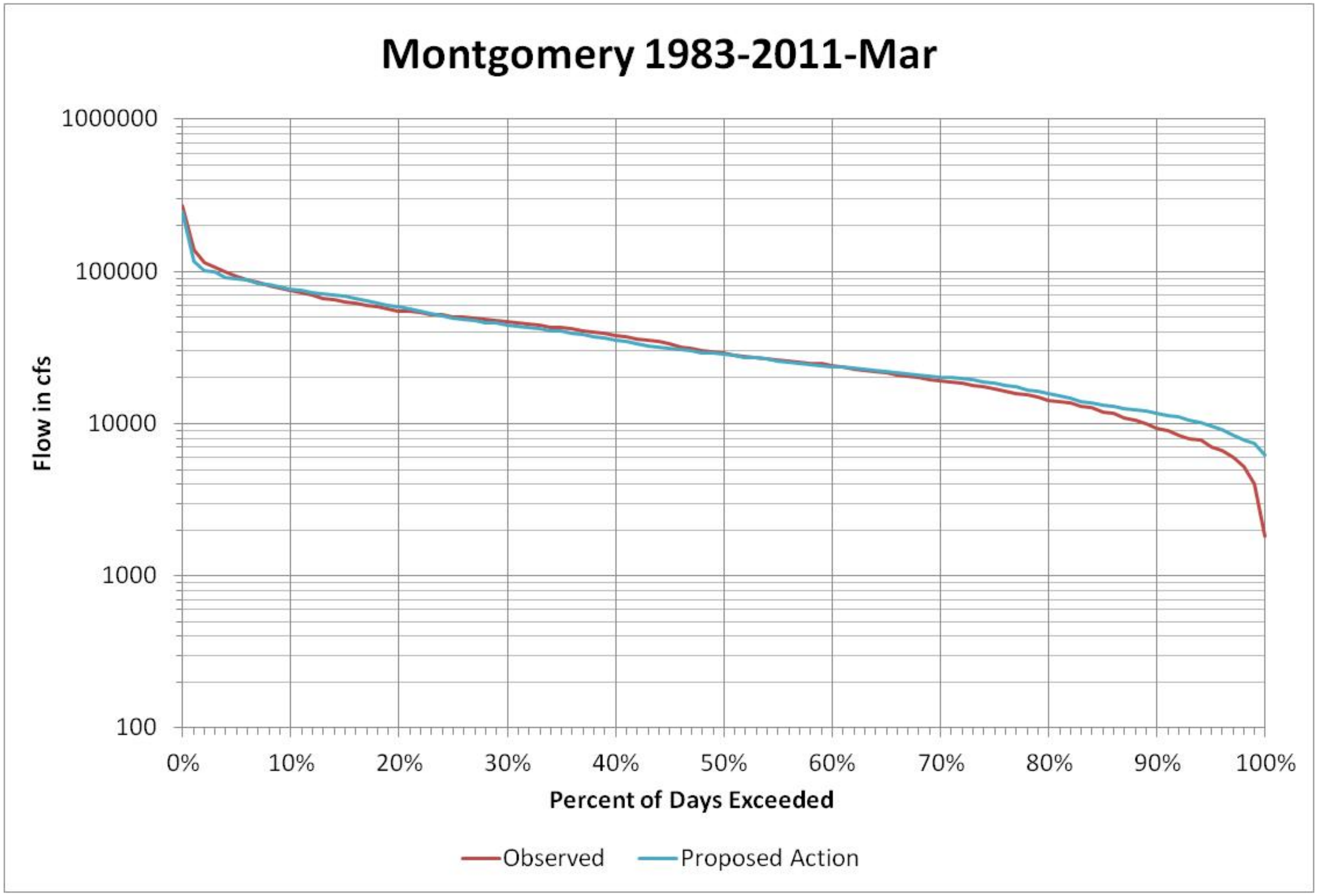


Figure 31. Comparison of Observed Data and Modeled Proposed Action for Average March Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

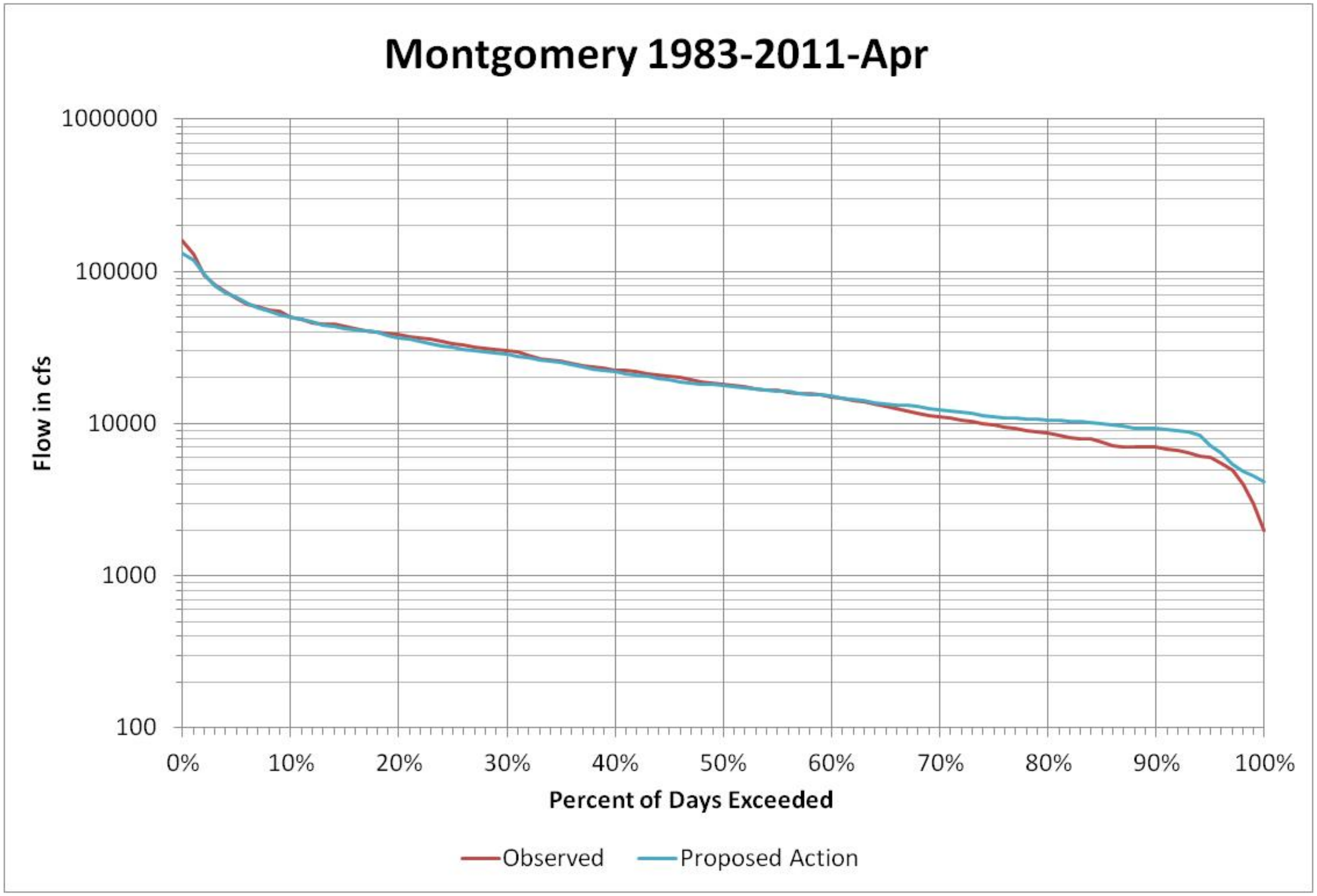


Figure 32. Comparison of Observed Data and Modeled Proposed Action for Average April Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

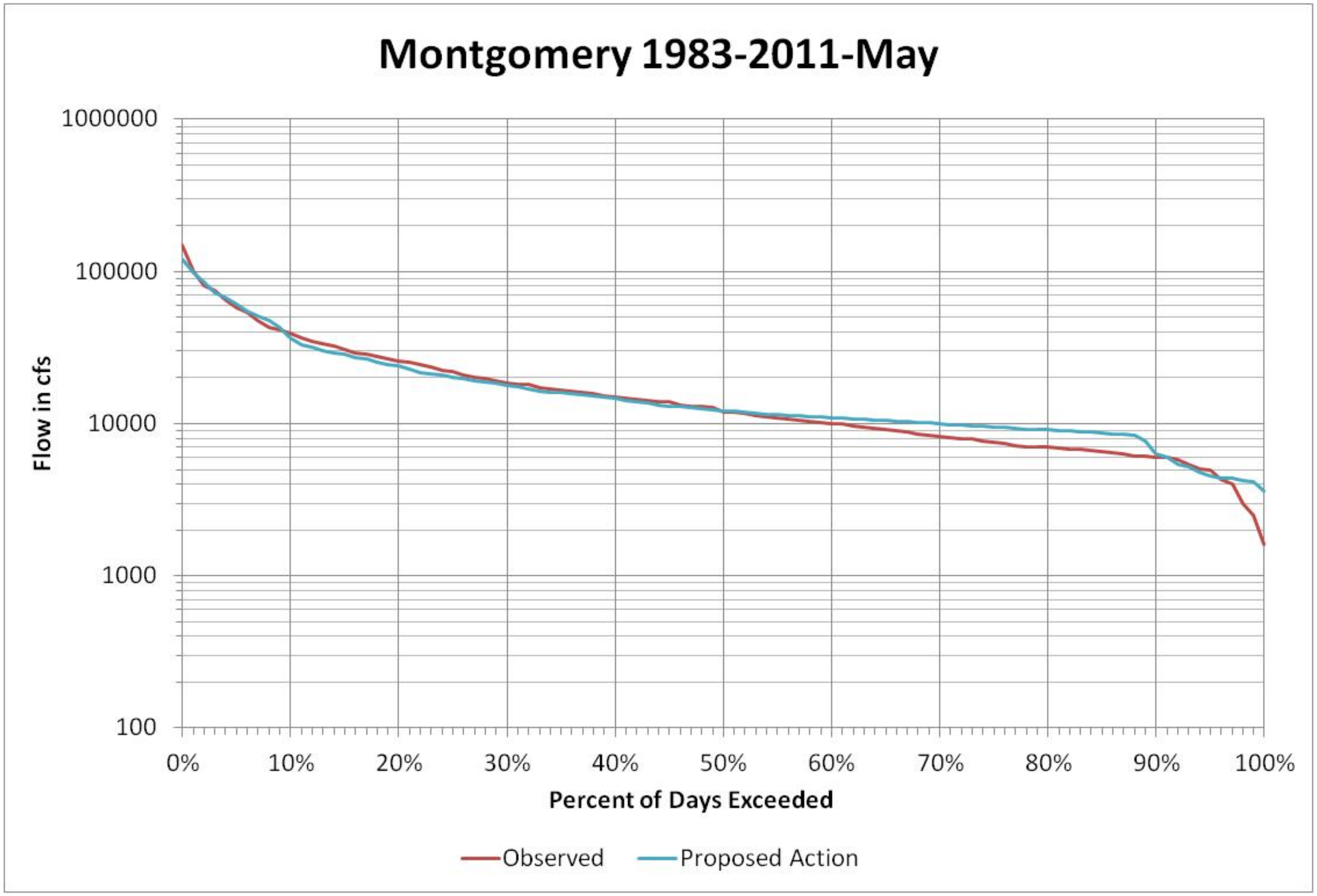


Figure 33. Comparison of Observed Data and Modeled Proposed Action for Average May Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

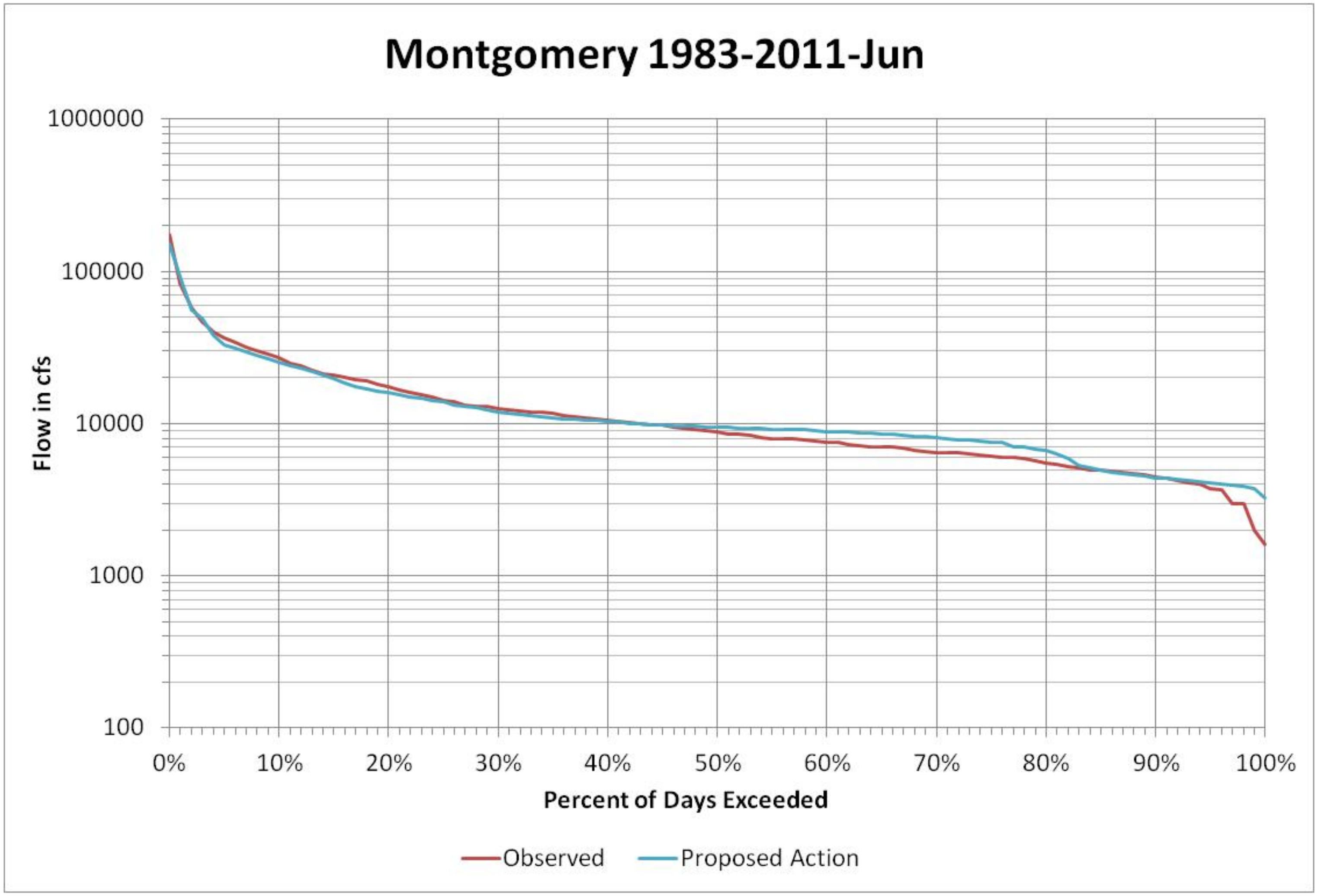


Figure 34. Comparison of Observed Data and Modeled Proposed Action for Average June Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

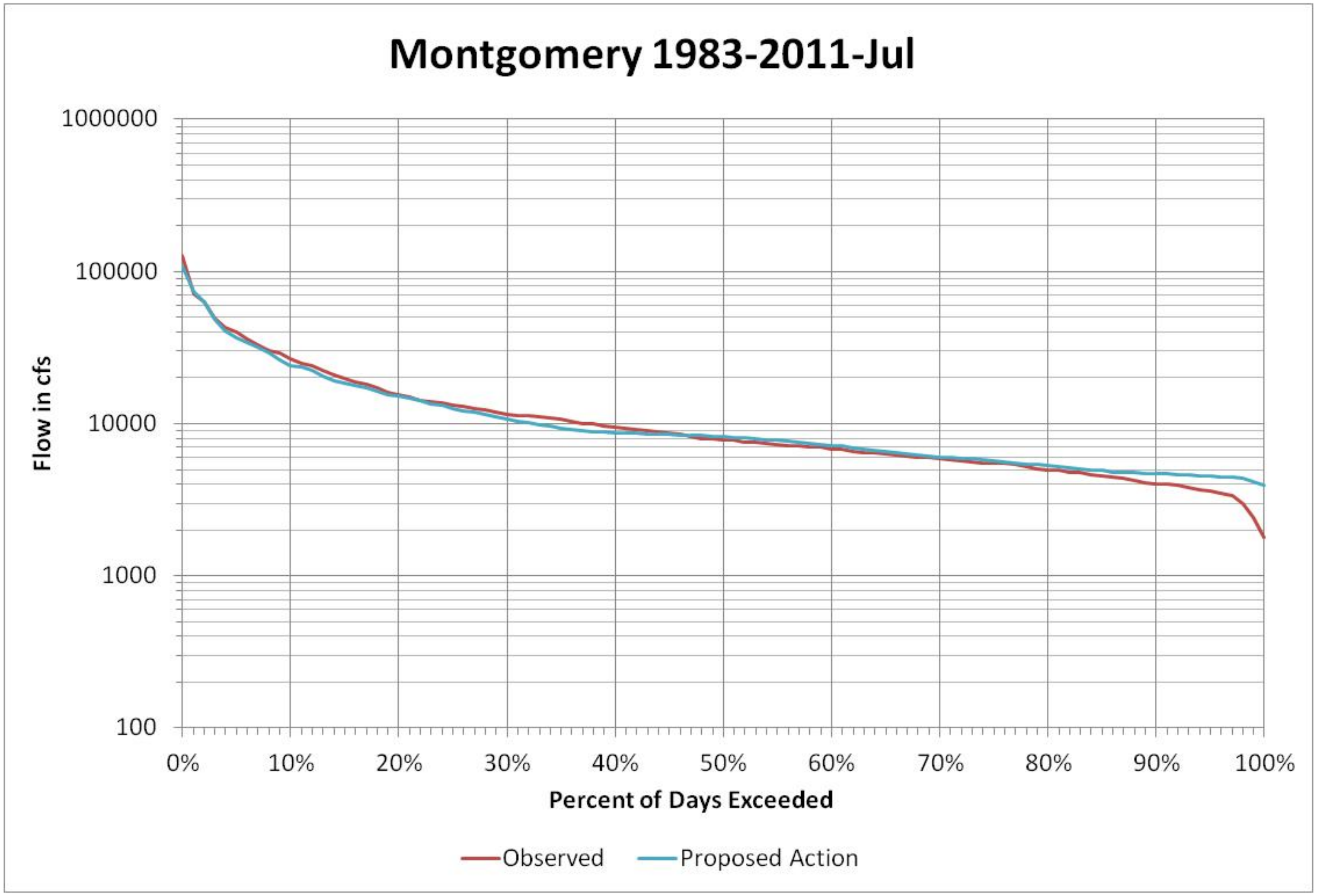


Figure 35. Comparison of Observed Data and Modeled Proposed Action for Average July Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

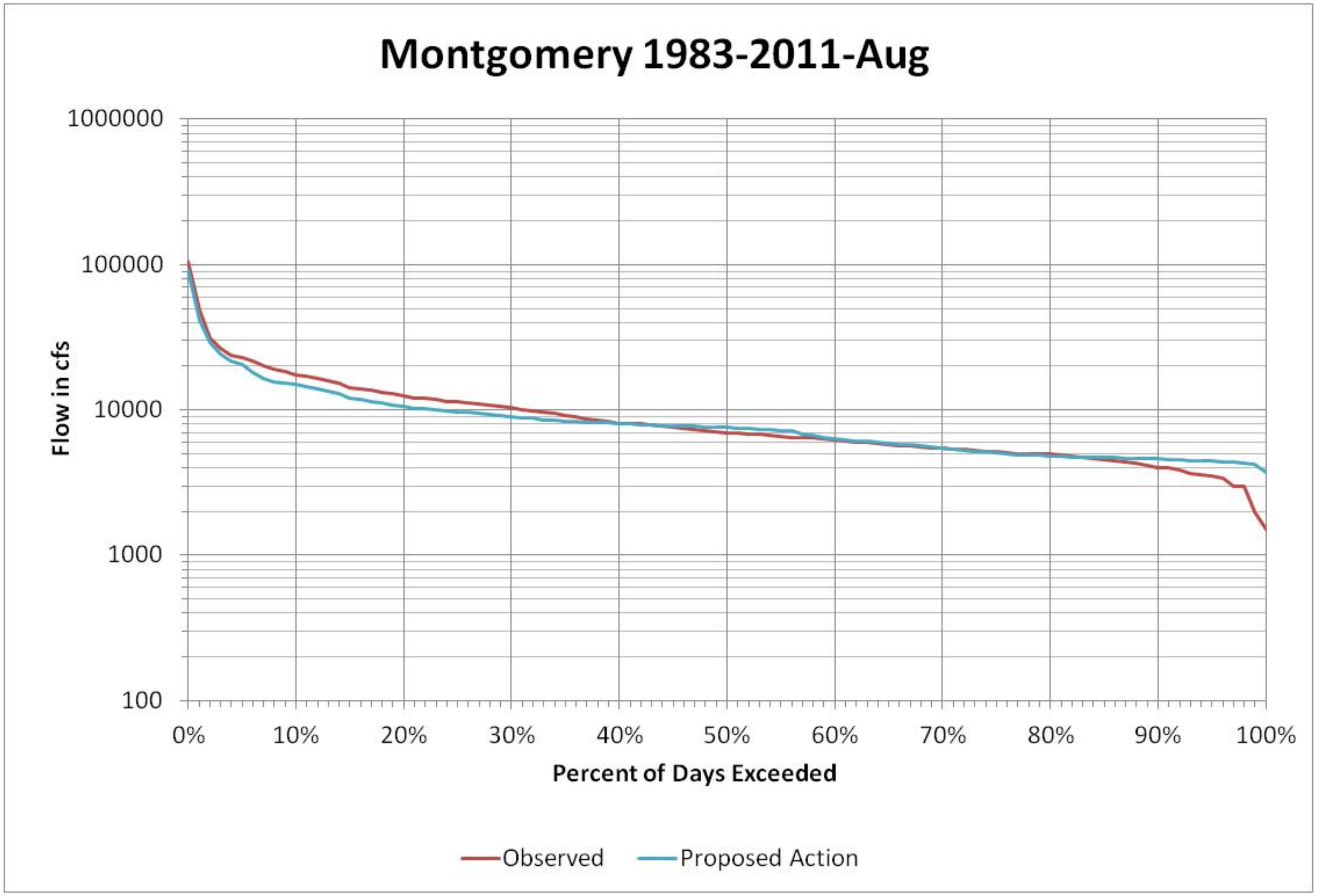


Figure 36. Comparison of Observed Data and Modeled Proposed Action for Average August Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

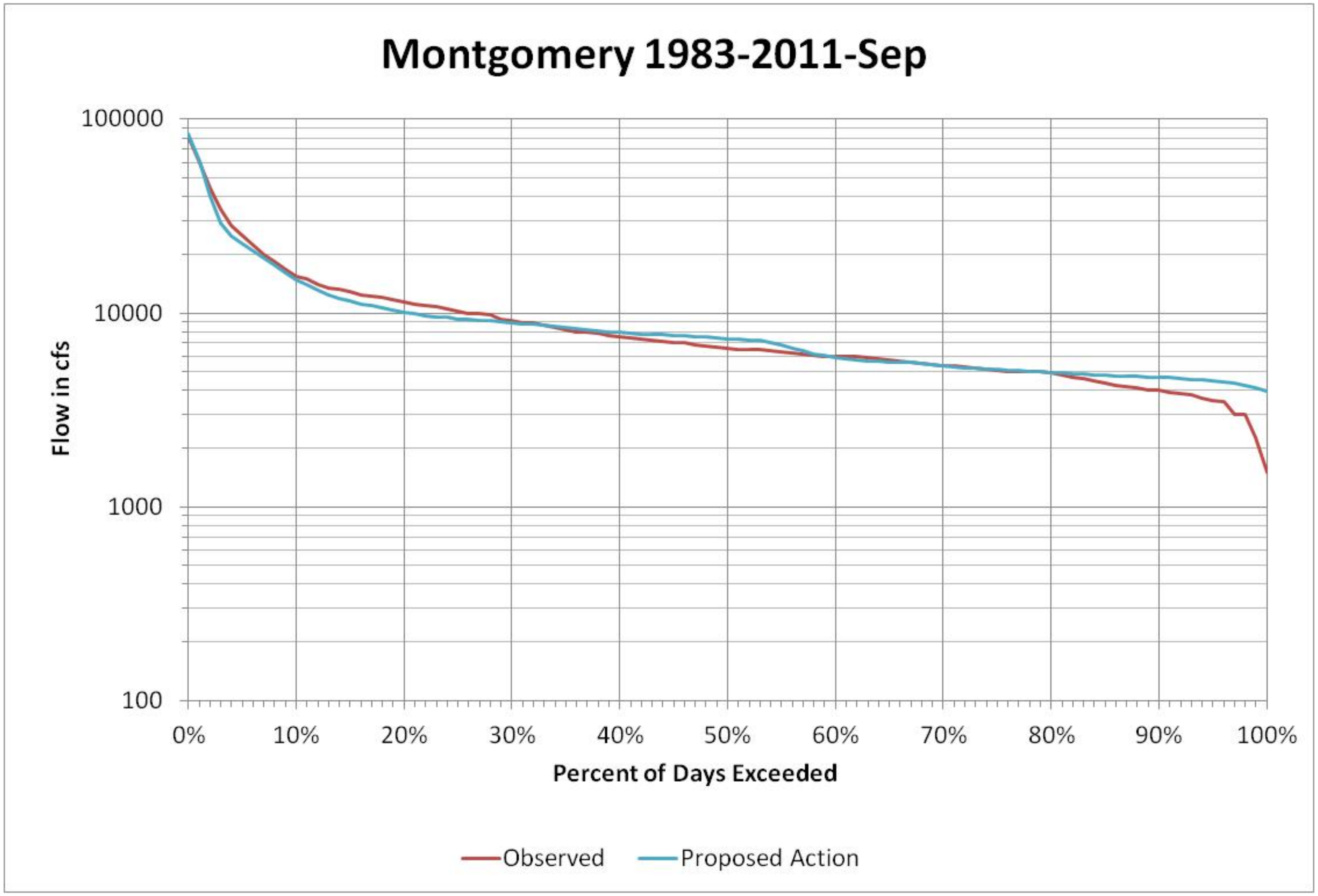


Figure 37. Comparison of Observed Data and Modeled Proposed Action for Average September Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

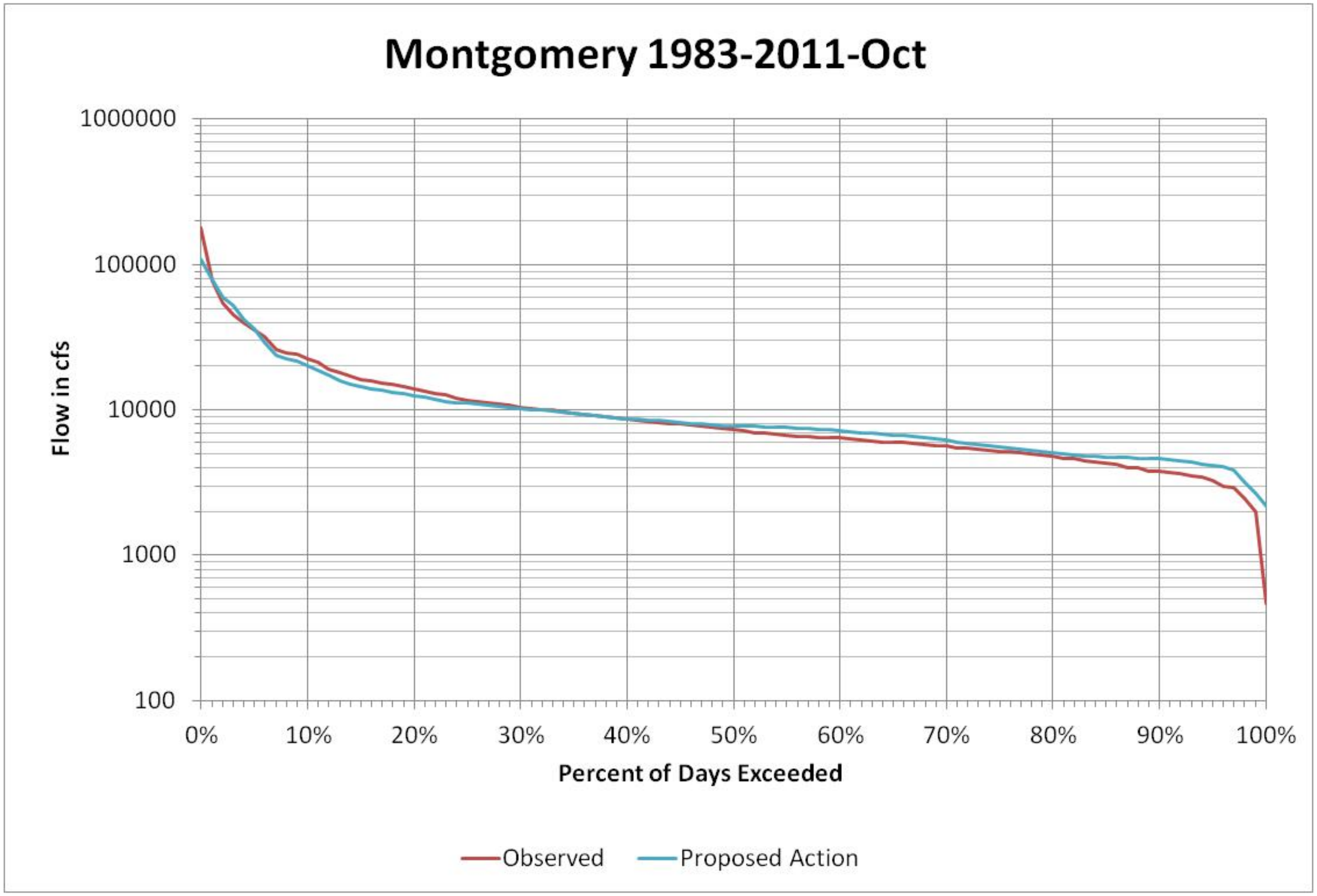


Figure 38. Comparison of Observed Data and Modeled Proposed Action for Average October Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

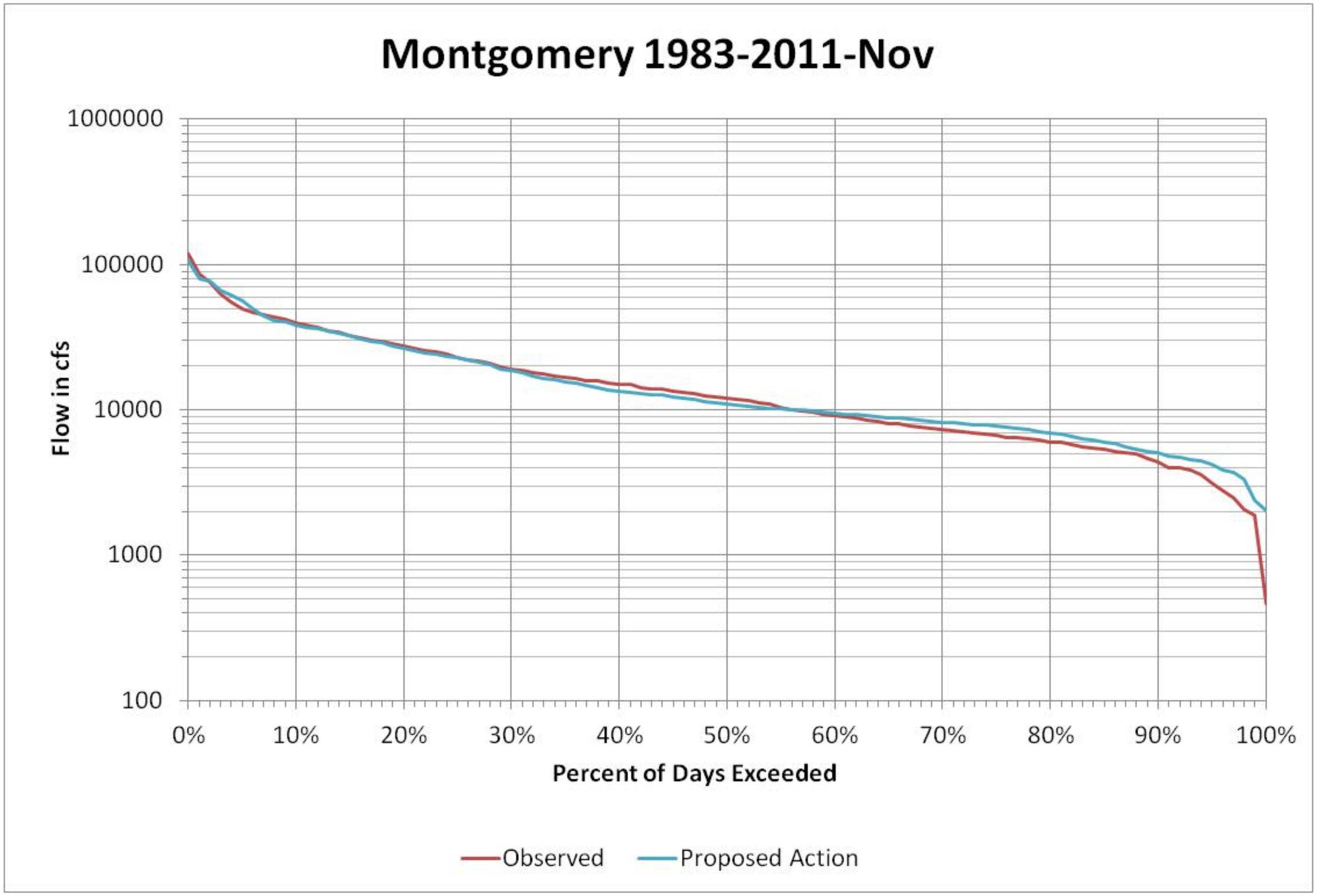


Figure 39. Comparison of Observed Data and Modeled Proposed Action for Average November Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

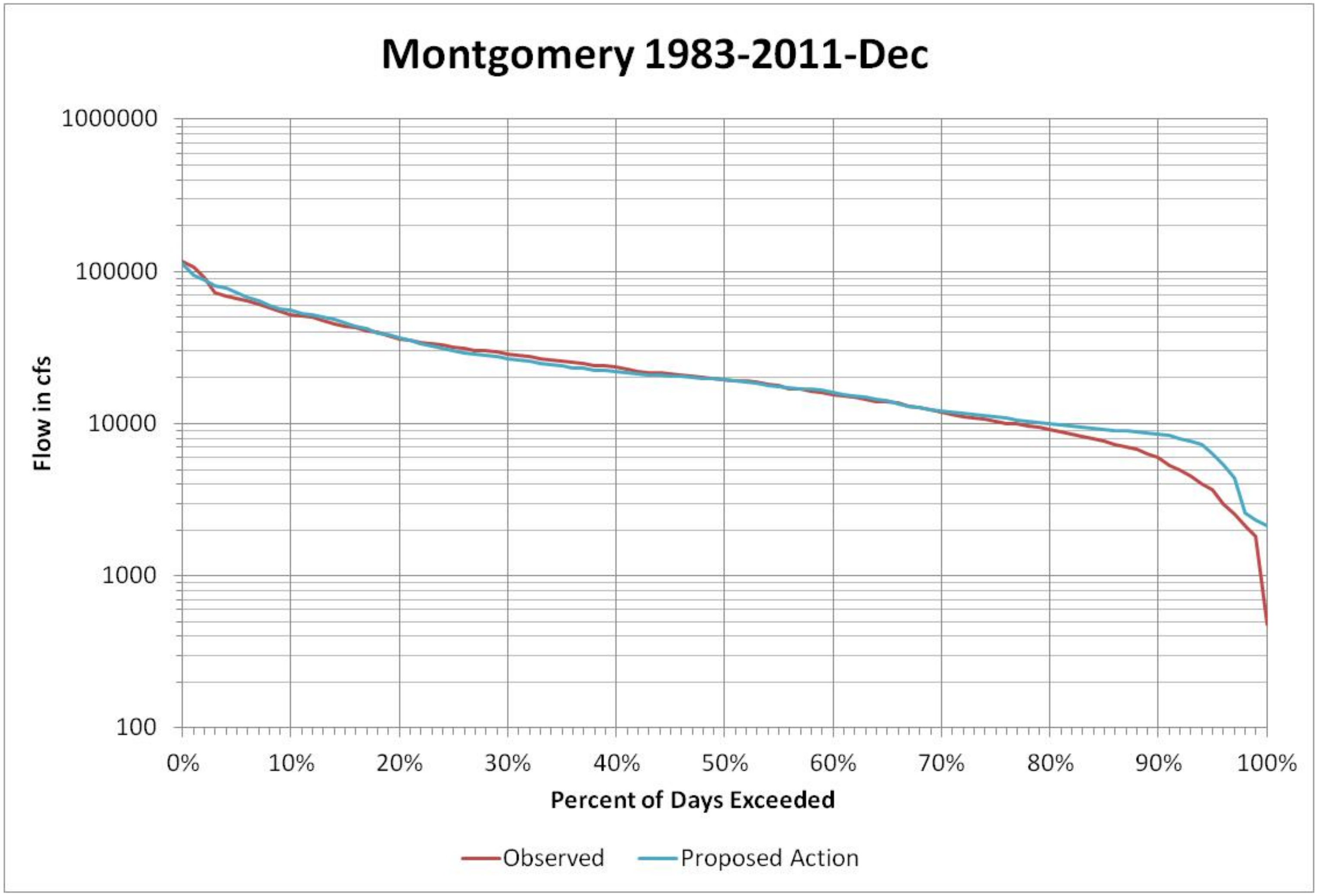


Figure 40. Comparison of Observed Data and Modeled Proposed Action for Average December Flow Duration in Percent Days Exceeded at Montgomery, years 1983-2011.

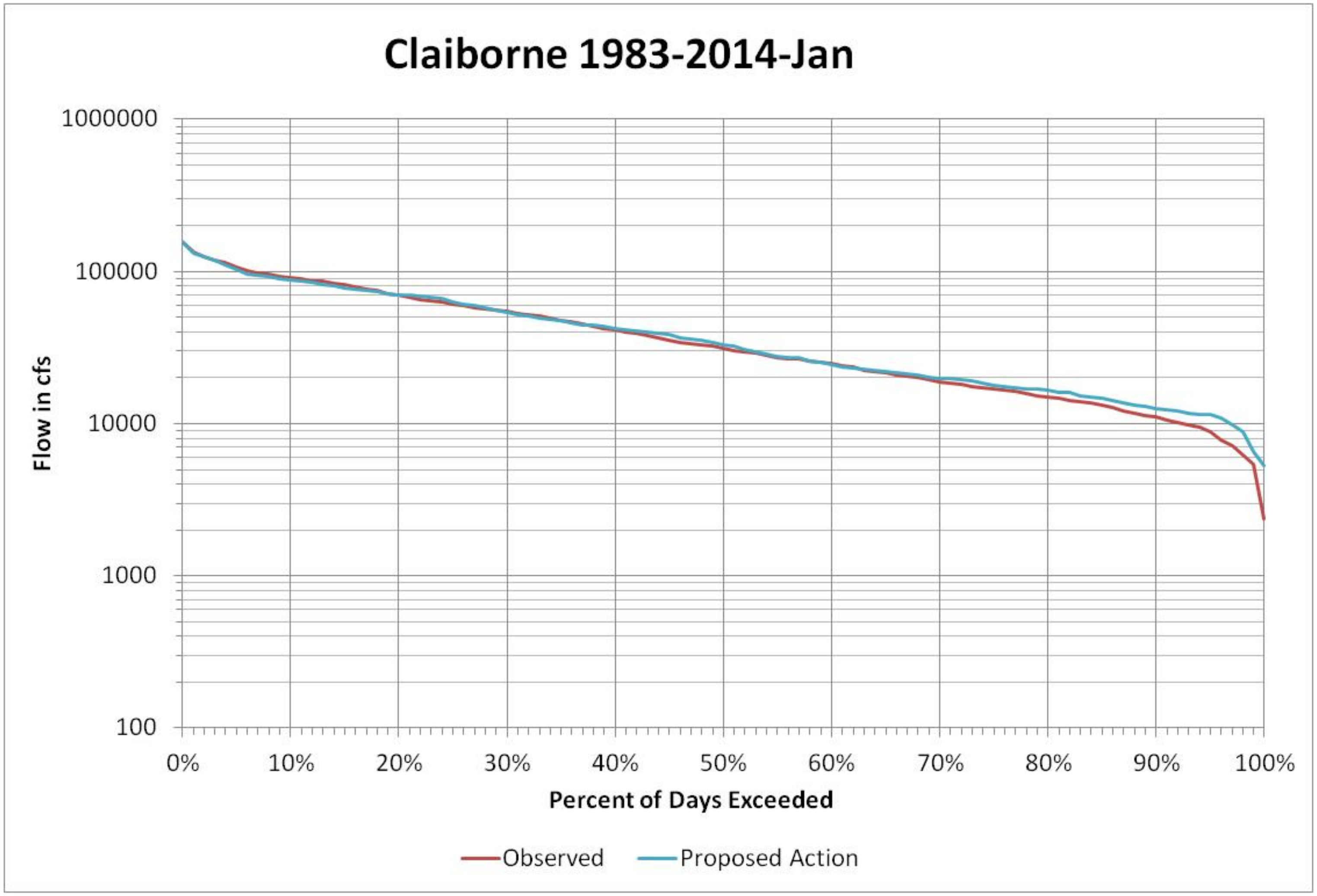


Figure 41. Comparison of Observed Data and Modeled Proposed Action for Average January Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

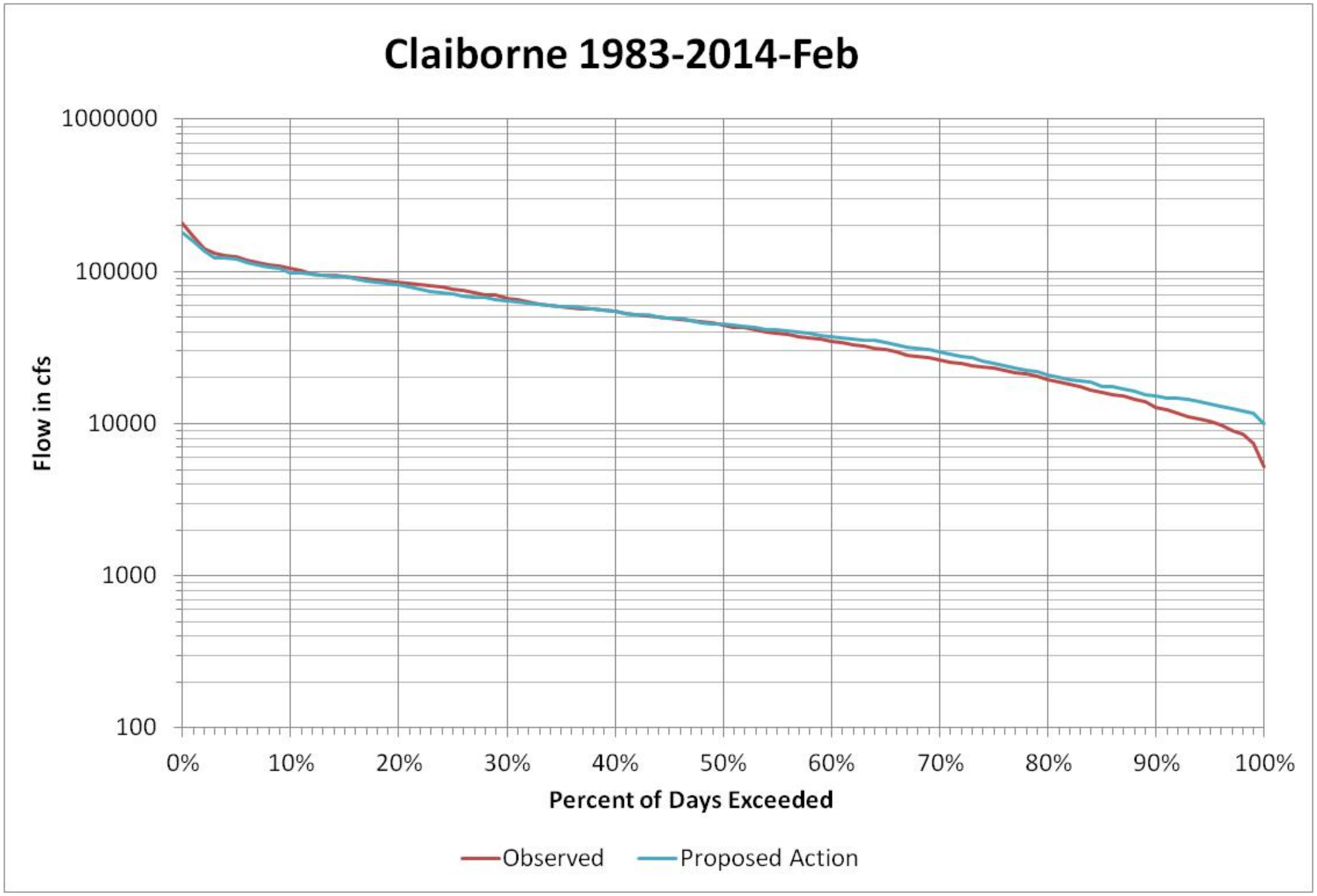


Figure 42. Comparison of Observed Data and Modeled Proposed Action for Average February Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

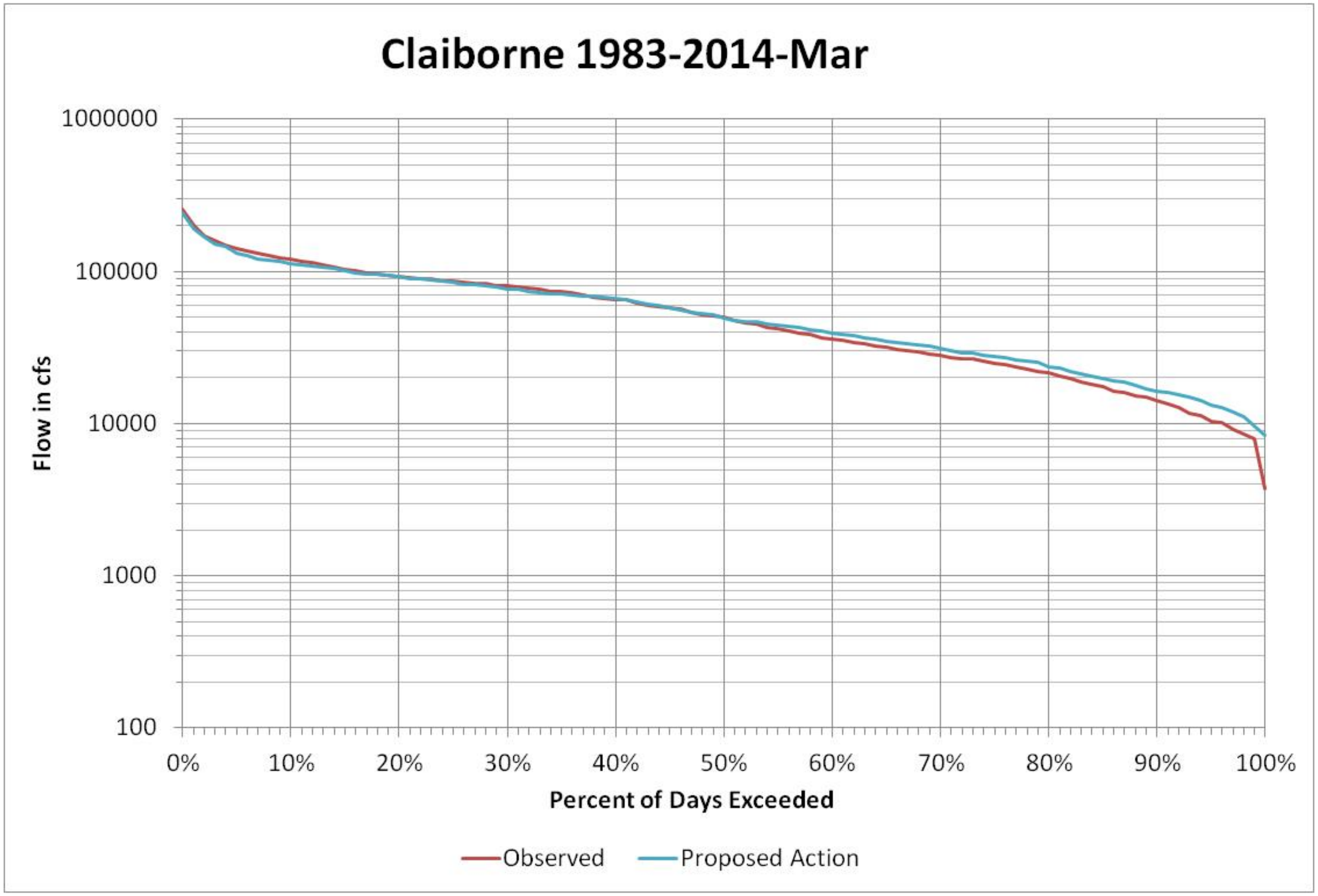


Figure 43. Comparison of Observed Data and Modeled Proposed Action for Average March Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

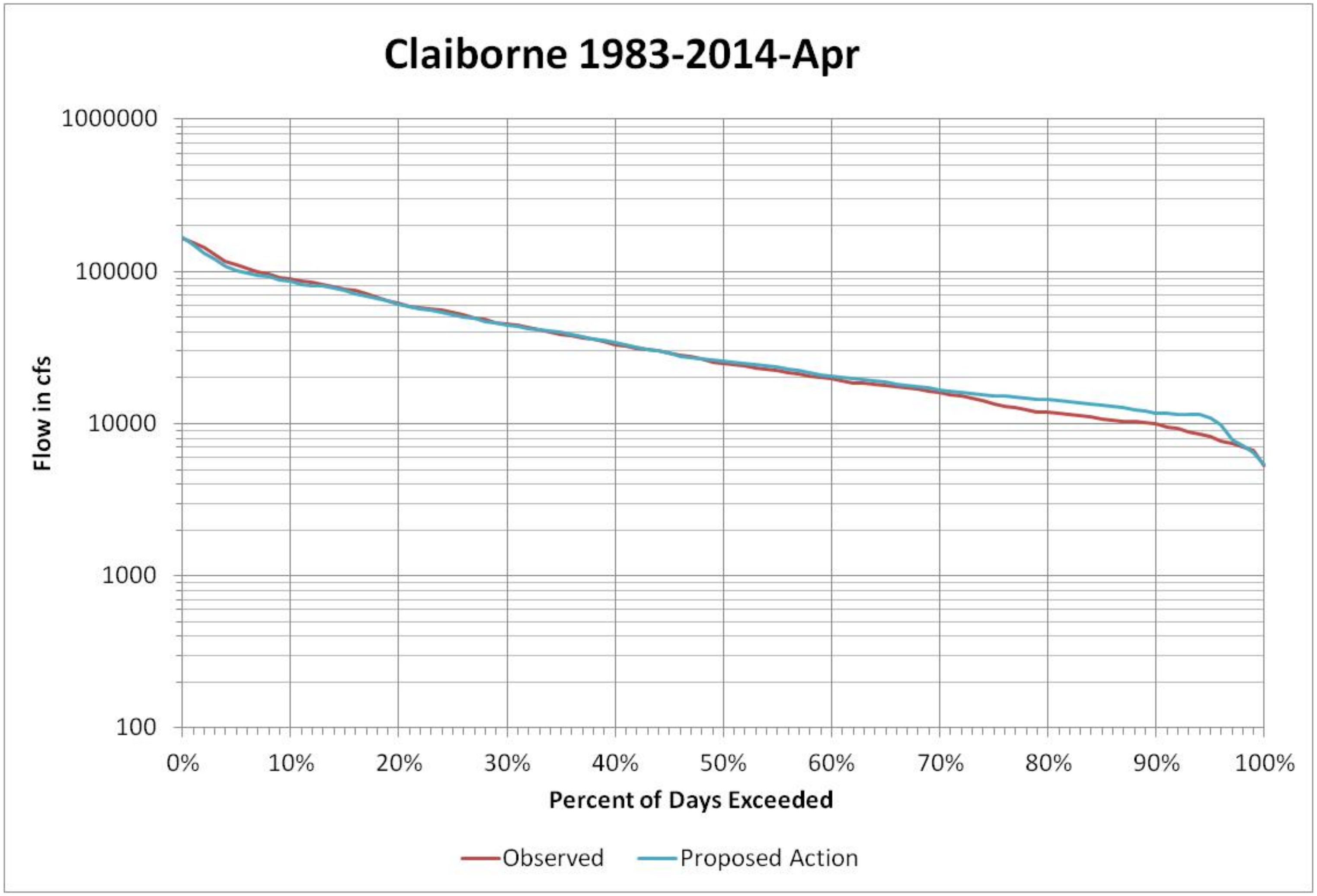


Figure 44. Comparison of Observed Data and Modeled Proposed Action for Average April Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

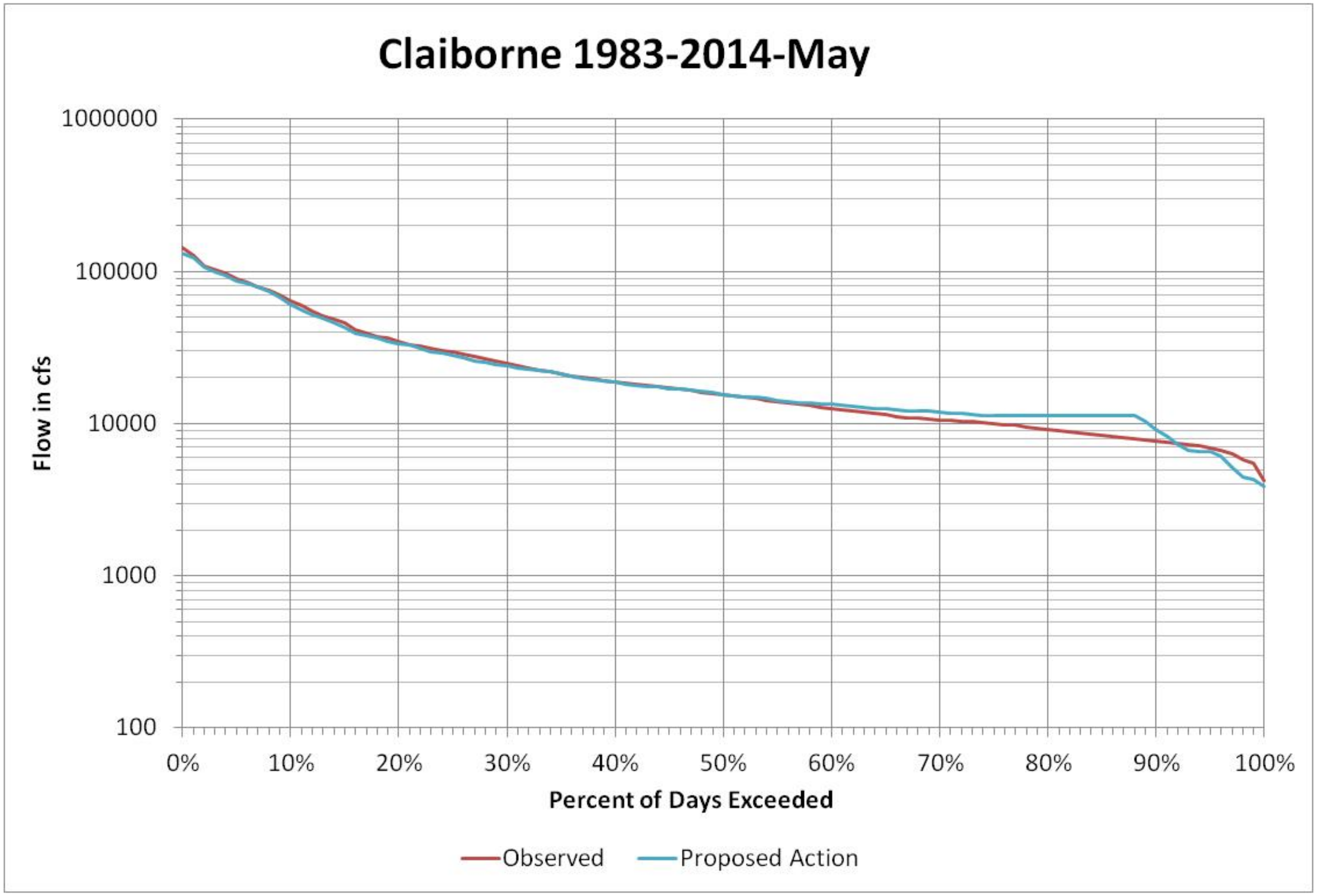


Figure 45. Comparison of Observed Data and Modeled Proposed Action for Average May Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

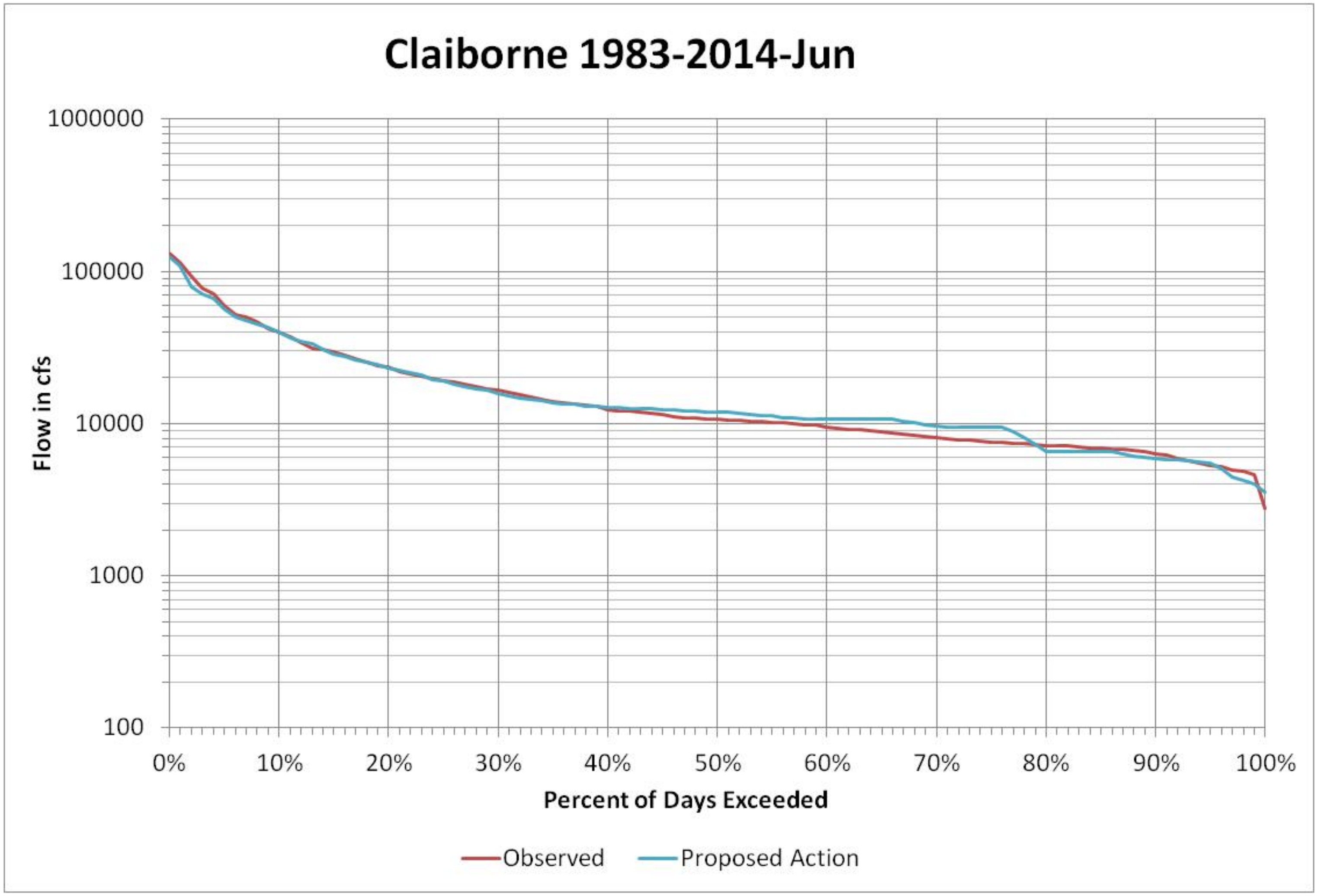


Figure 46. Comparison of Observed Data and Modeled Proposed Action for Average June Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

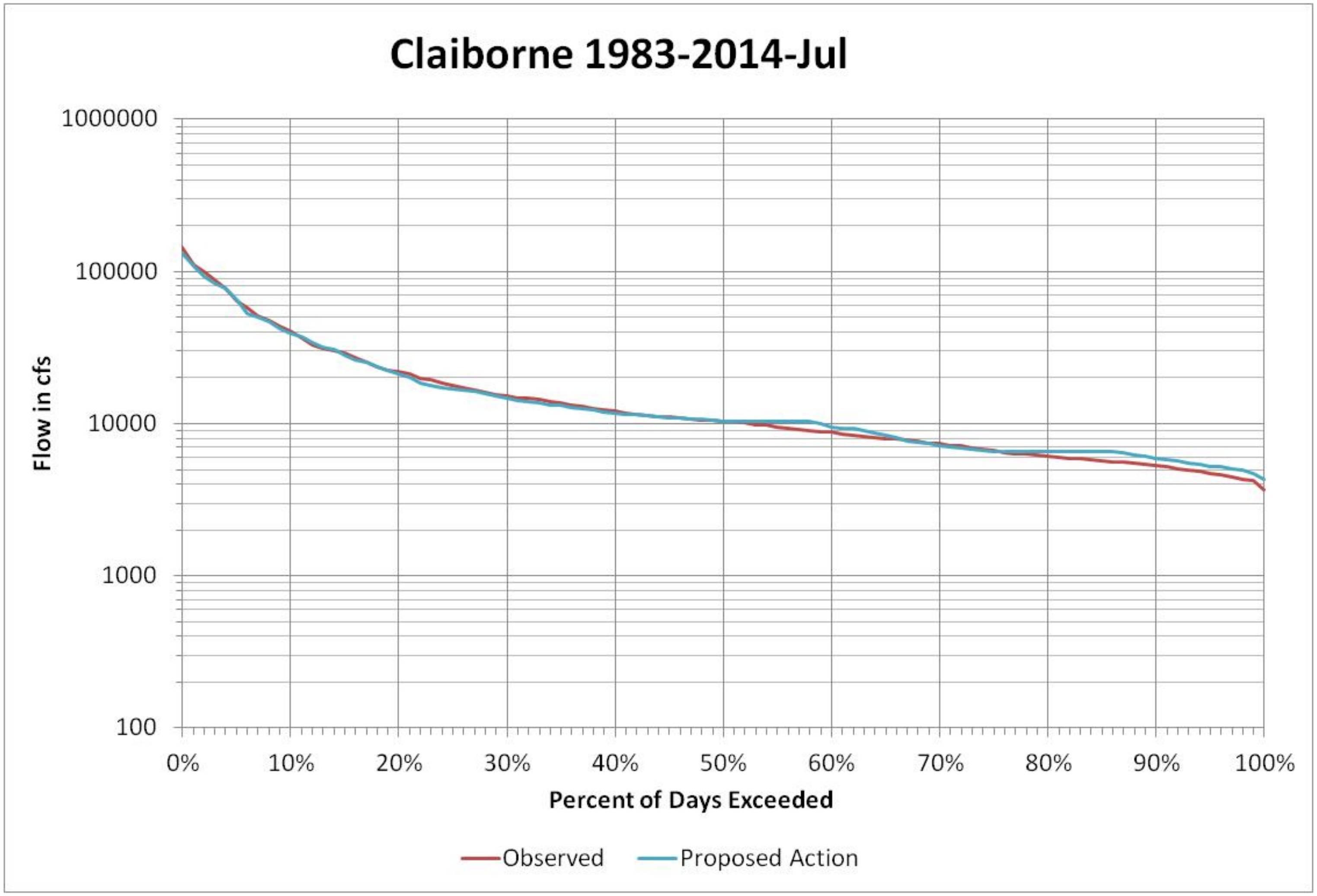


Figure 47. Comparison of Observed Data and Modeled Proposed Action for Average July Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

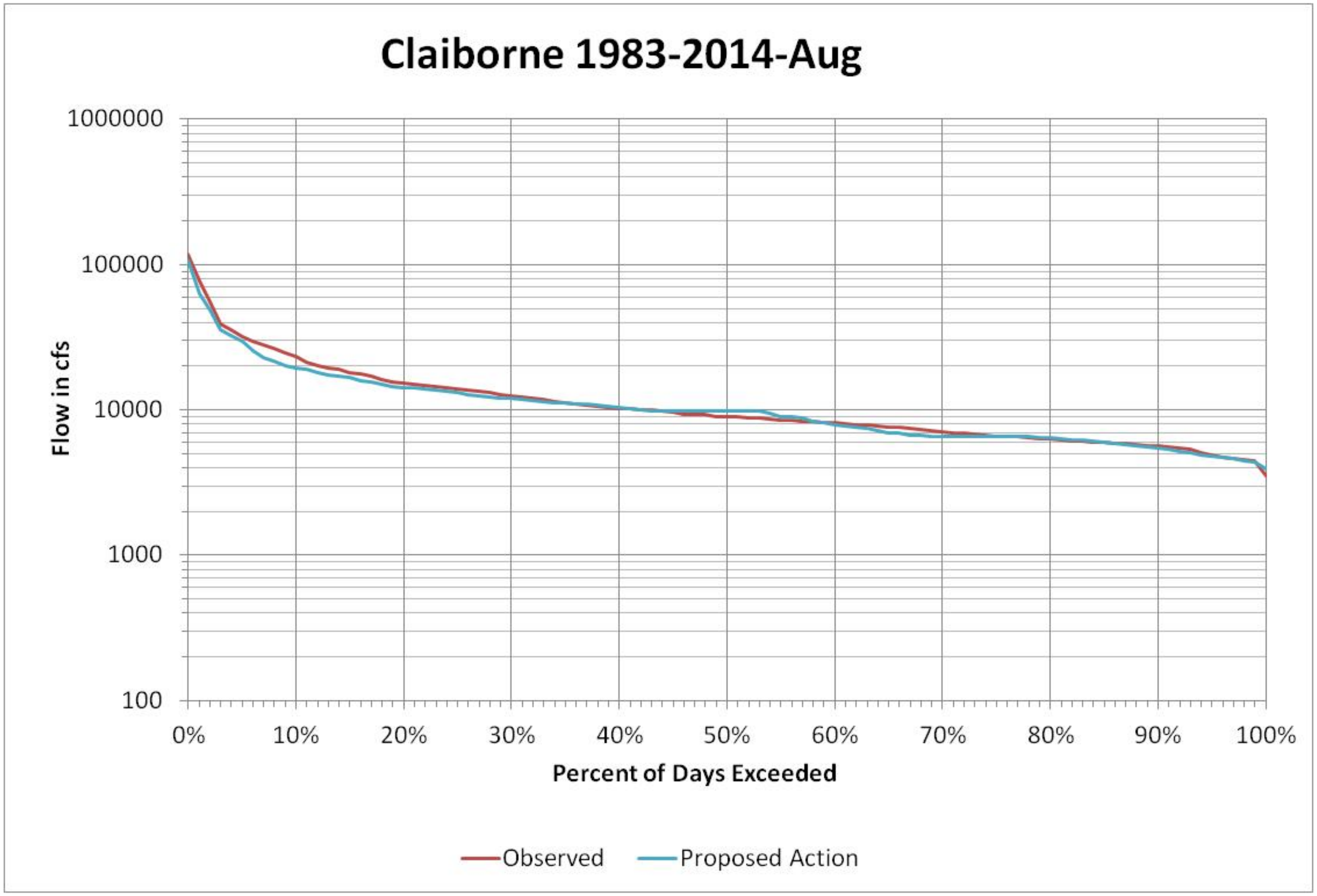


Figure 48. Comparison of Observed Data and Modeled Proposed Action for Average August Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

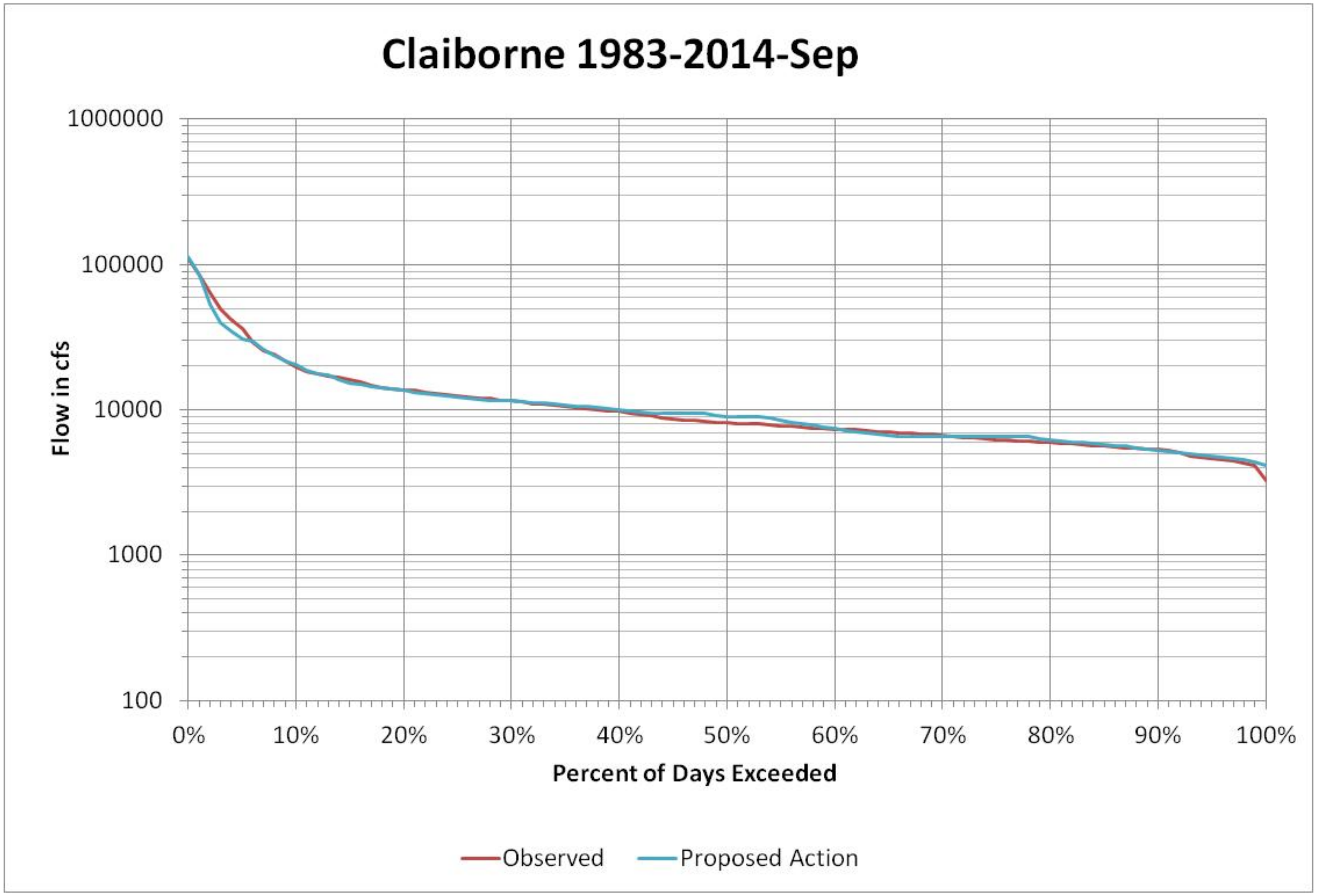


Figure 49. Comparison of Observed Data and Modeled Proposed Action for Average September Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

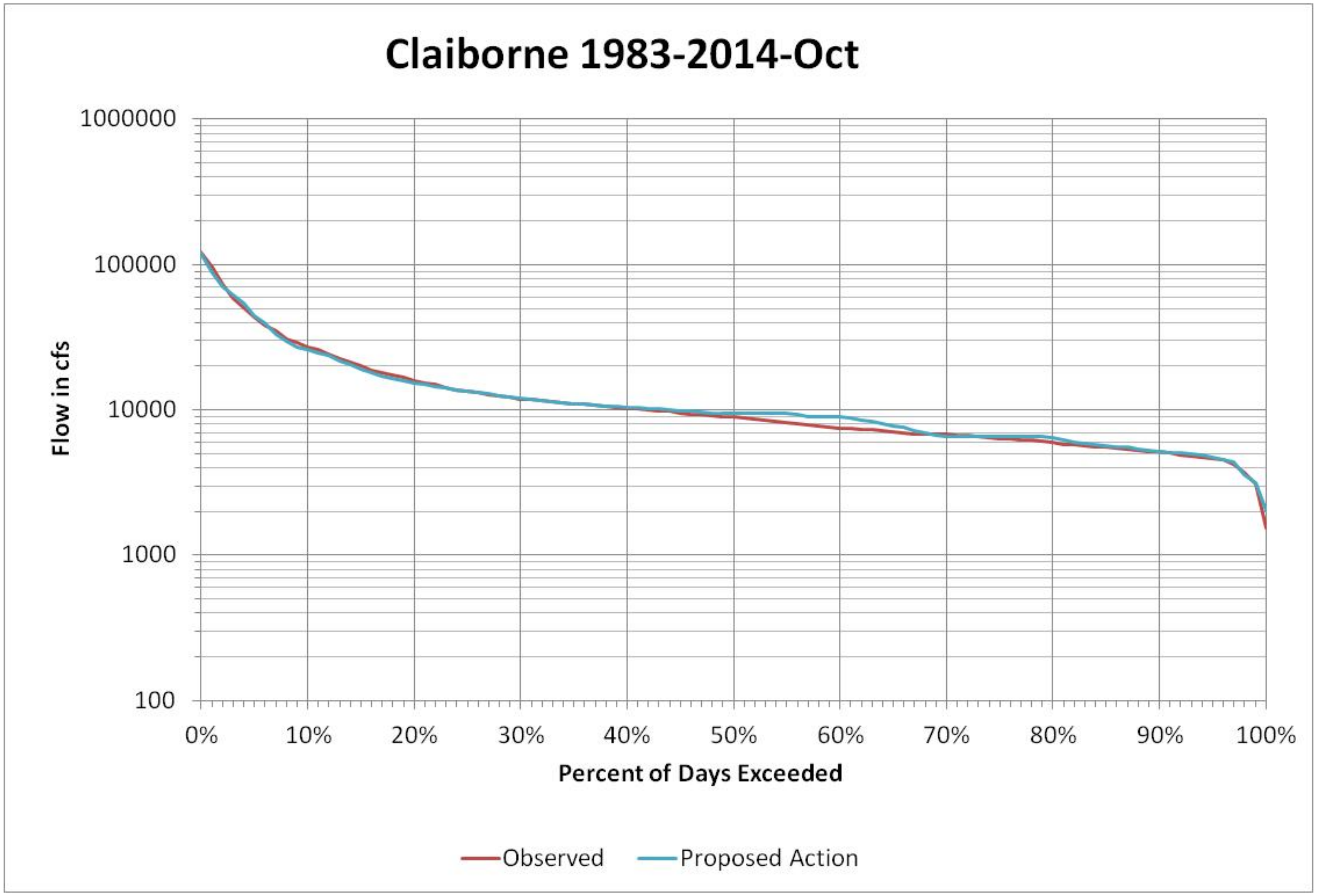


Figure 50. Comparison of Observed Data and Modeled Proposed Action for Average October Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

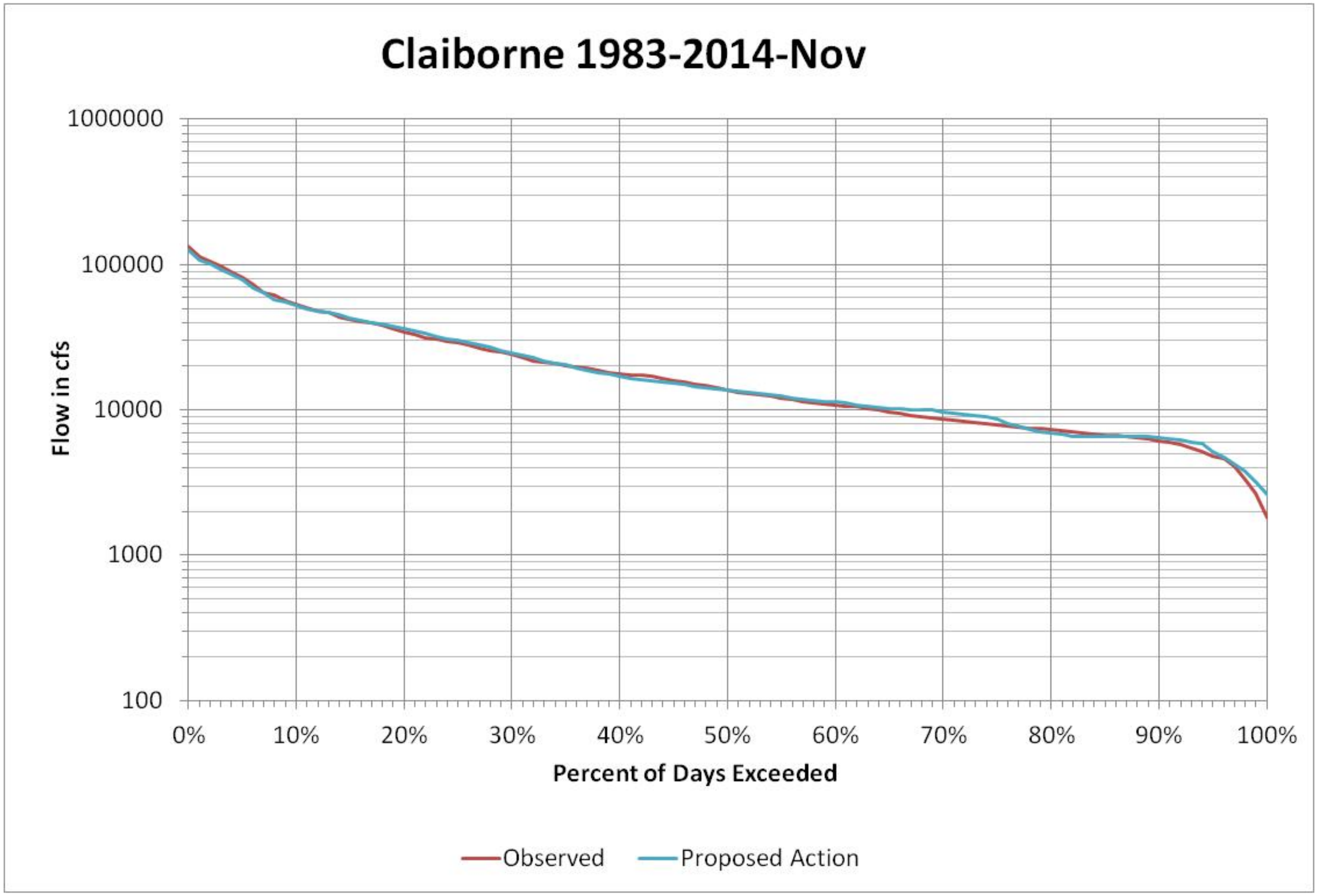


Figure 51. Comparison of Observed Data and Modeled Proposed Action for Average November Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

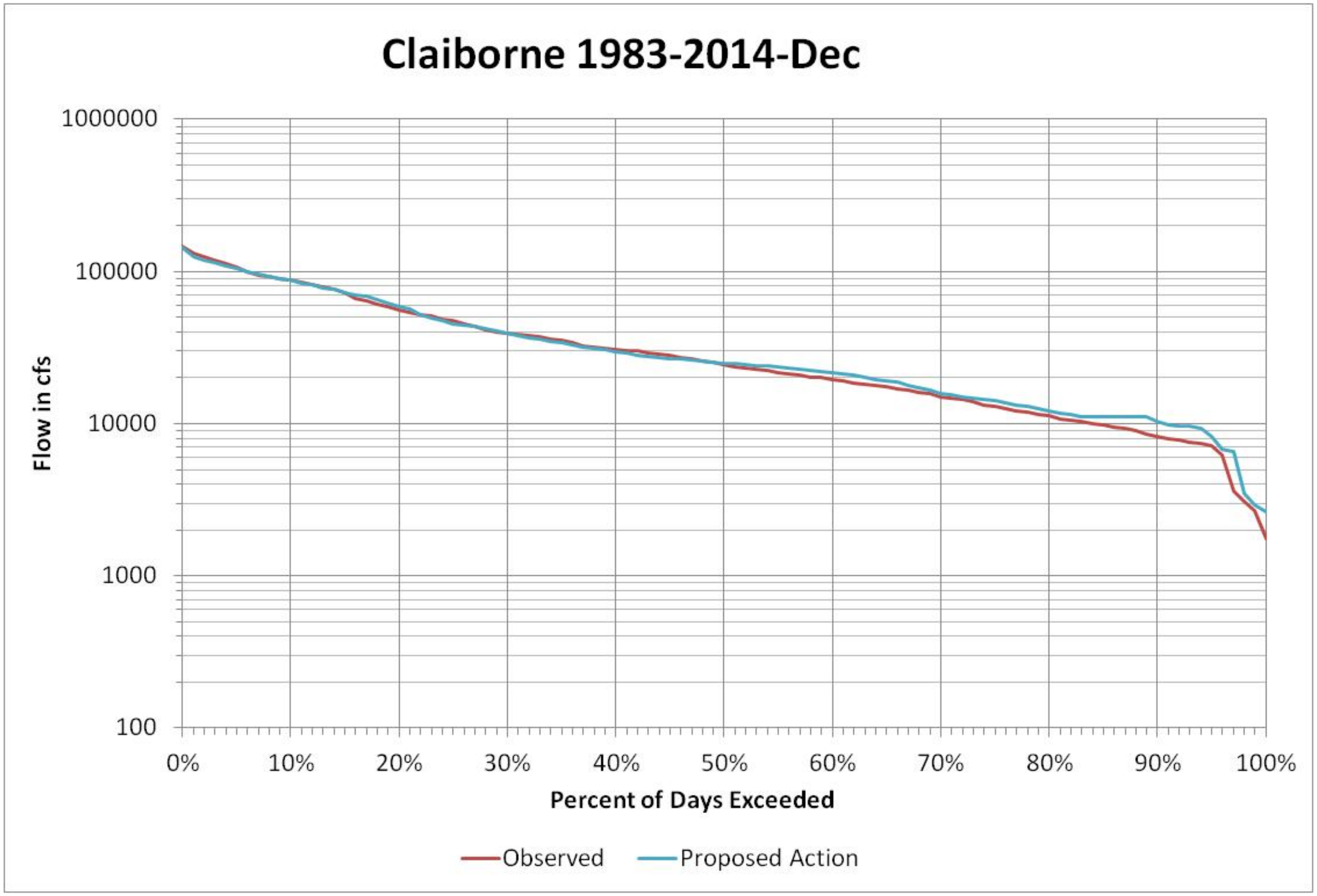


Figure 52. Comparison of Observed Data and Modeled Proposed Action for Average December Flow Duration in Percent Days Exceeded at the Claiborne Dam Tailrace, years 1983-2011.

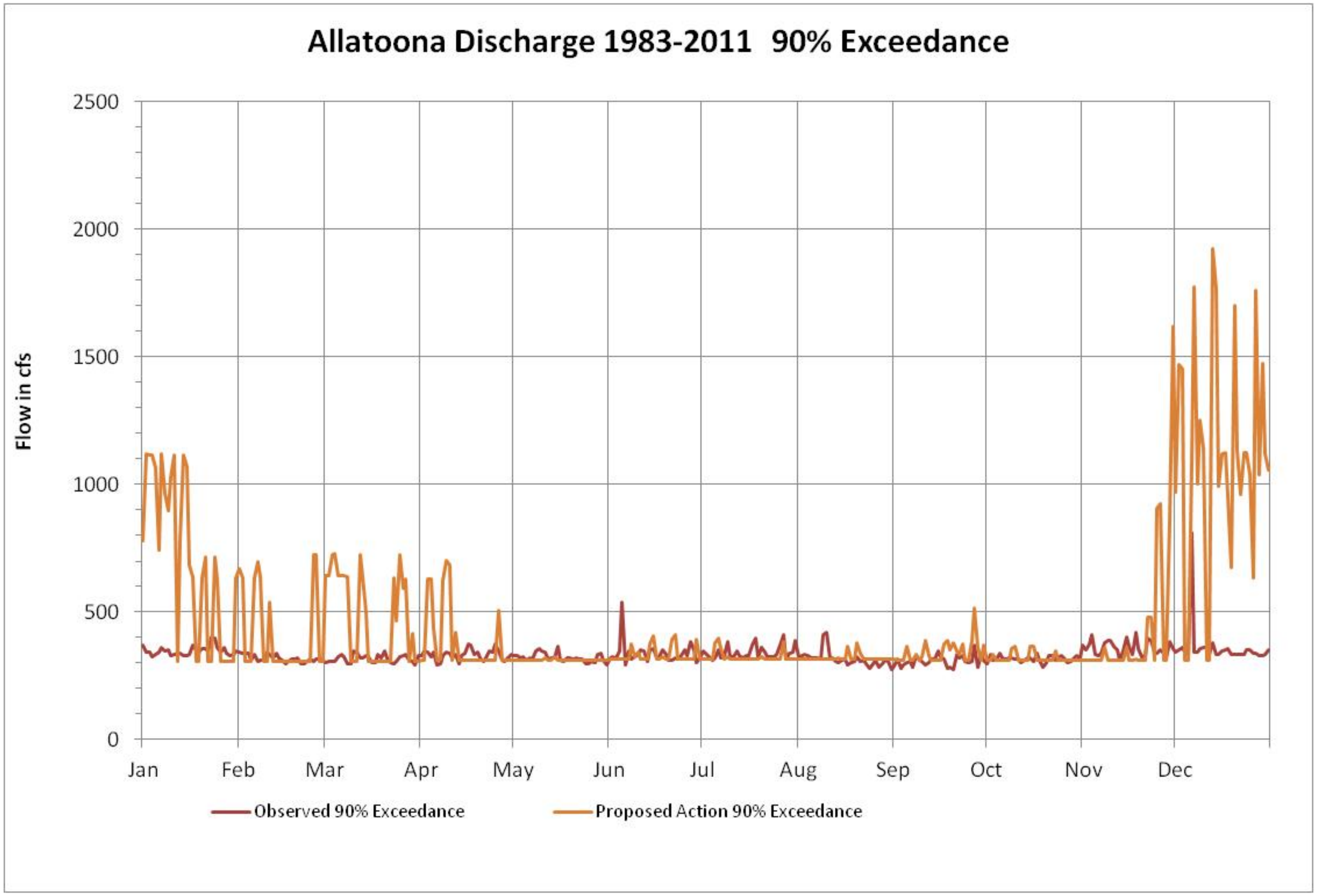


Figure 53. Comparison of Observed Data and Modeled Proposed Action for 90% Exceedance Flow at the Allatoona Dam Tailrace , years 1983-2011.

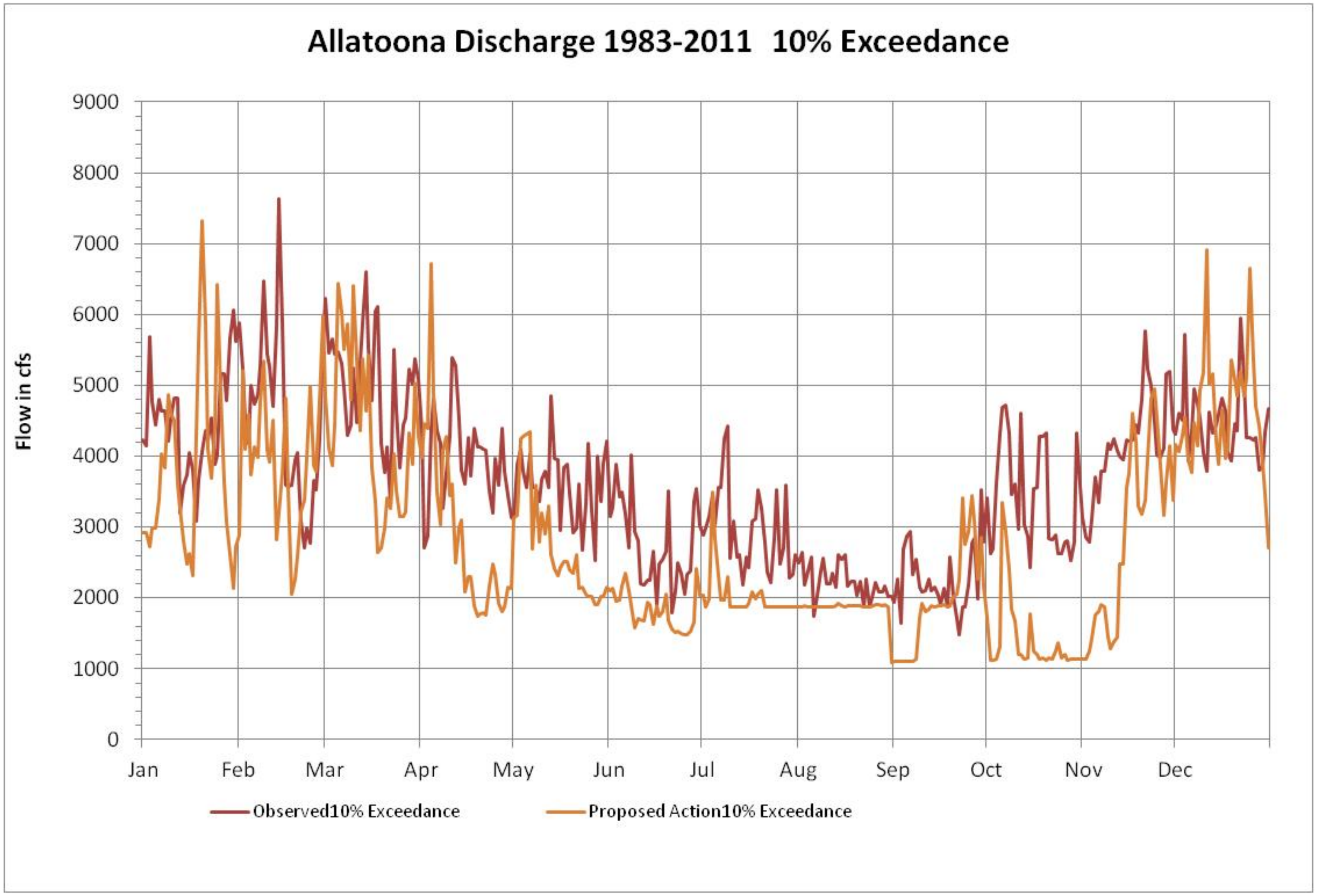


Figure 54. Comparison of Observed Data and Modeled Proposed Action for 10% Exceedance Flow at the Allatoona Dam Tailrace , years 1983-2011.

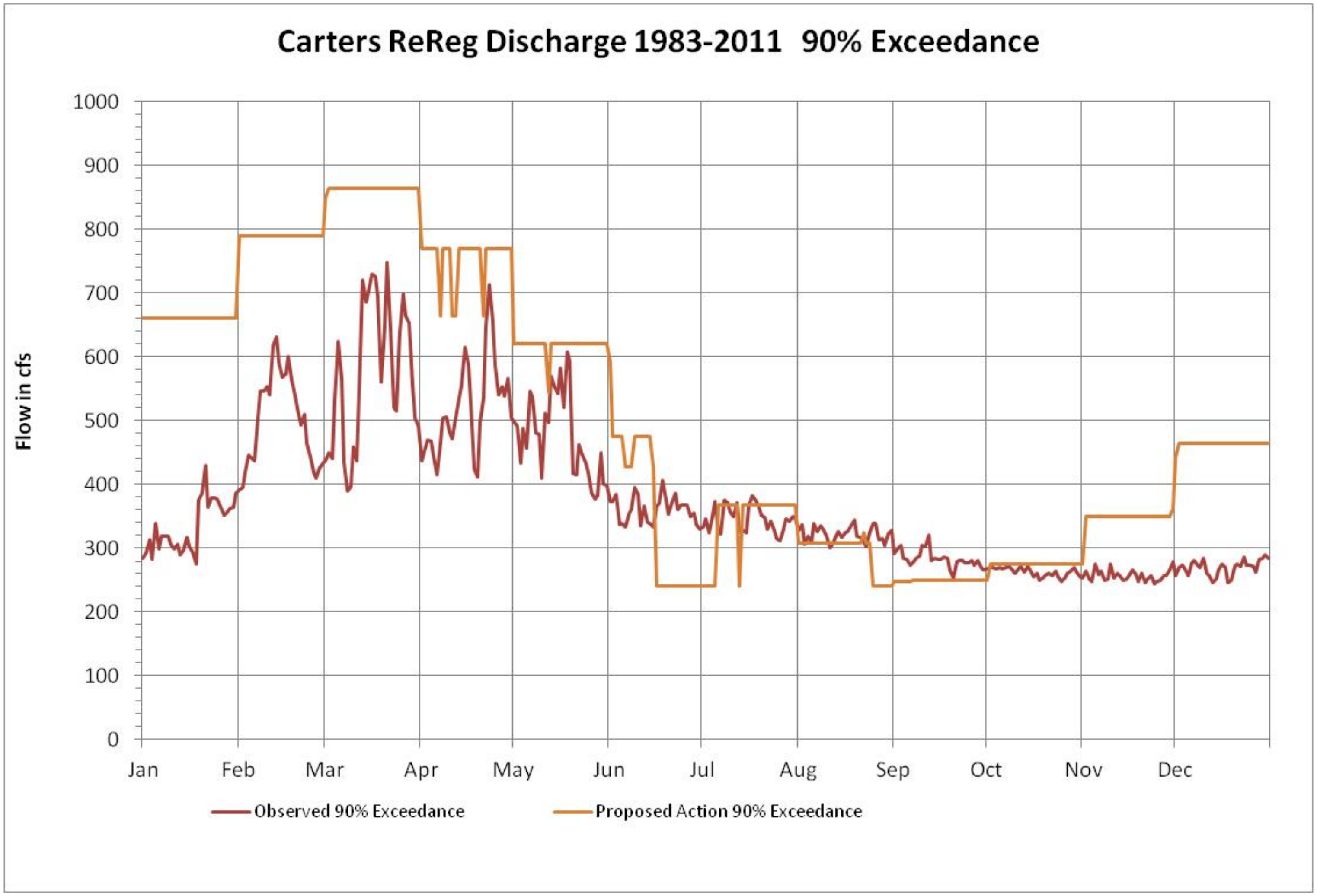


Figure 55. Comparison of Observed Data and Modeled Proposed Action for 90% Exceedance Flow at the Carters Dam Tailrace , years 1983-2011.

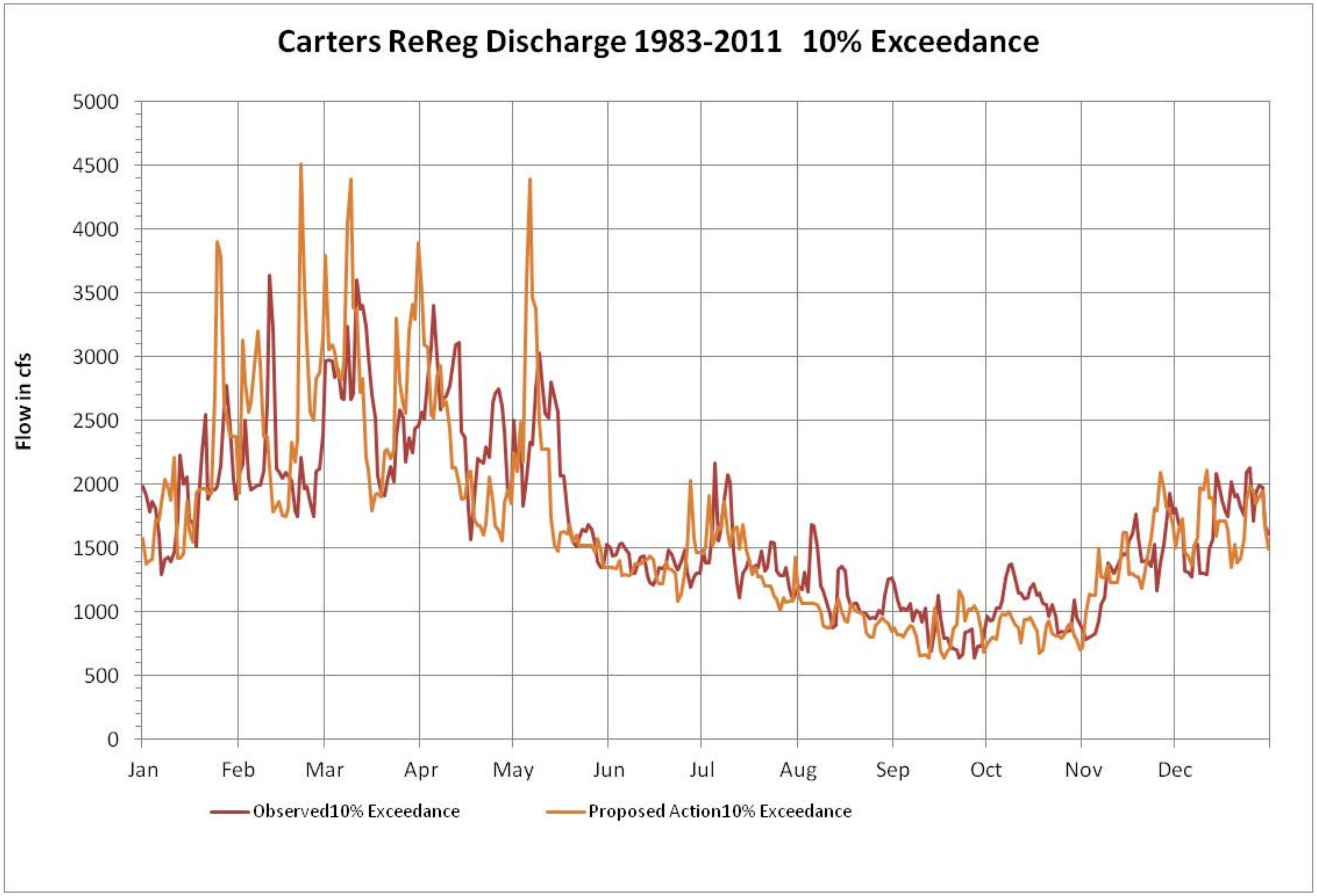


Figure 56. Comparison of Observed Data and Modeled Proposed Action for 10% Exceedance Flow at the Carters Dam Tailrace , years 1983-2011.

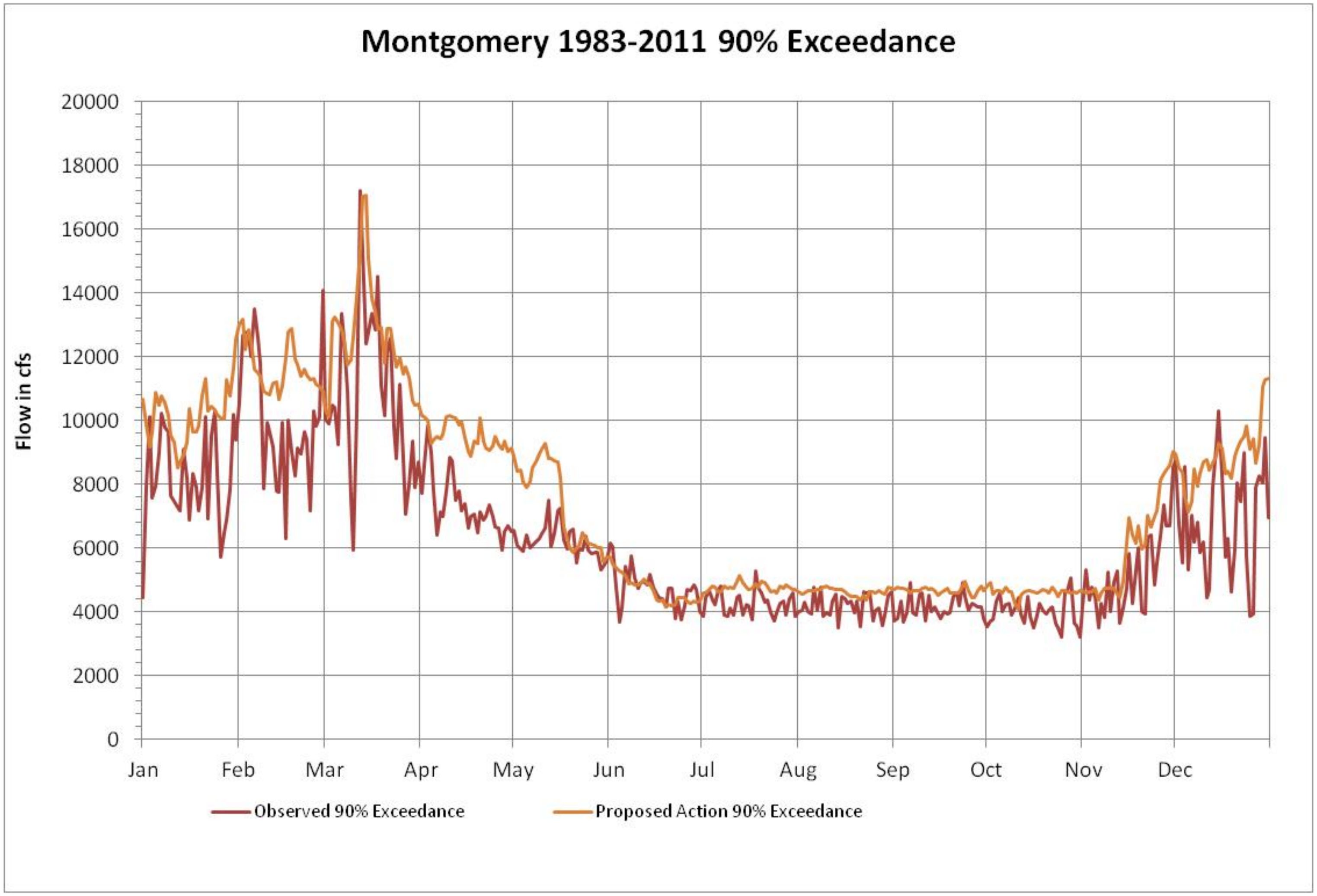


Figure 57. Comparison of Observed Data and Modeled Proposed Action for 90% Exceedance Flow at Montgomery, years 1983-2011.

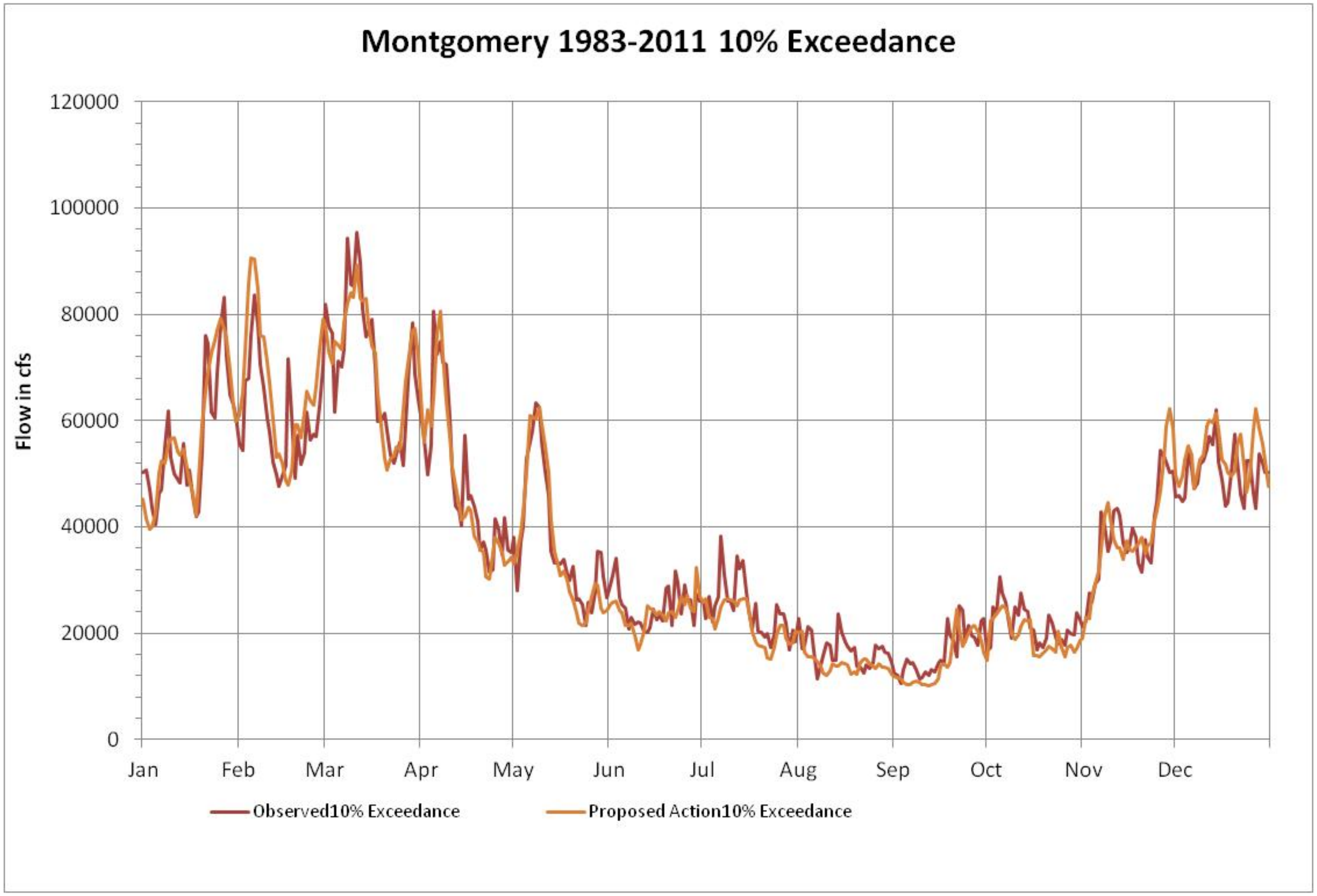


Figure 58. Comparison of Observed Data and Modeled Proposed Action for 10% Exceedance Flow at Montgomery, years 1983-2011.

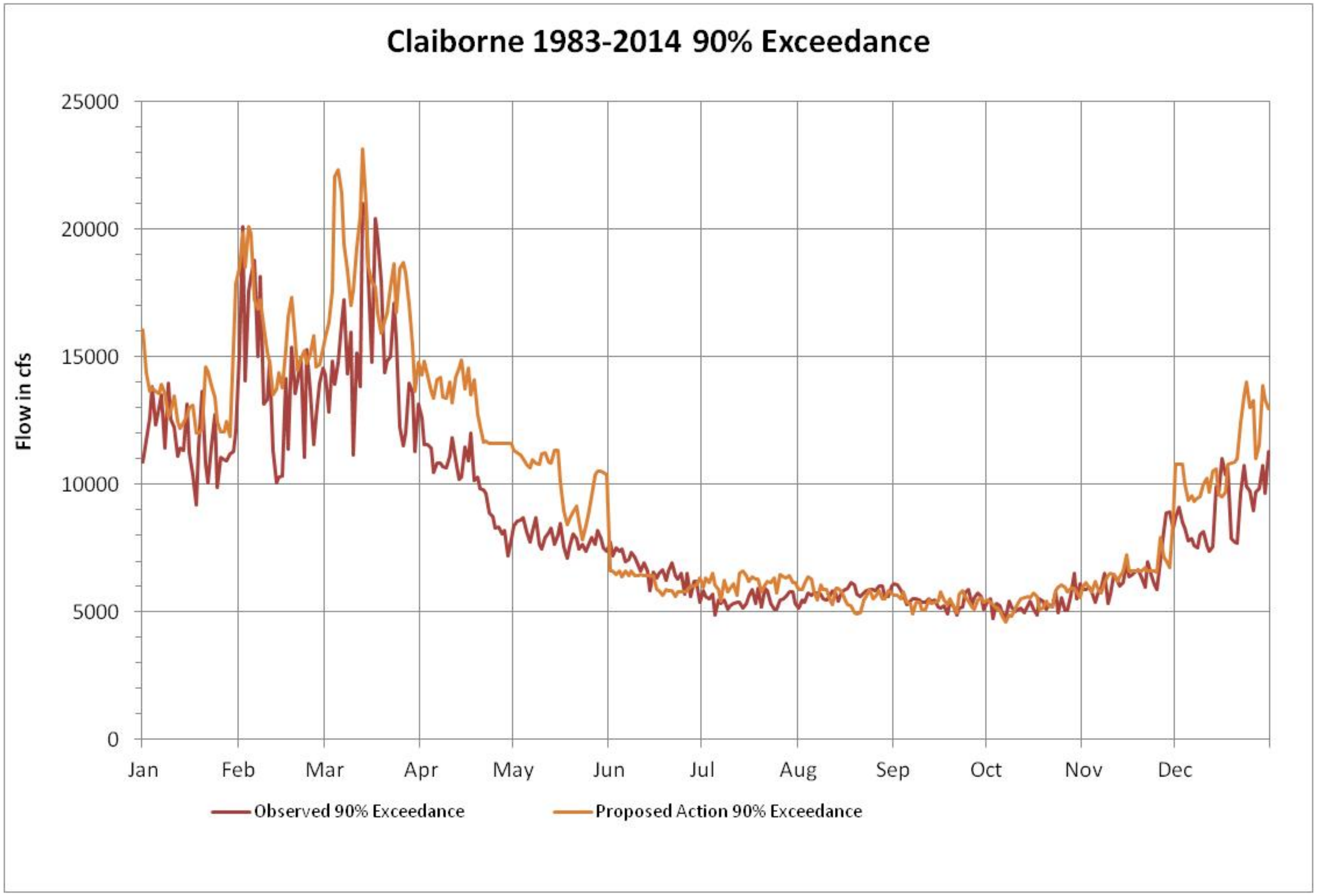


Figure 59. Comparison of Observed Data and Modeled Proposed Action for 90% Exceedance Flow at the Claiborne Dam Tailrace , years 1983-2011.

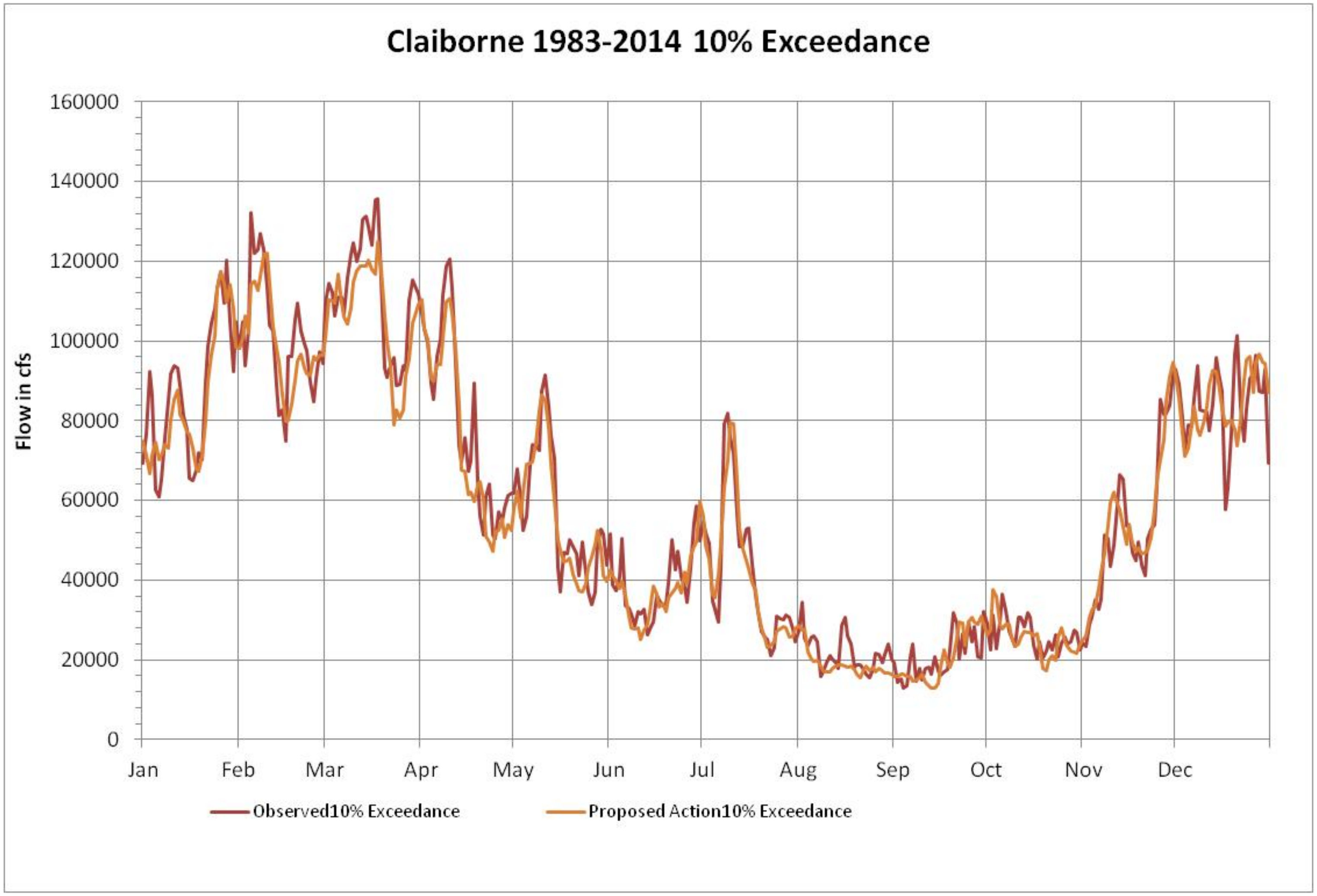


Figure 60. Comparison of Observed Data and Modeled Proposed Action for 10% Exceedance Flow at the Claiborne Dam Tailrace , years 1983-2011.

APPENDIX B ADDENDUM TO BIOLOGICAL ASSESSMENT — PROPOSED UPDATE TO THE WATER CONTROL MANUAL FOR THE ALABAMA-COOSA-TALLAPOOSA RIVER BASIN IN GEORGIA AND ALABAMA, CONSERVATION MEASURES TO BE IMPLEMENTED (2014)

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

March 19, 2014

REPLY TO
ATTENTION OF

Inland Environment Team
Planning and Environmental Division

Mr. William Pearson
Field Supervisor
U.S. Fish and Wildlife Service
1208-B Main Street
Daphne, Alabama 36526

Dear Mr. Pearson:

I am writing in regards to U.S. Army Corps of Engineers (USACE) Biological Assessment (BA) for the proposed Water Control Manual update for the Alabama-Coosa-Tallapoosa River basin. The BA was provided to you by letter dated February 18, 2014. The enclosed addendum to the BA provides further information that we wish to include.

Thank you for your continued assistance in the update of the WCM. If you have any questions regarding the BA, this addendum or wish to discuss it or the proposed action either by telephone or in person, please contact Mr. Chuck Sumner at (251) 694-3857 or email at lewis.c.sumner@usace.army.mil.

Sincerely,

for [signature]
Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosure

ADDENDUM TO BIOLOGICAL ASSESSMENT

PROPOSED UPDATE OF THE WATER CONTROL MANUAL FOR THE ALABAMA-COOSA-TALLAPOOSA RIVER BASIN IN GEORGIA AND ALABAMA, CONSERVATION MEASURES TO BE IMPLEMENTED

Based on continuing discussion and consultation between USACE and the Service, and pursuant to informal consultation procedures of the Endangered Species Act, the following conservation measures will be implemented by USACE. The purpose of the measures is to confirm that there would be no adverse affect to amber darter and mussel Critical Habitat in the Coosawattee River below Carters Dam. A specific plan of implementation for each measure will be developed jointly by the Service and USACE within 60 days of Service concurrence with the "may affect but not likely to adversely affect" determination as stated within the BA. The schedule for implementation of the measures would be subject to currently available and future funding.

1. **Quantify the stage-discharge relationships at ungaged sites in the Coosawattee River.**

   Measurements will be taken to determine the relationship between flow releases at Carters Re-regulation dam and river stage at specific locations below the dam. The exact number and locations will be determined in further collaboration but is estimated to not exceed three sites including existing gage sites at Pine Chapel and Carters at four flow rates.

   Rationale: Stage-discharge relationships for ungaged locations are critical for determining water level changes in response to dam operation changes. Water level increases or decreases can result in a change in the net amount or spatial distribution of mesohabitats. Recording water level in the lower river during known flows will aid in the evaluation of effects at the mesohabitat scale.

2. **Assess the spatial distribution and amount of shallow mesohabitats as a function of discharge.**

   Shallow water habitat suitable for Amber Darter continued survival and reproduction will be mapped from near Carters Re-regulation Dam to the confluence with the Conasauga River forming the Oostanaula River. This task will primarily involve identification of shoals and riffles, and general sediment descriptions, with a goal to identify the number, location and extent of those areas. Combined with the stage-discharge relationships, effects on both the net area and spatial distribution of shallow habitats can be assessed. The specific methodology is to be determined in collaboration, but will generally involve multiple transects the length of the river mapping bathymetry and sediment characteristics.

Rationale: Approximately 20 sites have previously been identified by the Service as potential shallow-water amber darter habitat locations in the Coosawattee River. However, these locations were crudely characterized using limited technologies, and were identified at a range of discharges, thereby confounding the identification of shallow locations. However, it was concluded that shallow habitats seemed to be limited in the Coosawattee River. Additional detailed habitat mapping is needed to determine the number and extent of the sites.

3. **Characterize habitat characteristics within representative shallow mesohabitats at a range of discharges.**

   A subset of the number of sites identified from task 2 above will be sampled to determine suitable microhabitat within them. The task will involve determining bed sediment size, vegetative cover, water depth, and velocity along transects at a minimum of four discharges. The specific methodology will be determined in collaboration but is estimated to include ten shoal habitat locations previously identified.

   Rationale: The amount of suitable microhabitat within shoals and riffles varies with flow magnitude. This general methodology will enable USACE to determine the extent to which the microhabitats that are nested within mesohabitats are affected.

If, as a result of tasks 1-3 listed above, a determination is made that a degradation of the extent or quality of amber darter shoal habitat in the Coosawattee River is occurring as a result of the proposed action and that such degradation could over time lead to an adverse affect to the species, further consultation with the Service would be conducted to determine appropriate further actions such as fish sampling or other conservation measures.

4. **Assess potential bank erosion rate as a function of discharge.**

   River bank erosion will be estimated by visual identification of likely erosion sites, followed by physical measurement of bank locations compared to fixed points such as stakes, trees, pilings, etc. Photographic evidence of erosion will be made and included as part of a determination of overall effect of the proposed action on river bank erosion in the Coosawattee River. The estimated rate of bank erosion due to the proposed action will be compared to the baseline erosion rate under current conditions. The baseline rate will be estimated using visual identification and measurement as described above and any other available information such as existing stage-discharge data from existing gages and any available historic aerial photography. The specific methodology will be determined in collaboration and will include specific sites and flows for inclusion.

   Rationale: The geomorphic response to baseflow alteration under the Proposed Action Alternative is not expected to be extreme. There may be minor effects to channel morphology, suspended sediment load, and bed sediment composition should channel banks erode at rates that exceed erosion rates under the No Action Alternative. Alteration to the bed sediment composition could affect habitat used by both Amber Darter and mussel Critical Habitat in the river.

If, as a result of task 4, a determination is made that excessive bank erosion in the Coosawattee River is occurring as a result of the proposed action and that such erosion could over time lead to an adverse affect to listed mussel Critical Habiat, further consultation with the Service would be conducted to determine appropriate further actions.

APPENDIX C USFWS LETTER OF CONCURRENCE WITH 2014 BIOLOGICAL ASSESSMENT (MARCH 20, 2014)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1208-B Main Street
Daphne, Alabama 36526

IN REPLY REFER TO
2010-I-0141

MAR 20 2014

Colonel Jon J. Chytka
U.S. Army Corps of Engineers, Mobile District
P.O. Box 2288
Mobile, AL 36628-0001

Dear Colonel Chytka:

This letter responds to your Biological Assessment (BA), received on February 20, 2014, and your request for concurrence that all effects of the Proposed Action, the Water Control Manual (WCM) updates for the Alabama-Coosa-Tallapoosa (ACT) River Basin, will have either "no effect" or "may affect, but not likely to adversely affect" endangered or threatened species. We have reviewed the information and provide the following comments in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. § 1531 *et seq.*). It should be noted that the scheduling of hydropower per the Corps-Southeastern Power Administration (SEPA) contract is a federal action that is separate, but related to the federal action of the WCM update. Hence, consultation regarding the SEPA contract is not covered under this consultation. Our comments regarding compliance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. § 661 *et seq.*), and the Migratory Bird Treaty Act (40 Stat. 755, as amended; 16 U.S.C. § 703 *et seq.*) were provided in the Draft Fish and Wildlife Coordination Act Report, dated December 21, 2012. Those comments remain valid.

<u>Proposed Action</u>

Below is a summary of operations under the Proposed Action. Details of the operations can be found in Section 5 of the Draft Environmental Impact Statement. Operations under the Proposed Action include the following:

• Implement a revised drought plan, the Alabama Drought Response Operations Proposal (ADROP), with enhancements recommended by the Service.

• Provide for seasonal navigation releases to support commercial navigation in the Alabama River for a 9.0-ft or 7.5-ft channel depth as long as sufficient basin inflow above the APC projects is available. When sufficient flows cannot be provided to continue to support a minimum 7.5-ft navigation channel, navigation could be impeded and flows at Montgomery would be reduced to 4,640 cfs (7Q10). If one or more of the ADROP drought operations triggers are met, minimum flows at Montgomery would be dropped below 4,640 cfs.

PHONE: 251-441-5181 FAX: 251-441-6222

•Alabama Power Company (APC) projects would continue to operate under their current Federal Energy Regulatory Commission licenses with specific operational requirements.

• The APC project, H. Neely Henry Lake (Coosa River), which operates with a revised guide curve under a FERC license variance (with Corps concurrence) would continue to operate under its revised guide curve.

• Allatoona Reservoir would continue to provide for a 240-cfs minimum flow.

• The existing guide curve at Allatoona Reservoir would be revised to implement a phased fall drawdown period from early September through December. Refined operations at Allatoona Reservoir would include use of four action zones shaped to mimic the seasonal demands for hydropower.

• Refined operations at Carters Reservoir would include the use of two action zones to manage downstream releases. The current minimum flow requirement would remain 240 cfs from Carters Reregulation Dam when in zone 2. Zone 1 operations include a seasonally varying minimum flow.

• The Corps reserves 6,371 ac-ft of storage space in Allatoona Reservoir for water supply for the City of Cartersville, GA and 13,140 ac-ft for the Cobb County Marietta Water Authority. Total storage space allocated to water supply is 19,511 ac-ft.

• The Corps reserves 818 ac-ft in Carters Reservoir for water supply for the City of Chatsworth, GA.

• The Corps would continue to manage fish spawning operations at Allatoona Reservoir.

• The Corps would continue migratory fish passage operations at Claiborne Lock and Dam and Millers Ferry Lock and Dam.

Conservation Measures

Conservation measures have been agreed upon by the Corps and the U.S. Fish and Wildlife Service (Service) on the Coosawattee River below Carters Dam, in a March 19, 2014, Addendum to the BA which was provided by your staff. The purpose of the measures is to confirm that there would be no adverse affect to the amber darter and mussel Critical Habitat in the Coosawattee River below Carters Dam. A specific plan of implementation for each measure will be developed jointly by the Service and Corps within 60 days of this letter. We look forward to implementing the monitoring plan included in the conservation measures and to future coordination with the Corps.

<u>Recommendations</u>

To protect the integrity of the ACT Basin and provide enhancements for listed species we provide the following recommendations:

- Continue migratory fish passage operations at Claiborne Lock and Dam and Millers Ferry Lock and Dam. We recommend the Corps continue working with the Alabama River Fish Passage Working Group and support further research to determine the efficacy of conservation lockages.
- Develop a basin wide Conservation Plan pursuant to Section 7(a)(1) of the ESA which requires all Federal agencies to use their authorities to carry out programs for the conservation (i.e., recovery) of endangered and threatened species and includes specific conservation measures that are contingent upon opportunity and annual appropriations, and other authority and budgetary constraints.
- Continue communication with the Alabama Drought Response Operations Proposal (ADROP) partnership.
- Develop an adaptive management plan and monitoring program to allow greater understanding of riverine ecosystem response to complex variables programs, to determine the effects the updated operations on federally protected species, migratory and resident fishes, and macroinvertebrates (e.g., mussel and snail populations) and add additional data to models as more data are collected.
- The May 3, 2010, Planning Aid Letter identifies research that is useful for the management of natural resources and river flows in an informed manner. These research needs remain pertinent, and we look forward to addressing them in collaboration with you.
- Future modifications to Corps dams (e.g. replacement of turbines, generators, or parts therein) or contracts may require consultation, and temporary maintenance activities may represent research opportunities. Therefore, we recommend semiannual meetings between the Service and the Corps to discuss foreseeable modifications and maintenance activities.

<u>Conclusion</u>

We have reviewed the information provided in your correspondence and concur with your determination that the proposed action will have either "no effect" or "may affect, but not likely to adversely affect" federally endangered or threatened species or adversely modify critical habitat. In view of this, we believe that requirements of section 7 of the ESA have been satisfied. However, obligations under section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner that was not previously considered; (2) this action is subsequently modified in a manner not previously considered in this assessment; or, (3) a new species is listed or critical habitat determined that may be affected by the identified action

If you have any questions, please contact Alabama Ecological Services Field Office staff biologist Jennifer Pritchett (251) 441-6633 or Georgia Ecological Services Field Office staff biologists Alice Lawrence or Will Duncan at (706) 613-9493.

Sincerely,

William J. Pearson

William J. Pearson
Field Supervisor
Alabama Ecological Services Field Office

cc: Georgia Ecological Services Field Office, attention Will Duncan and Alice Lawrence

APPENDIX D WATER QUANTITY AND WATER QUALITY FIGURES

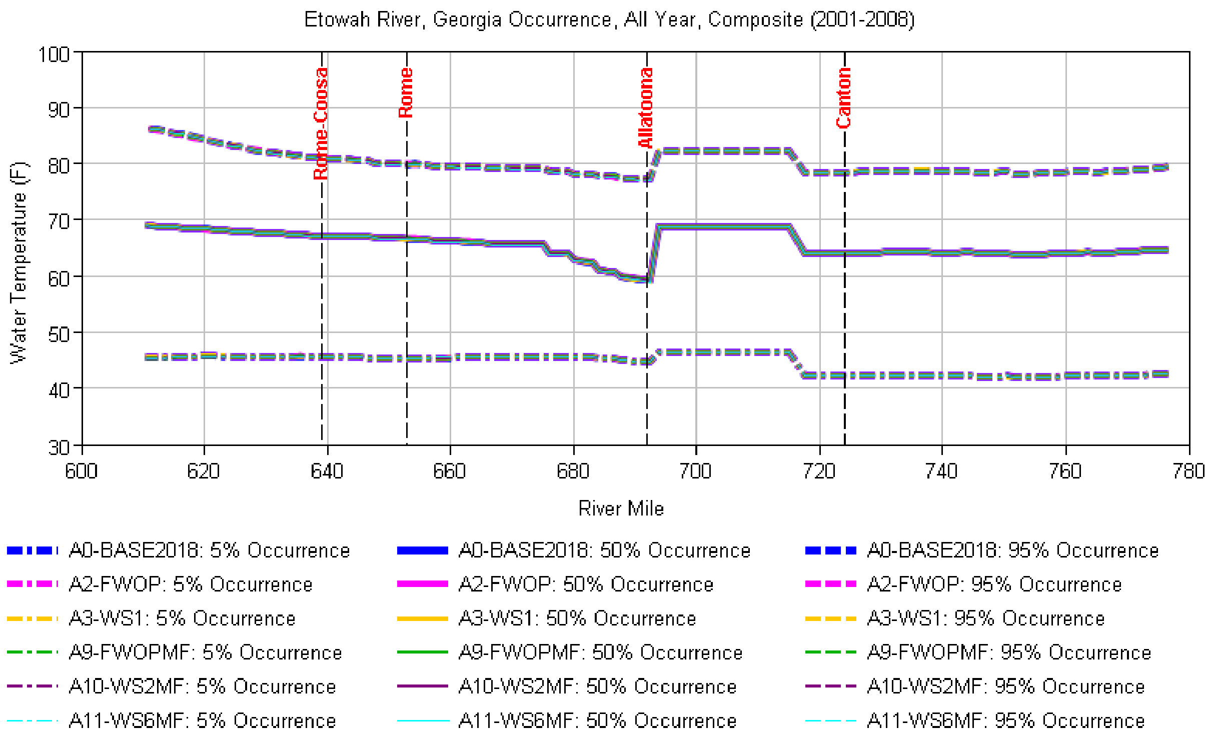


Figure D-1. ***Water Temperature Occurrence for the Etowah River (2001–2008).***

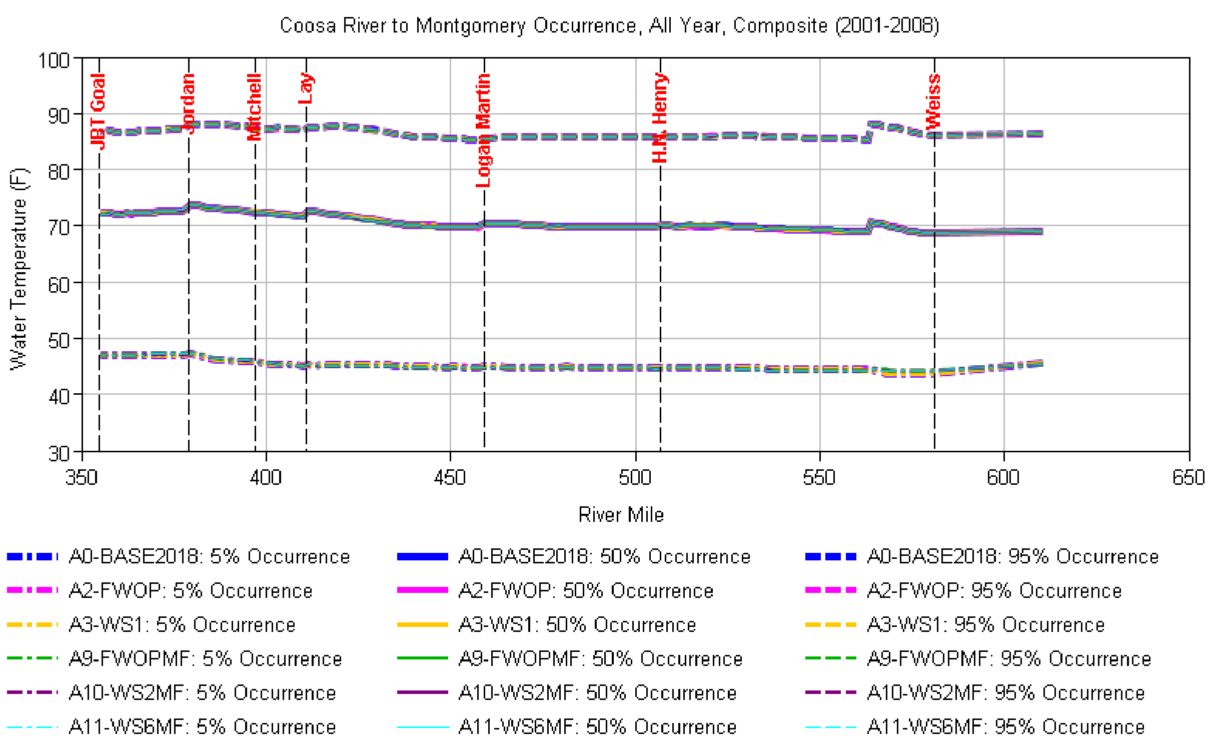


Figure D-2. Water Temperature Occurrence for the Coosa River (2001–2008).

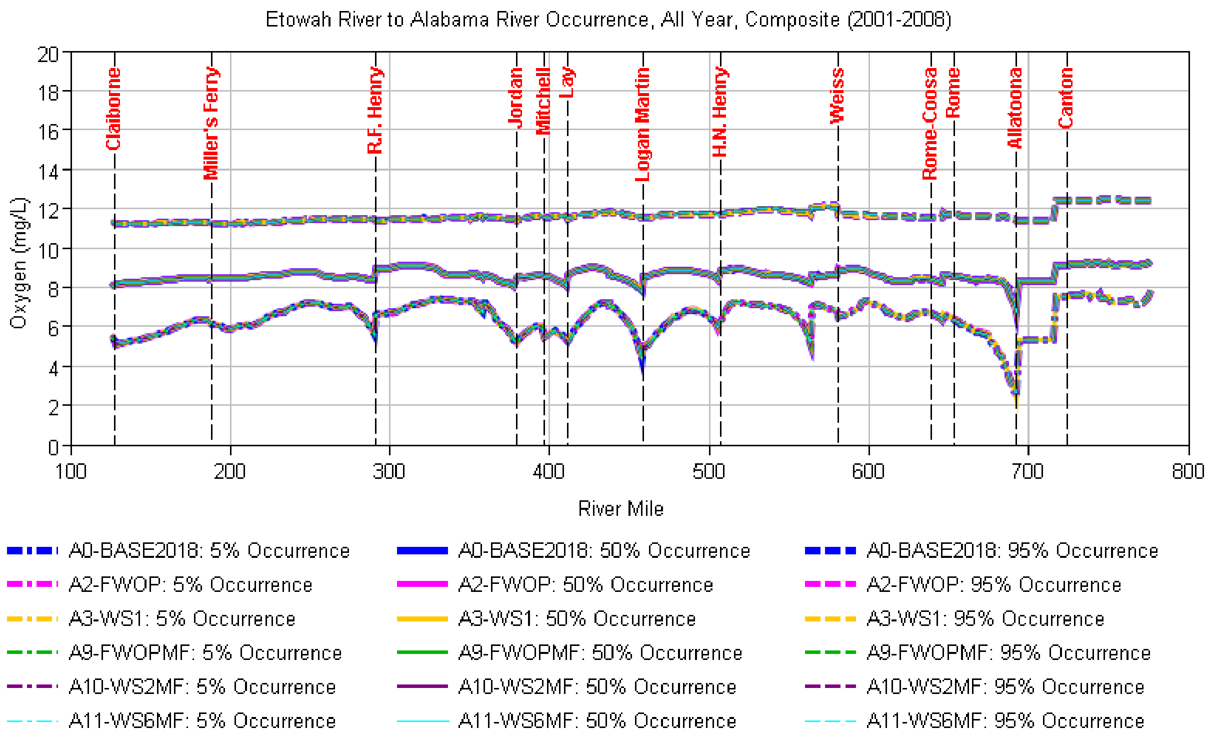


Figure D-3. DO Occurrence for the Etowah River (2001–2008).

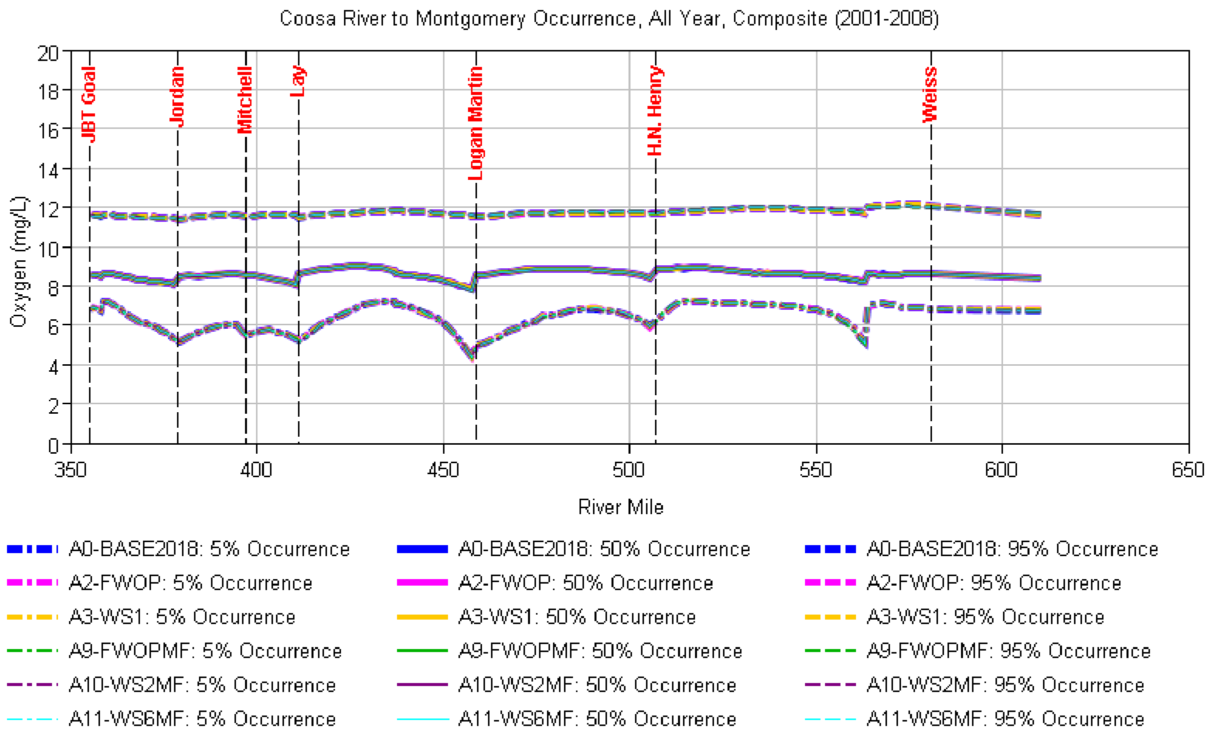


Figure D-4. DO Occurrence for the Coosa River (2001–2008).

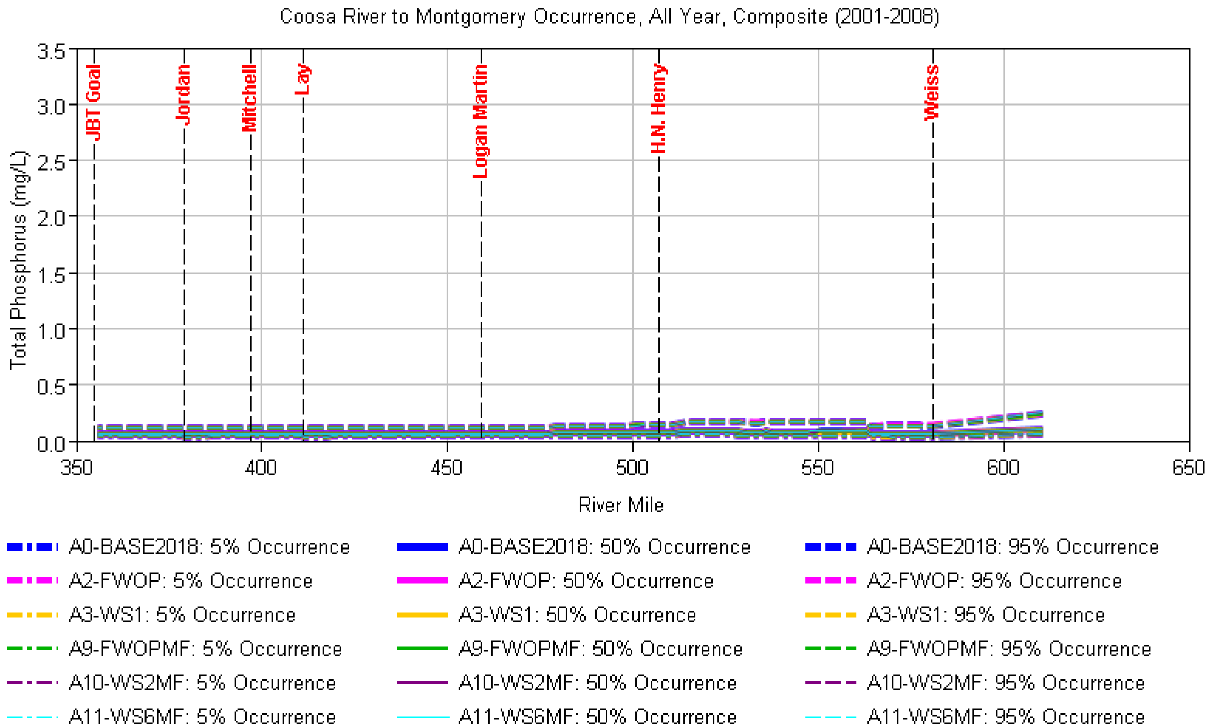


Figure D-5. TP Occurrence for the Coosa River (2001–2008).

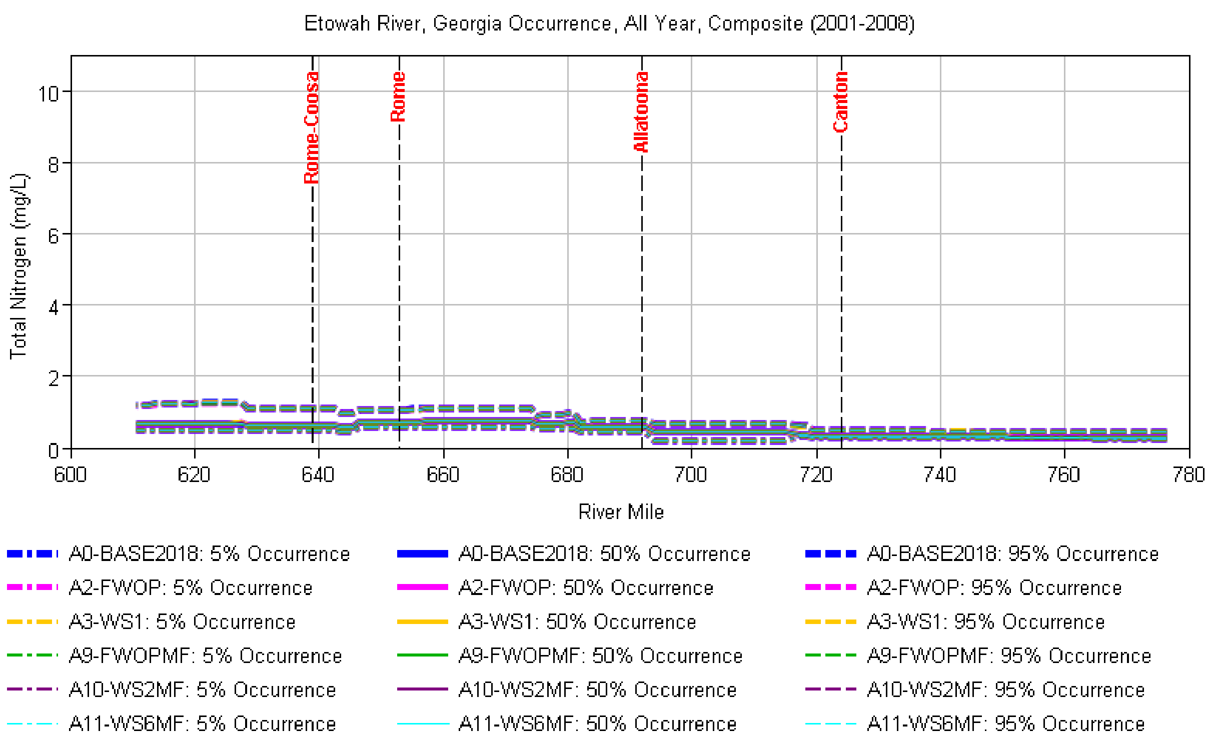


Figure D-6. TN Occurrence for the Etowah River (2001–2008).

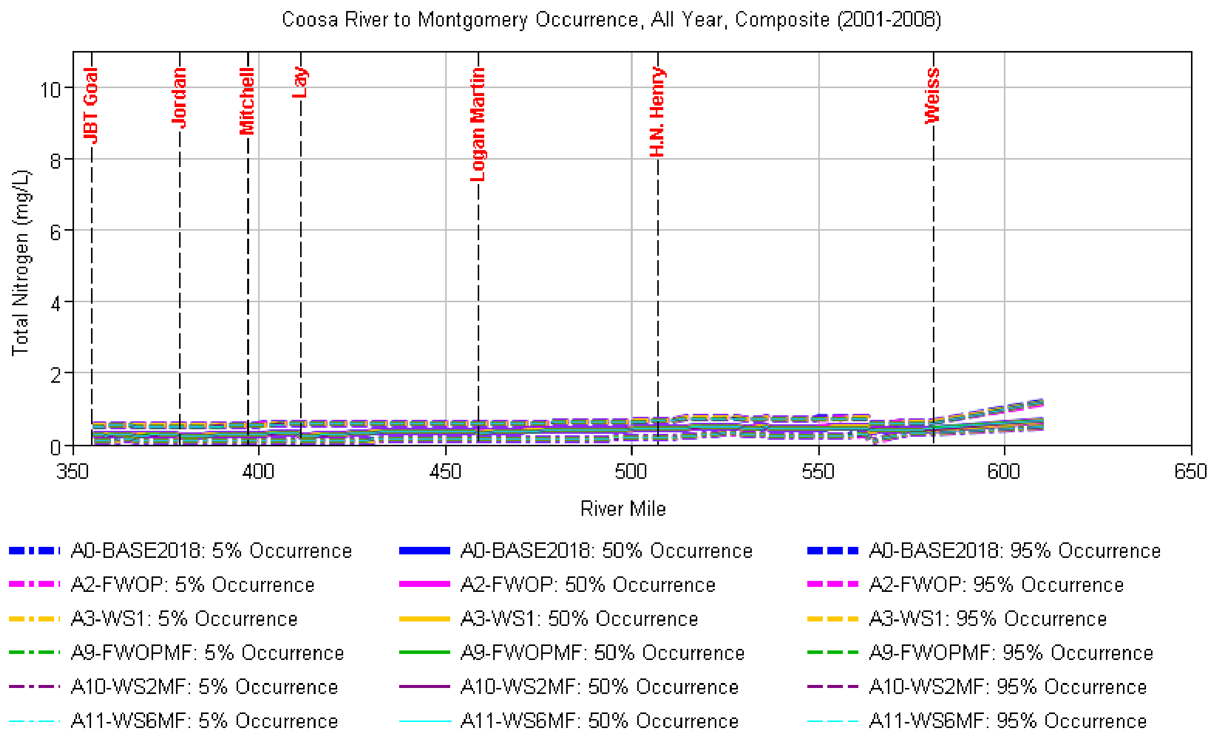


Figure D-7. TN Occurrence for the Coosa River (2001–2008).

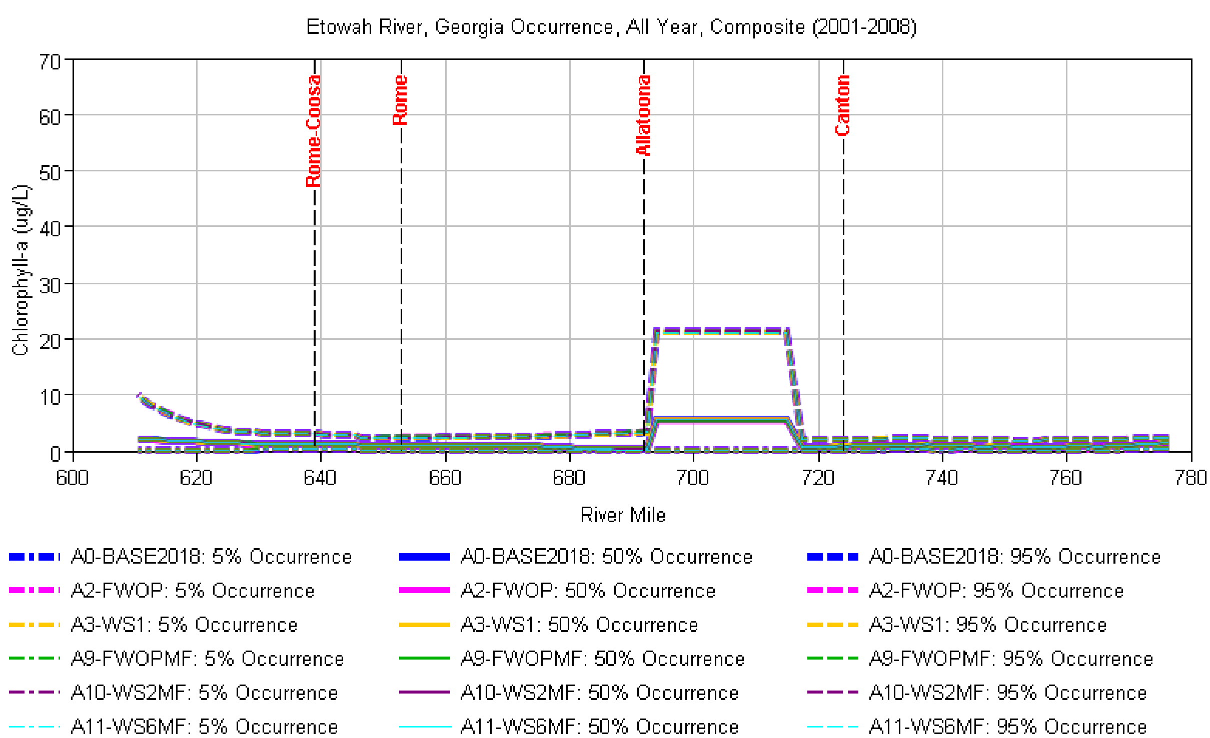


Figure D-8. Chlorophyll a Occurrence for April–November for the Etowah River (2001–2008).

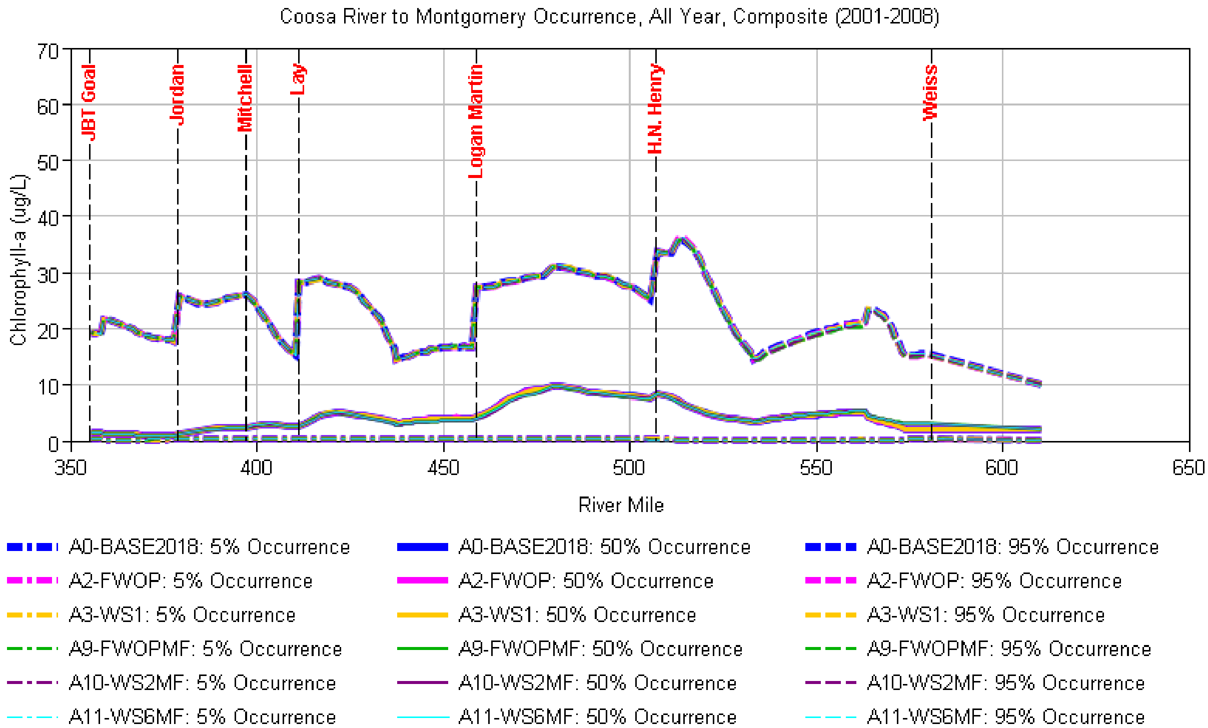


Figure D-9. Chlorophyll a Occurrence for April–November for the Coosa River (2001–2008).

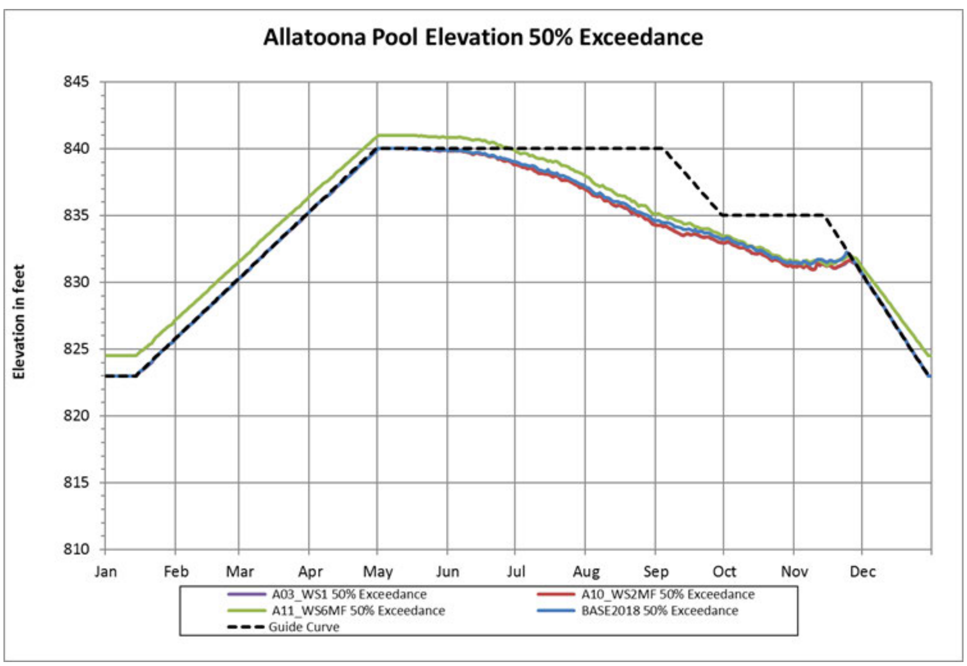


Figure D-10. Allatoona Lake—Median Daily Pool Elevation over the Modeled Period of Record.

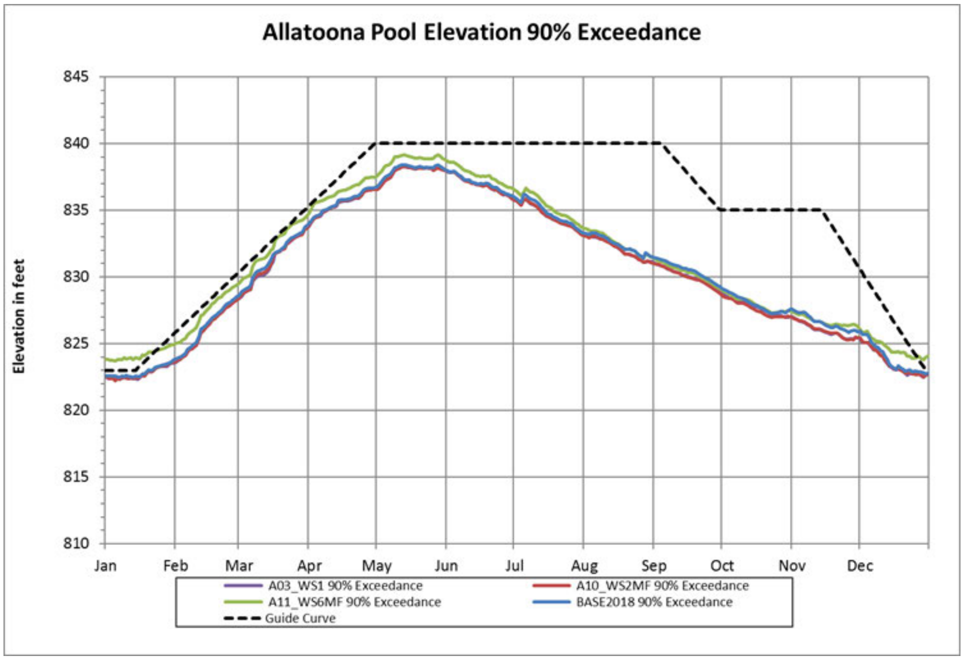


Figure D-11. Allatoona Lake—Daily Pool Elevations Exceeded 90 Percent of the Time over the Modeled Period of Record.

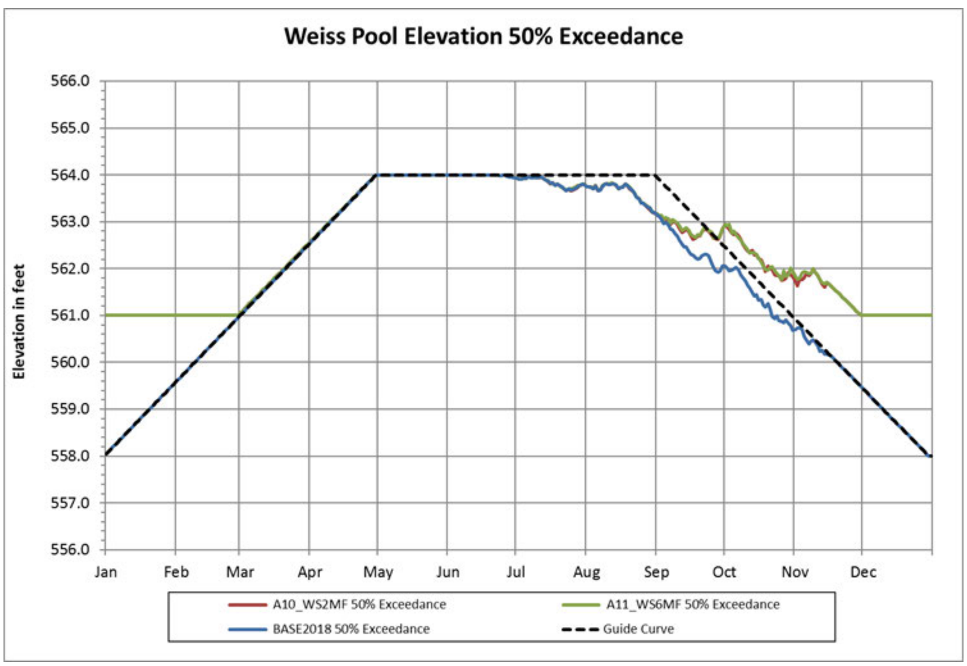


Figure D-12. Weiss Lake—Median Daily Pool Elevation over the Modeled Period of Record.

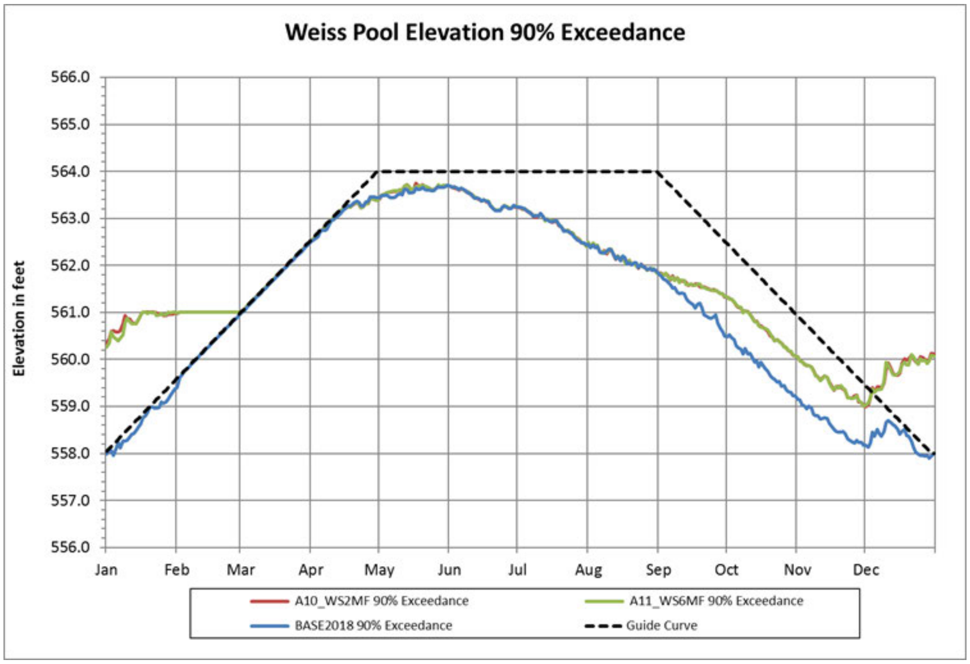


Figure D-13. Weiss Lake—Daily Pool Levels Exceeded 90 Percent of the Time over the Modeled Period of Record.

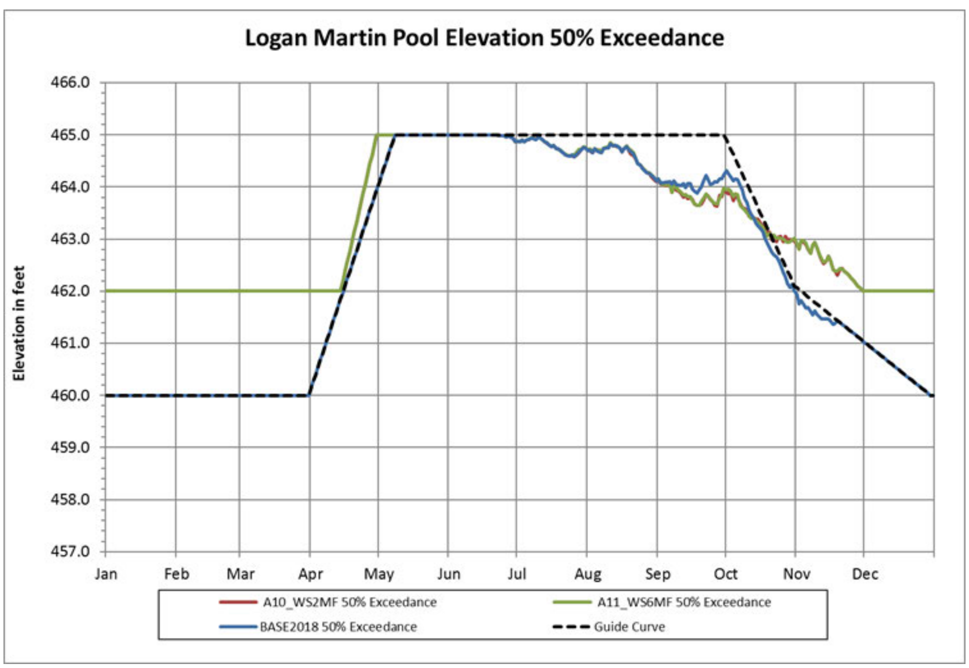


Figure D-14. Logan Martin Lake—Median Daily Pool Elevation over the Modeled Period of Record.

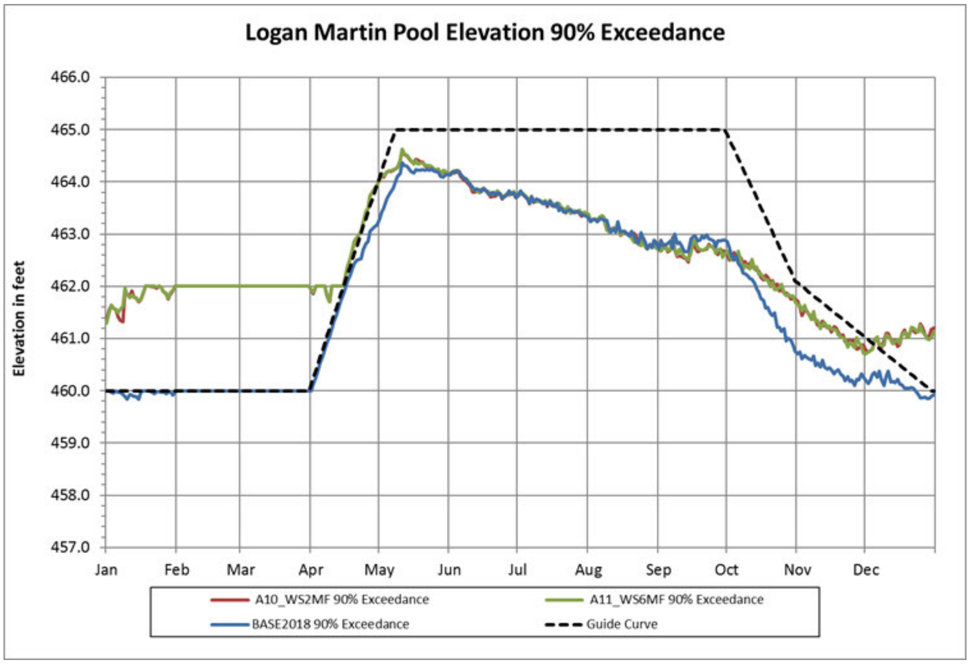


Figure D-15. Logan Martin Lake—Daily Pool Levels Exceeded 90 Percent of the Time over the Modeled Period of Record.

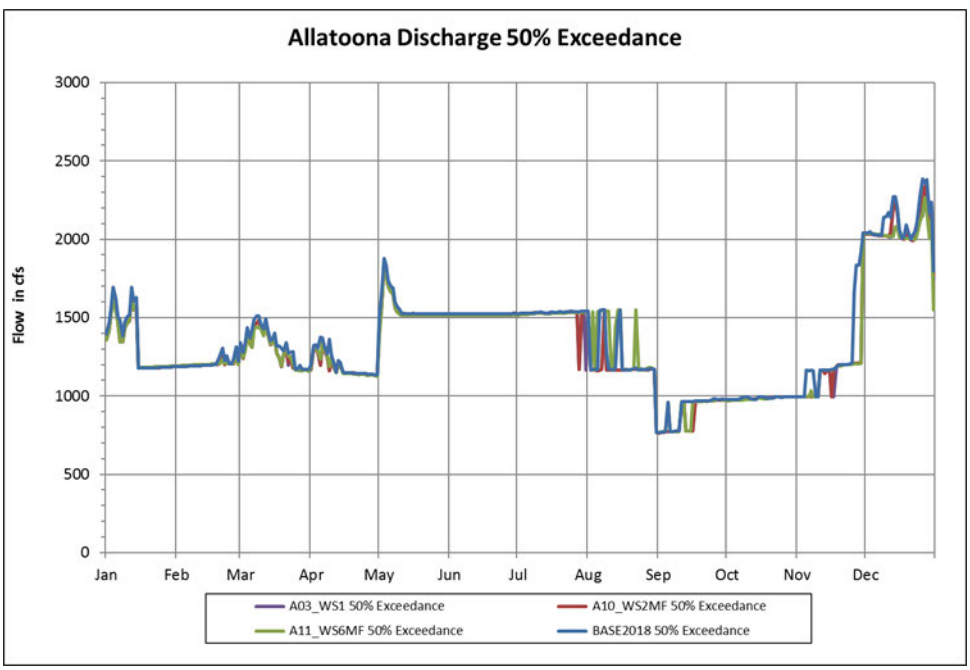


Figure D-16. Etowah River Downstream of Allatoona Dam—Median Daily Discharge over the Modeled Period of Record.

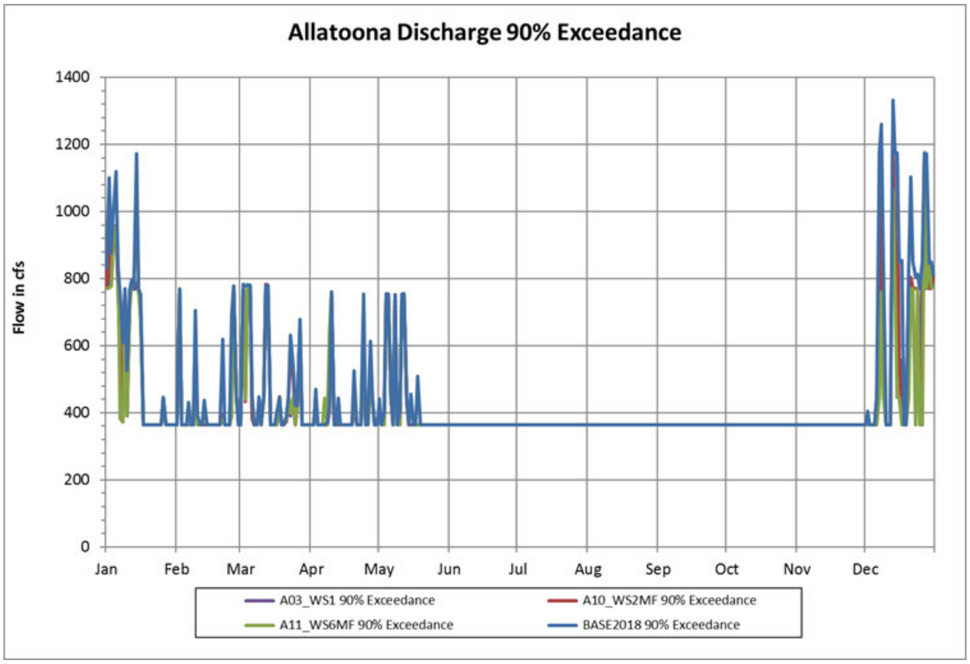


Figure D-17. Etowah River Downstream of Allatoona Dam—Daily Discharge Exceeded 90 Percent of the Time over the Modeled Period of Record.

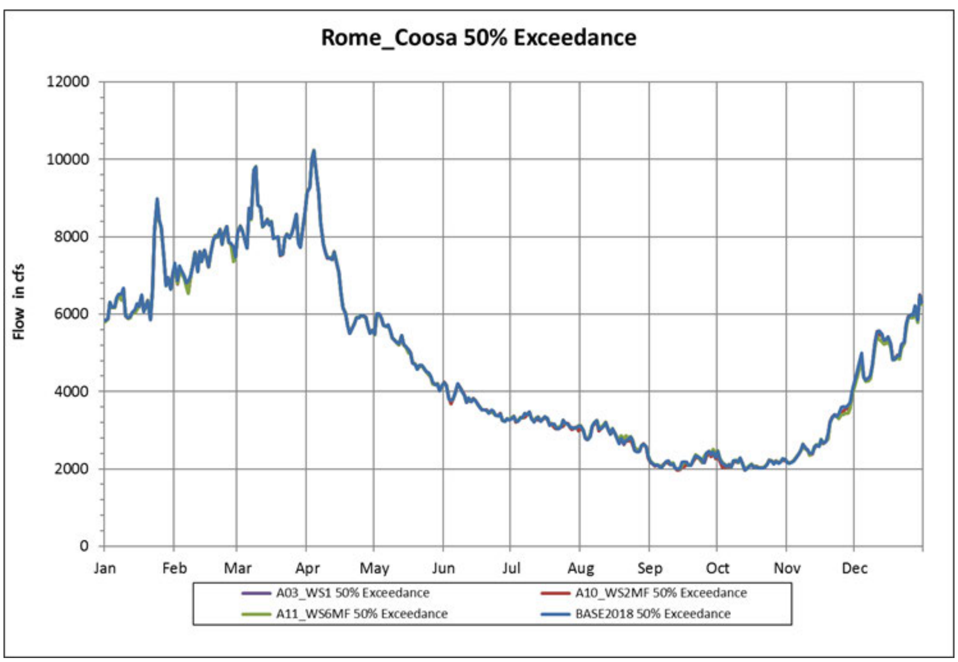


Figure D-18. Coosa River Near Rome, GA—Median Daily Discharge over the Modeled Period of Record.

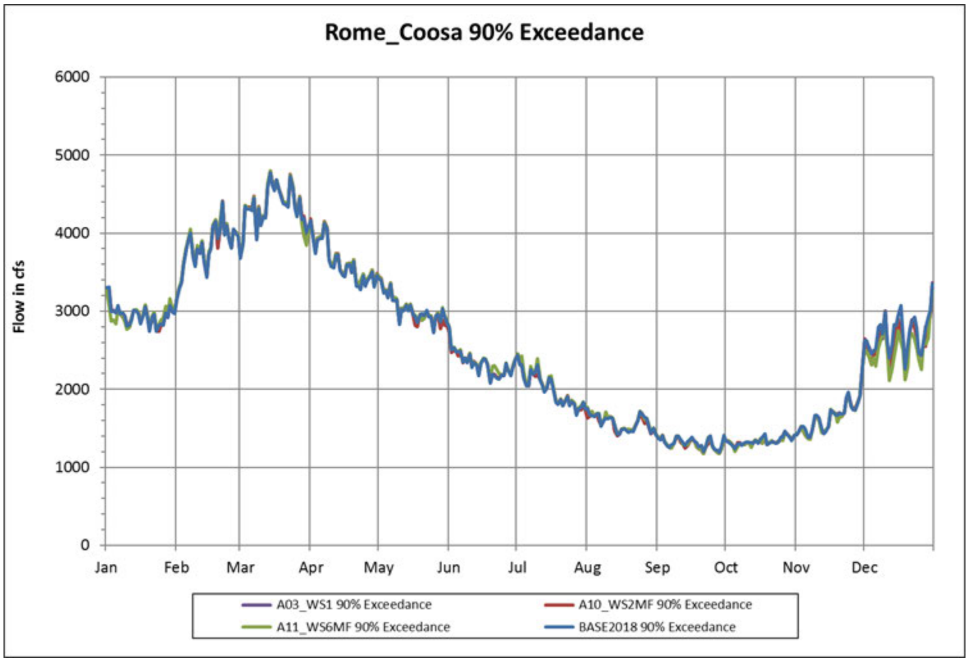


Figure D-19. Coosa River Near Rome, GA—Daily Discharge Exceeded 90 Percent of the Time over the Modeled Period of Record.

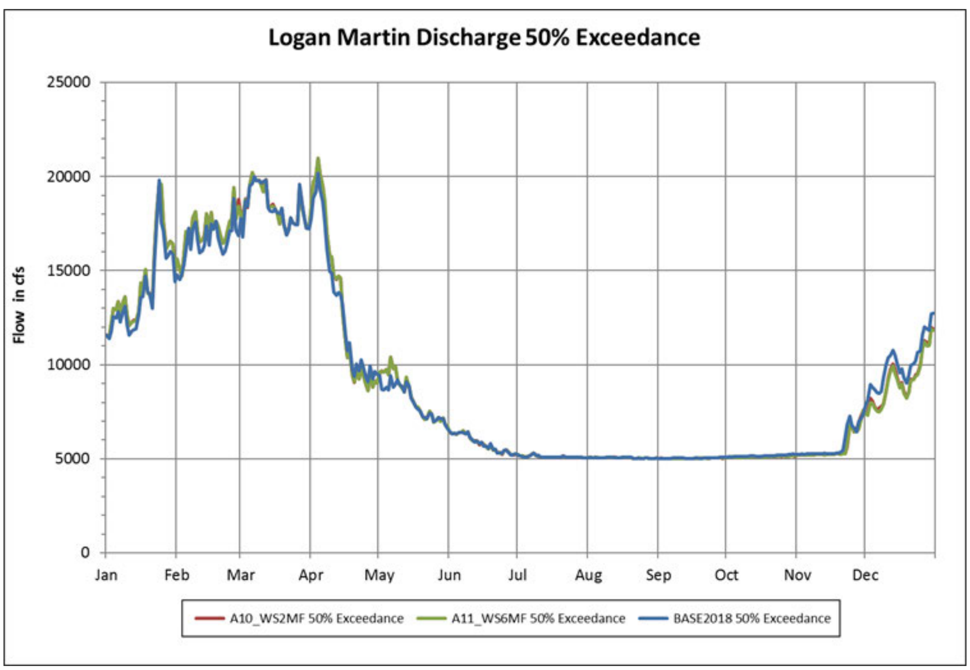


Figure D-20. Coosa River Downstream of Logan Martin Lake—Median Daily Discharge over the Modeled Period of Record.

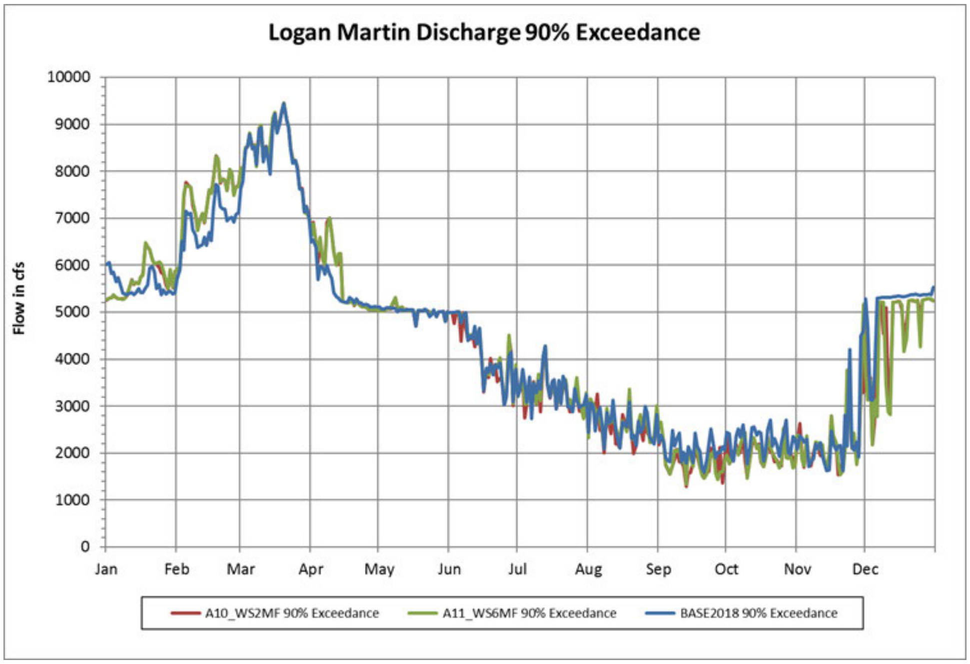


Figure D-21. Coosa River Downstream of Logan Martin Dam—Daily Discharge Exceeded 90 Percent of the Time over the Modeled Period of Record.

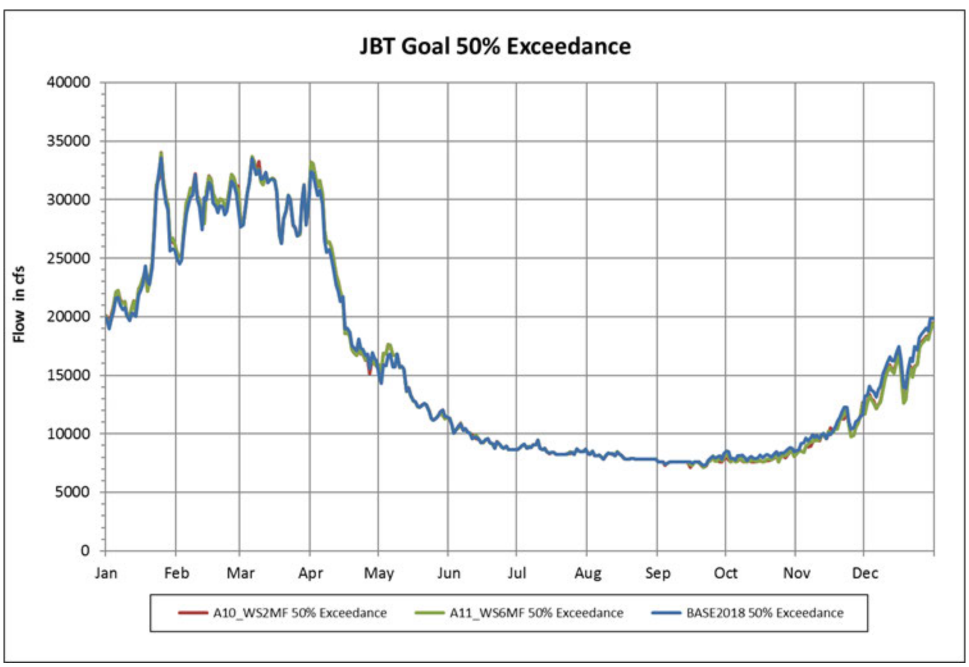


Figure D-22. Alabama River at Confluence of Coosa and Tallapoosa Rivers—Median Daily Discharge over the Modeled Period of Record.

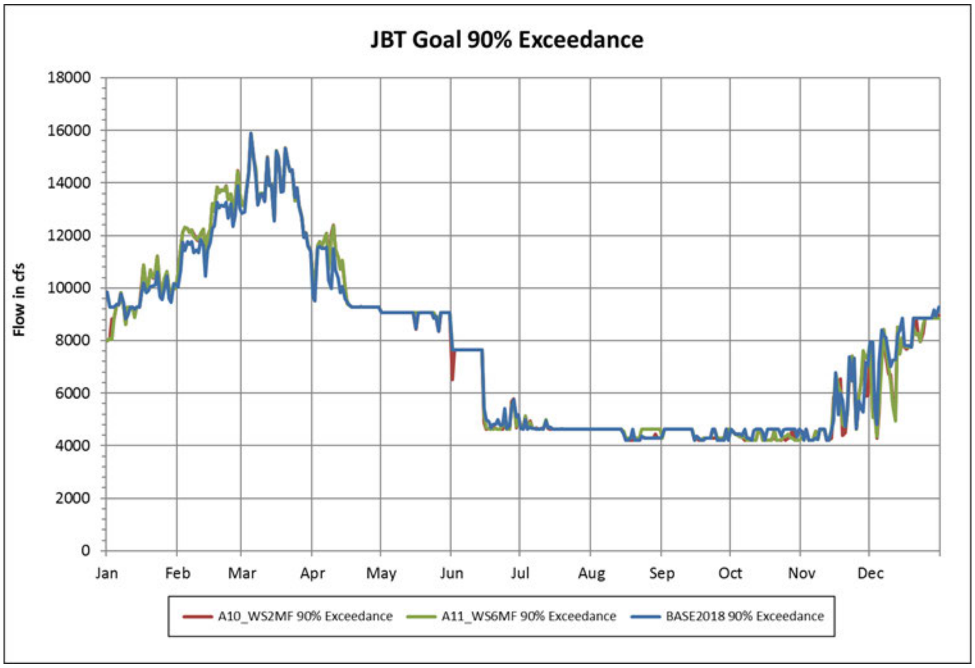


Figure D-23. Alabama River at Confluence of Coosa and Tallapoosa Rivers—Daily Discharge Exceeded 90 Percent of the Time over the Modeled Period of Record.

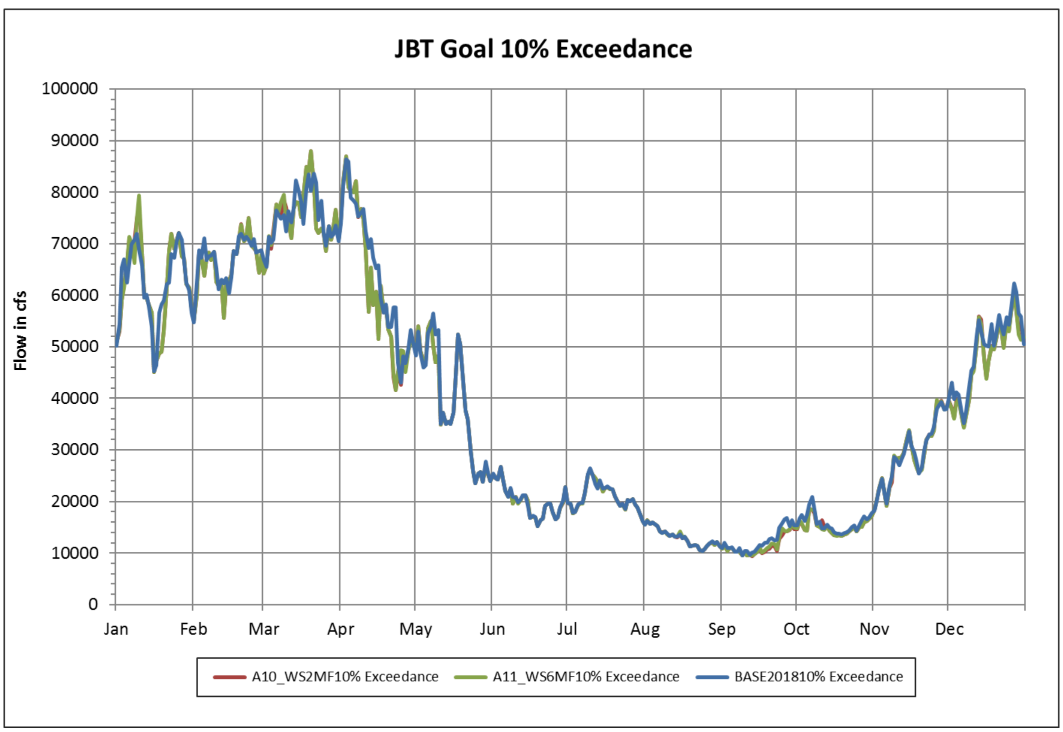


Figure D-24. Alabama River at Confluence of Coosa and Tallapoosa Rivers—Daily Discharge Exceeded 10 Percent of the Time over the Modeled Period of Record.

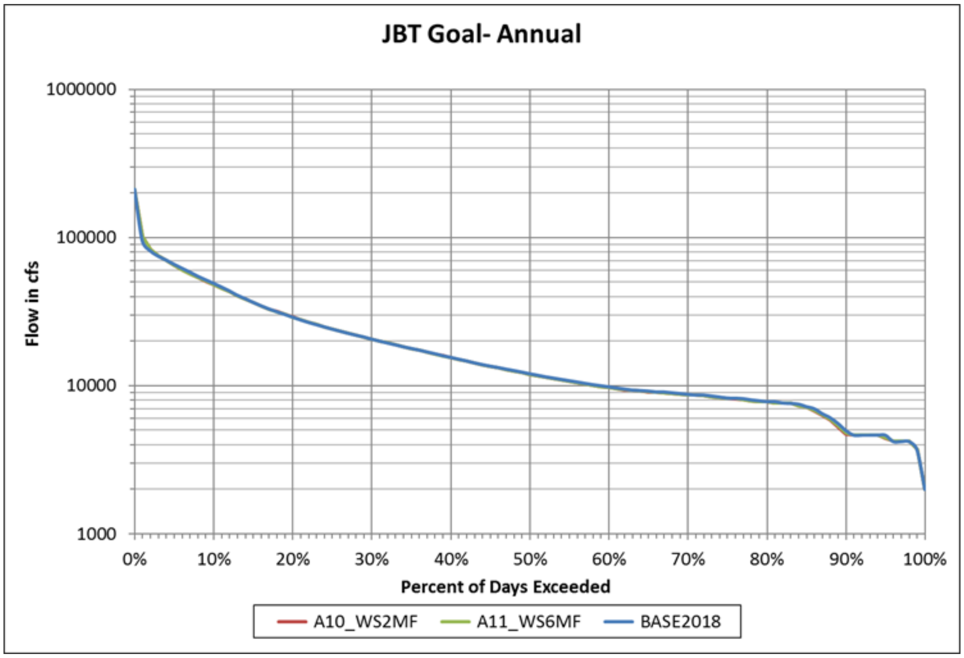


Figure D-25. Alabama River at Confluence of Coosa and Tallapoosa Rivers—Annual Flow Duration Curve over the Modeled Period of Record.

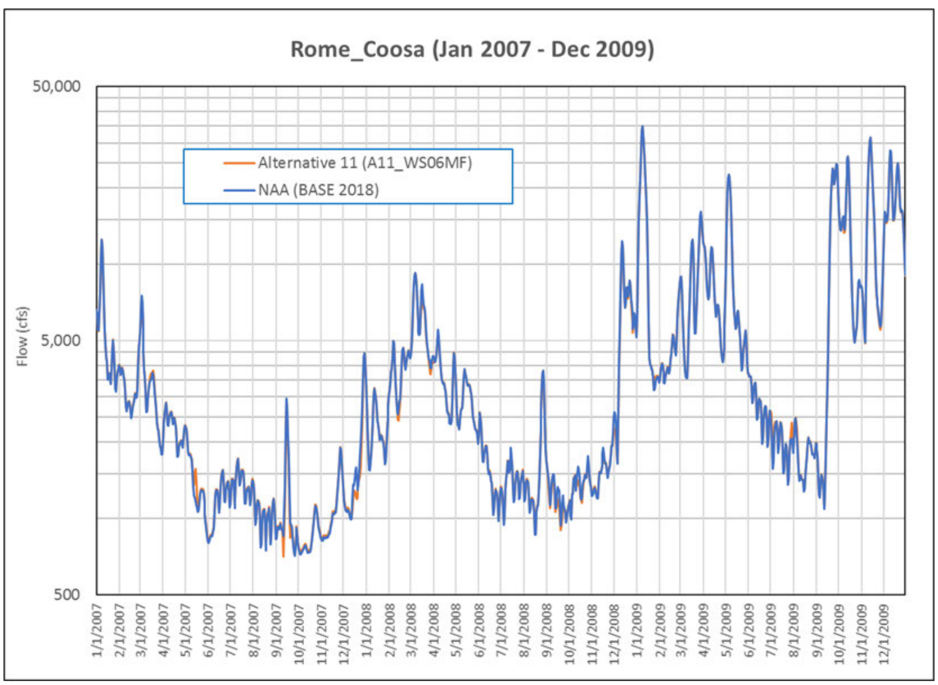


Figure D-26. Coosa River Near Rome, GA—Modeled Flows for the NAA and Alternative 11 for the Period from January 2007 through December 2009.

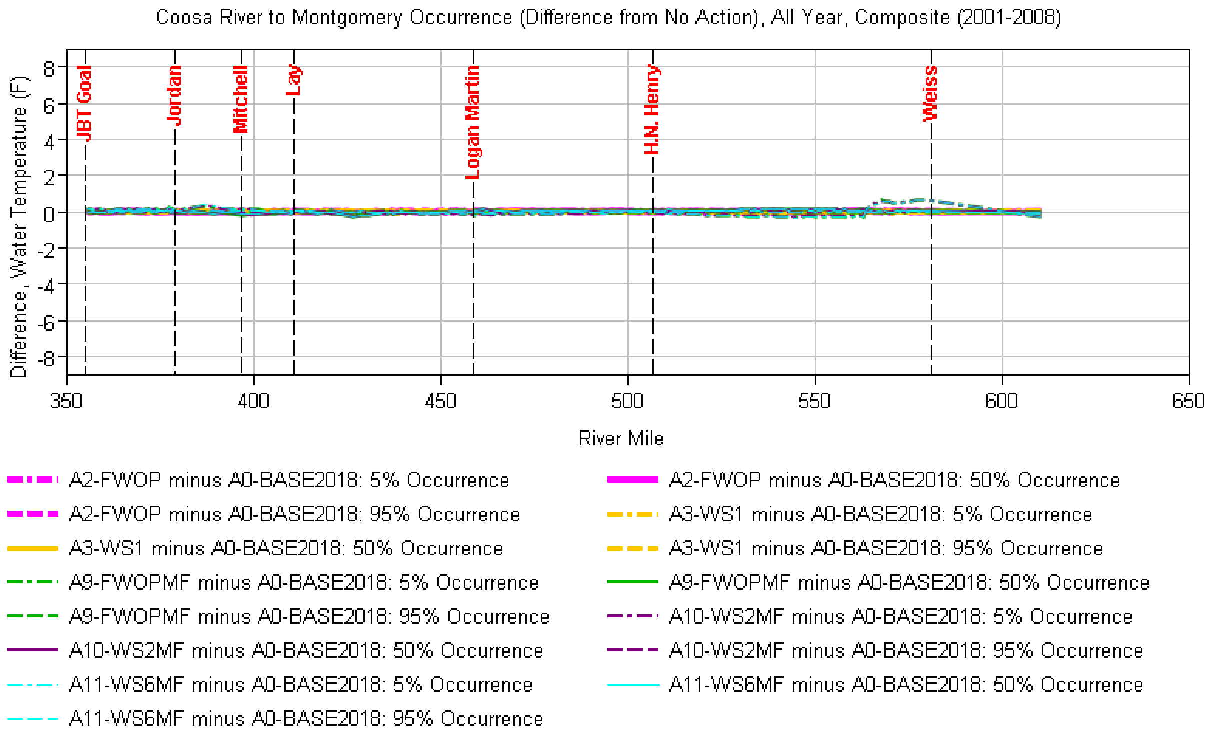


Figure D-27. Water Temperature Occurrence Difference from the NAA for the Coosa River (2001–2008).

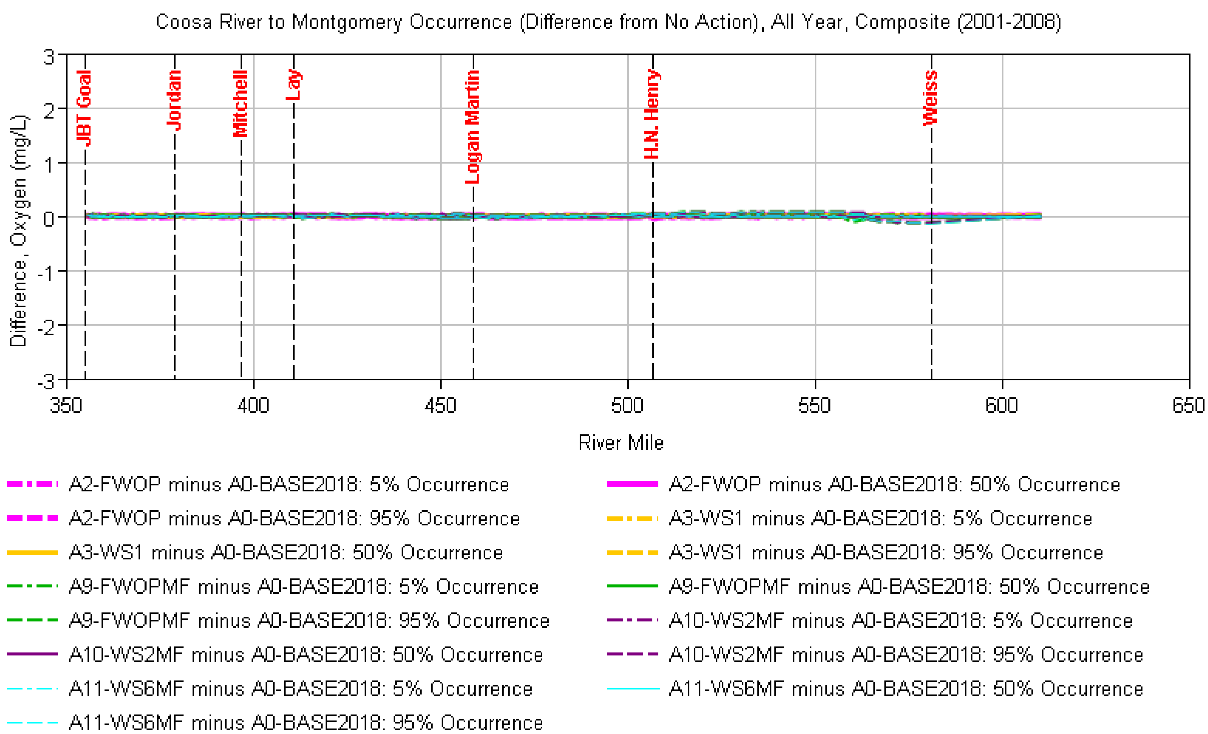


Figure D-28. DO Occurrence Difference from the NAA for the Coosa River (2001–2008).

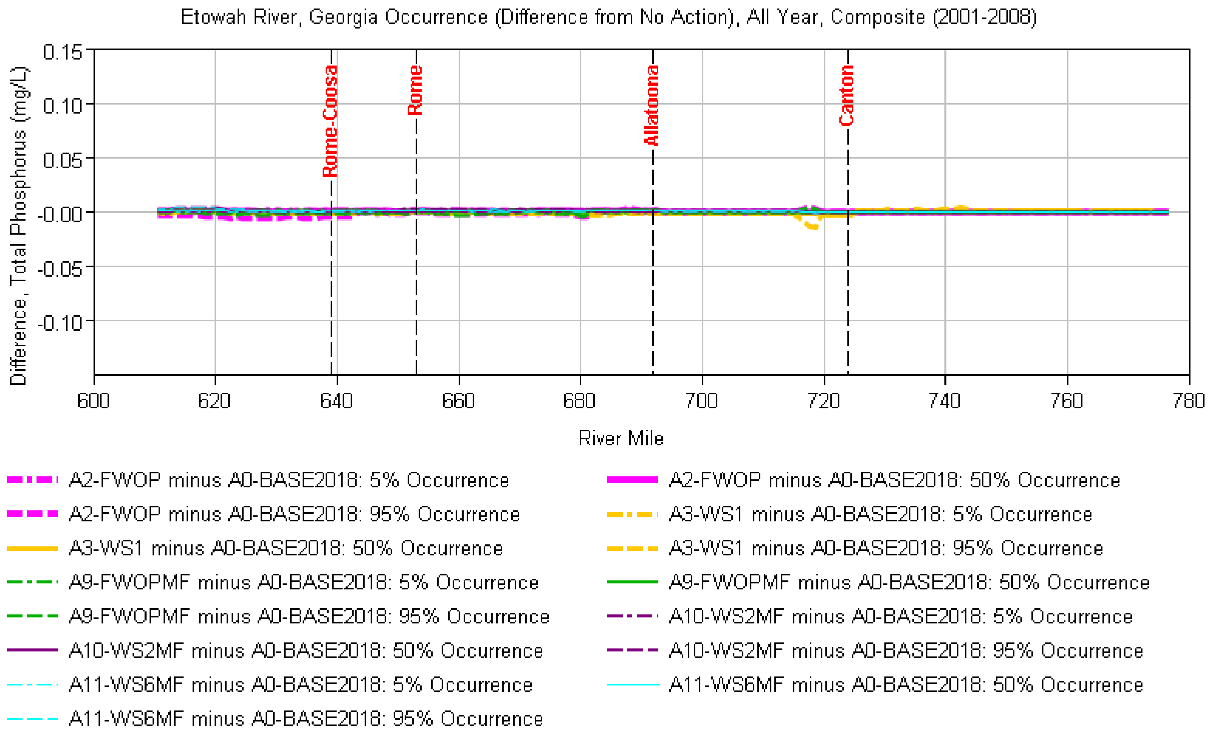


Figure D-29. TP Occurrence Difference from the NAA for the Etowah River (2001–2008).

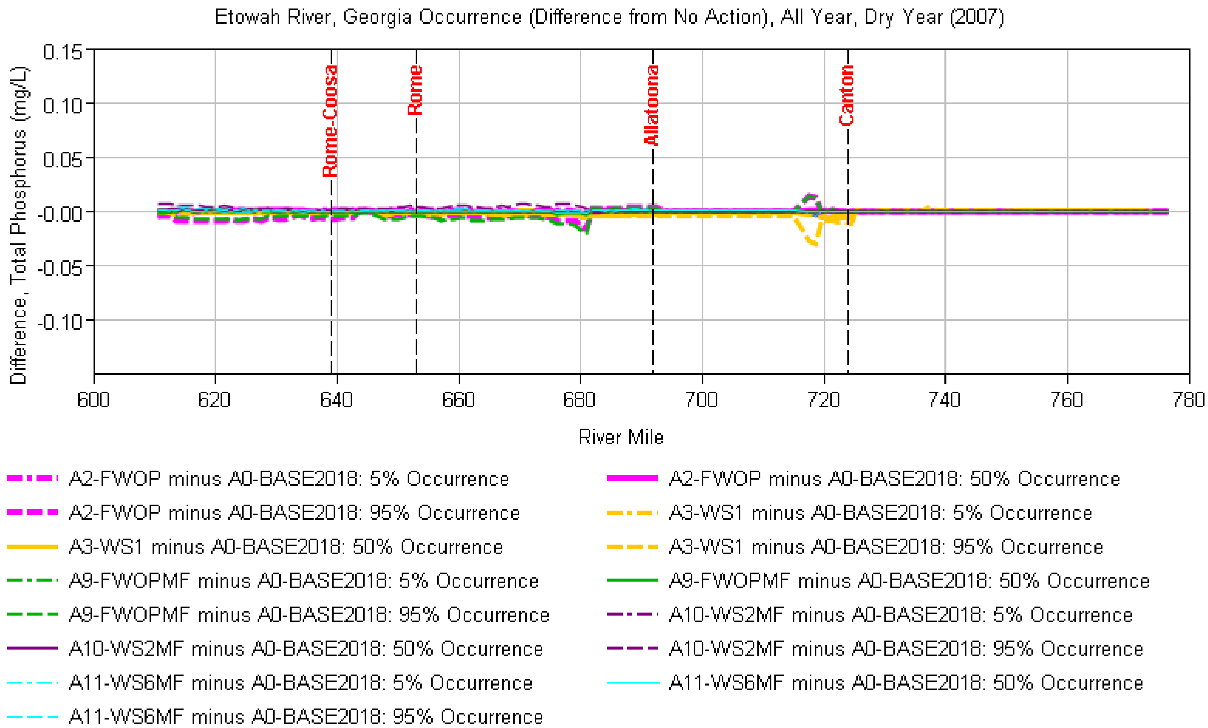


Figure D-30. TP Occurrence Difference from the NAA for the Etowah River (2007 dry year).

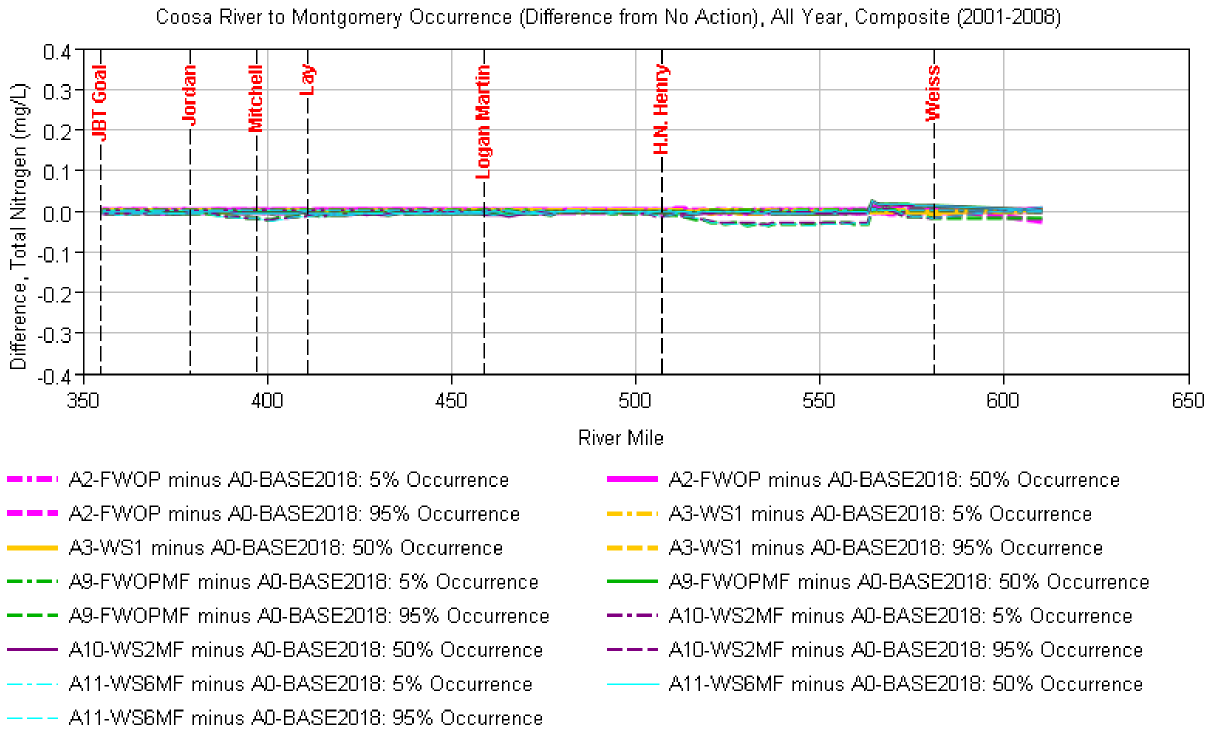


Figure D-31. TN Occurrence Difference from the NAA for the Coosa River (2001–2008).

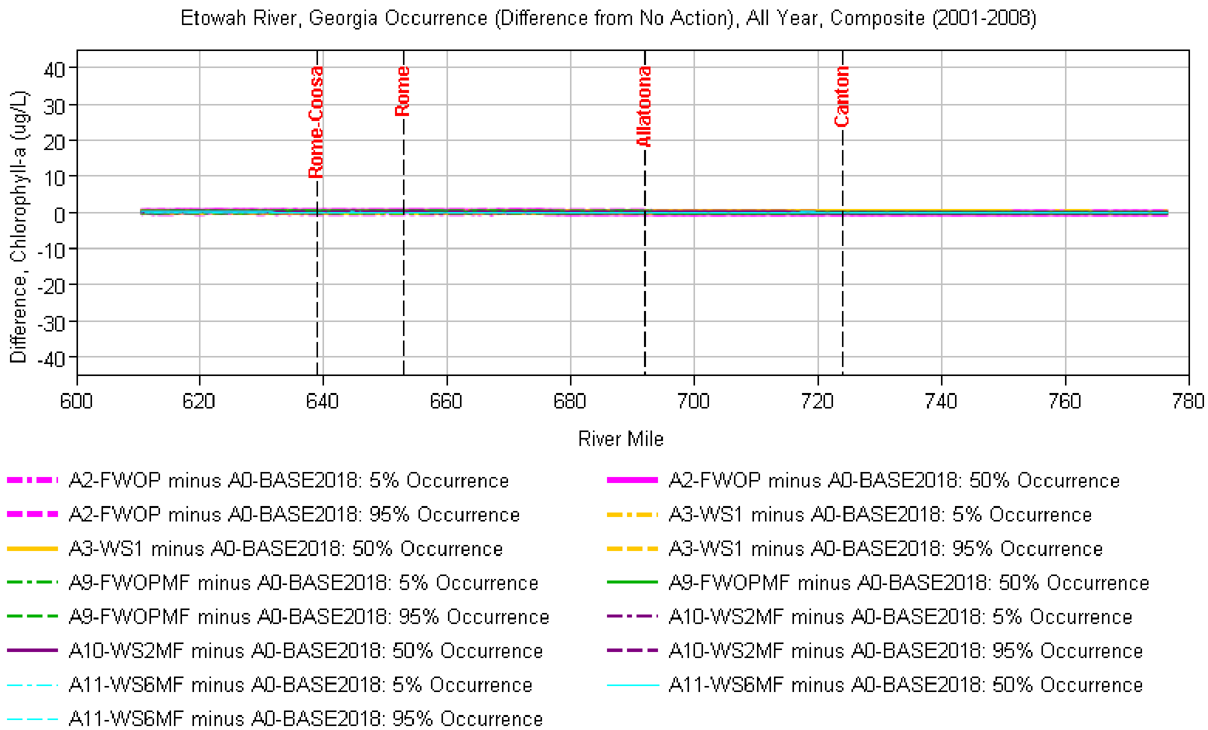


Figure D-32. Chlorophyll a Occurrence Difference from the NAA for the Etowah River (2001–2008).

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1208-B Main Street
Daphne, Alabama 36526

JUL 09 2020

IN REPLY REFER TO:
2020-I-0277

Todd A. Nettles
Acting Chief, Planning and Environmental Division
U.S. Army Corps of Engineers, Mobile District
P.O. Box 2288
Mobile, AL 36628-0001

Dear Mr. Nettles:

This letter responds to your Biological Assessment (BA), received on May 11, 2020, and your request for concurrence that all effects of the Tentatively Selected Plan (TSP), Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Water Control Manuals, will have either "no effect" or "may affect, but not likely to adversely affect" endangered or threatened species and critical habitat. We have reviewed the information and provide the following comments in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. § 1531 et seq.).

Proposed Action

It is our understanding that the Proposed Action, or Tentatively Selected Plan (TSP), is identified as Alternative 11 in the Draft FR/SEIS. The TSP involves Allatoona Lake storage reallocation to enable withdrawals up to 94 million gallons per day (mgd) from a combination of flood storage and conservation storage, using USACE current storage accounting methodology, and modified flood operations at the APC Weiss and Logan Martin projects. An overview of the proposed changes to water supply storage at Allatoona Lake and proposed changes to flood operations at APC Weiss and Logan Martin projects and details on effects regarding water quantity (such as lake levels) and water quality are provided in BA. You have stated that any current conservation measures that are being used in the system (fish spawning practices at Allatoona Dam and Lake, measures to promote fish passage through Claiborne Lock and Dam, etc.) are expected to continue, but will not affect protected species in the ROI with respect to the proposed action.

Threatened and Endangered Species and Critical Habitat

The Service has not received all of the information necessary to evaluate the entire TSP. We request additional information on the following:

- Description and justification on the Region of Influence (ROI) selected for the TSP

PHONE: 251-441-5181 FAX: 251-441-6222

- Analysis of how discretion of water balance at Carters Dam and Carters Reregulation Dam will be impacted by the Allatoona Lake storage reallocation
- Changes in hydropower operations at Allatoona Dam due to the TSP
- Changes in pool elevation and reservoir footprint at Allatoona Lake due to the TSP
- Impacts analysis on threatened and endangered species locations within the ROI, specifically in the tributaries

Please provide us more specific information regarding the analysis of the TSP. We appreciate the coordination on this project. If you have any questions, please contact Alabama Ecological Services Field Office staff biologist Jennifer Grunewald at (205) 247-37263 or Georgia Ecological Services Field Office staff biologists Martha Zapata and Scott Glassmeyer at (706) 613-9493.

Sincerely,

WILLIAM PEARSON Digitally signed by WILLIAM PEARSON Date: 2020.07.09 14:36:46 -05'00'

William J. Pearson
Field Supervisor
Alabama Ecological Services Field Office

cc: Georgia Ecological Services Field Office, attention Martha Zapata and Scott Glassmeyer

-----Original Message-----
From: Rickey, Terry W Jr CIV USARMY CESAM (USA)
Sent: Wednesday, July 29, 2020 8:21 PM
To: Dunn, Tonya N CIV USARMY CESAM (USA) <Tonya.N.Dunn@usace.army.mil>
Subject: FW: [EXTERNAL] Allatoona Coosa Study

-----Original Message-----
From: Grunewald, Jennifer [mailto:jennifer_grunewald@fws.gov]
Sent: Wednesday, July 29, 2020 1:20 PM
To: Rickey, Terry W Jr CIV USARMY CESAM (USA) <Terry.W.Rickey@usace.army.mil>
Cc: Powell, Jeff <jeff_powell@fws.gov>; Imm, Donald <donald_imm@fws.gov>; Glassmeyer, Scott T <scott_glassmeyer@fws.gov>; Zapata, Martha J <martha_zapata@fws.gov>; Prowell, Eric <eric_prowell@fws.gov>
Subject: [Non-DoD Source] Re: [EXTERNAL] Allatoona Coosa Study

TJ,

Thank you for the opportunity to provide additional information. Attached is the document that includes the tributaries we request additional analysis for, as well as species lists at the HUC12 level within the ROI. Please let us know if you have any questions.

Sincerely,

Jennifer P. Grunewald

Fish and Wildlife Biologist
U.S. Fish & Wildlife Service
Alabama Ecological Services Field Office Tuscaloosa Sub-office

420 Hackberry Lane

P.O. Box 869999

Tuscaloosa, Alabama 35486-6999

(205) 247-3726 Office | (251) 424-0635 Cell
(251) 441-6222 Fax

From: Rickey, Terry W Jr CIV USARMY CESAM (USA) <Terry.W.Rickey@usace.army.mil>
Sent: Wednesday, July 15, 2020 11:09 AM
To: Grunewald, Jennifer <jennifer_grunewald@fws.gov>
Subject: RE: [EXTERNAL] Allatoona Coosa Study

Absolutely. We can use my WebEx conference line.

[redacted]

-----Original Message-----
From: Grunewald, Jennifer [mailto:jennifer_grunewald@fws.gov]
Sent: Wednesday, July 15, 2020 11:05 AM
To: Rickey, Terry W Jr CIV USARMY CESAM (USA) <Terry.W.Rickey@usace.army.mil>
Subject: [Non-DoD Source] Re: [EXTERNAL] Allatoona Coosa Study

TJ,

I have coordinated with the GA office and we can talk today after 2 pm central. Are you still available this afternoon?

Jennifer

From: Rickey, Terry W Jr CIV USARMY CESAM (USA) <Terry.W.Rickey@usace.army.mil>
Sent: Tuesday, July 14, 2020 8:02 AM
To: Grunewald, Jennifer <jennifer_grunewald@fws.gov>
Subject: RE: [EXTERNAL] Allatoona Coosa Study

Jennifer,

Sure! I am available all day today and after noon tomorrow.

TJ

-----Original Message-----
From: Grunewald, Jennifer [mailto:jennifer_grunewald@fws.gov]
Sent: Tuesday, July 14, 2020 7:33 AM
To: Rickey, Terry W Jr CIV USARMY CESAM (USA) <Terry.W.Rickey@usace.army.mil>
Subject: [Non-DoD Source] Re: [EXTERNAL] Allatoona Coosa Study

TJ,

Thank you for reaching out. Yes, we can schedule a call. May I invite the Georgia Ecological Services Field Office to join the call? We are cooperating on the consultation.

Jennifer P. Grunewald

Fish and Wildlife Biologist
U.S. Fish & Wildlife Service
Alabama Ecological Services Field Office Tuscaloosa Sub-office

420 Hackberry Lane

P.O. Box 869999

Tuscaloosa, Alabama 35486-6999

(205) 247-3726 Office | (251) 424-0635 Cell
(251) 441-6222 Fax

From: Rickey, Terry W Jr CIV USARMY CESAM (USA) <Terry.W.Rickey@usace.army.mil>
Sent: Monday, July 13, 2020 1:40 PM
To: Grunewald, Jennifer <jennifer_grunewald@fws.gov>
Subject: [EXTERNAL] Allatoona Coosa Study

Jennifer,

Would it be possible to have a quick phone call today to go over the request from information we received on Thursday? I have a few questions to ensure the USACE response is timely and proper.

TJ

Terry "TJ" Rickey, M.S.
Biologist
Inland Environment Team
Planning and Environmental Division
US Army Corps of Engineers, Mobile District : (251) 694-3857

The following species lists at the HUC12 level provide additional local information for your analysis. The list below does not include all HUC12 watersheds within the ROI and should be used in conjunction with the species that have already been addressed in the Biological Assessment (May 2020). The bolded HUCs include the tributaries that we request additional analysis and detail for. If the models and analysis show that the preferred alternative action does not influence the HUCs below, then the HUCs and species can be eliminated, and please include the model and analysis in the supporting documentation for that decision.

Tributaries and Federally Listed Species by HUC12 within the ROI, Alabama

Ballplay Creek-Coosa River HUC12 031501050206 (flows into Weiss Lake) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T) Southern Clubshell (E) Alabama Leather Flower (E), Green Pitcher Plant (E), Mohr's Barbara's Buttons (T), Whorled Sunflower (E); includes Whorled sunflower CH

Mud Creek-Spring Creek HUC12 031501050807 (flows into Weiss Lake) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Blue Shiner (T), Alabama Leather Flower (E), Green Pitcher Plant (E), Harperella (E), Kral's Water Plantain (T), Mohr's Barbara's Buttons (T) - Request for further analysis on Spring Creek

Lower Little River HUC12 031501050806 (flows into Weiss Lake) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Blue Shiner (T), Green Pitcher Plant (E), Harperella (E), Kral's Water Plantain (T) – Request for further analysis on Little River

Lower Terrapin Creek HUC12 031501050909 (flows into Weiss Lake) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Coosa Moccasinshell (E), Finelined Pocketbook (T), Georgia Pigtoe (E), Ovate Clubshell (E), Southern Acornshell (E), Southern Clubshell (E), Southern Pigtoe (E), Triangular Kidneyshell (E), Upland Combshell (E), Alabama Leather Flower (E), Green Pitcher Plant (E), Mohr's Barbara's Buttons (T); includes CH - Request for analysis details completed on Terrapin Creek

Weiss Bypass HUC12 031501051003 – Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Pigtoe (E), Coosa Moccasinshell (E), Finelined Pocketbook (T), Georgia Pigtoe (E), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Triangular Kidneyshell (E); Interrupted Rocksnail (E), Cherokee Co, AL; includes CH and most sensitive area is from confluence of Terrapin Creek downstream to the confluence of the powerhouse channel - Request for analysis details completed on Weiss Bypass

Ballplay Creek-Coosa River HUC 031501060201 (flows into Neely Henry Reservoir) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Upland Combshell (E), Trispot Darter (T), Alabama Leather Flower (E), Green Pitcher Plant (E), Mohr's Barbara's Buttons (T); includes proposed CH for trispot darter – Request for further analysis on Ballplay Creek

Black Creek-Coosa River HUC12 031501060202 (flows into Neely Henry Reservoir) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), (E), Alabama Leather Flower (E), Green Pitcher Plant (E), Mohr's Barbara's Buttons (T)

Big Cove Creek HUC12 031501060203 (flows into Neely Henry Reservoir) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Alabama Leather Flower (E), Green Pitcher Plant (E), Mohr's Barbara's Buttons (T)

Turkey Town Creek-Coosa River HUC 12 031501060204 (includes Neely Henry Reservoir) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Alabama Leather Flower (E), Green Pitcher Plant (E), Mohr's Barbara's Buttons (T)

Little Canoe Creek HUC12 031501060304 (flows into Big Canoe Creek) – Coosa Moccasinshell (E), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Triangular Kidneyshell (E); Etowah/St. Clair Co line; concerned with the lower reaches of Little Canoe Creek - Request for further analysis on Little Canoe Creek

Big Willis Creek HUC12 031501060108 (flows into Neely Henry Reservoir) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Alabama Leather Flower (E), Green Pitcher Plant (E)

Big Canoe Creek-Coosa River HUC12 031501060309 (flows into and includes Neely Henry Reservoir) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Alabama Leather Flower (E), Green Pitcher Plant (E) - Request for analysis details completed on Big Canoe Creek

Big Canoe Creek HUC12 031501060306 (flows into Coosa River, downstream of Critical Habitat) - Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Triangular Kidneyshell (E); St. Clair Co., AL; most concerned with the lower reaches of Big Canoe Creek from the point it is impacted by the H. Neely Henry Project boundary upstream in Big Canoe as far as this action would influence flows - Request for analysis details completed on Big Canoe Creek

Big Canoe Creek (Lower) HUC12 031501060305 (flows into Coosa River, within Critical Habitat) - Finelined Pocketbook (T), Coosa Moccasinshell (E), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Triangular Kidneyshell (E); St. Clair Co, AL; same concerns as above; if this action would influence flows further upstream than this HUC then Trispot Darter (T) and its proposed CH should be considered - Request for analysis details completed on Big Canoe Creek

Beaver Creek HUC12 031501060307 (flows into Coosa River) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Alabama Leather Flower (E) , St. Clair Co, AL

Shoal Creek HUC12 031501060308 (flows into Coosa River) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), St. Clair Co, AL

Trout Creek HUC12 031501060601 (flows into Coosa River) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Tennessee Yellow-Eyed Grass (E)

Leather Creek-Broken Arrow Creek HUC12 031501060602 (flows into Coosa River) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Tennessee Yellow-Eyed Grass (E); St. Clair Co., AL

Ohatchee Creek-Tallasseehatchee Creek HUC12 031501060406 (flows into Coosa River) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Painted Rocksnail (T), Southern Clubshell (E), Mohr's Barbara's Buttons (T), Tennessee Yellow-Eyed Grass (E), White Fringeless Orchid (T) - Request for further analysis on Ohatchee Creek; Calhoun Co., AL

Embry Bend-Coosa River HUC12 031501060603 - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Tennessee Yellow-Eyed Grass (E); St. Clair/Calhoun Cos., AL

Broken Arrow Shoals-Coosa River HUC12 031501060605 - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Tennessee Yellow-Eyed Grass (E); St. Clair/Talladega Cos., AL

Blue Eye Creek HUC12 031501060604 (flows into the Coosa River) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Tennessee Yellow-Eyed Grass (E), Talladega/Calhoun Cos, AL

Choccolocco Creek (Lower) HUC12 031501060514 (flows into Coosa River, downstream of Critical Habitat) – Blue Shiner (T), Cylindrical Lioplax (E), Painted Rocksnail (T), Tulotoma Snail (T), Finelined Pocketbook (T), Southern Clubshell (E), Southern Pigtoe (E); Talladega Co, AL; concerned with Choccolocco Cr from the point it hits the Logan Martin project boundary upstream to Jackson Shoals at beyond; Talladega Co, AL; same concerns as above - Request for further analysis on Choccolocco Creek

Choccolocco Creek HUC12 031501060512 (flows into Coosa River, upstream of HUC12 031501060514) - Blue Shiner (T), Painted Rocksnail (T), Finelined Pocketbook (T), Southern Clubshell (E), Southern Pigtoe (E); Talladega Co, AL; same concerns as above - Request for further analysis on Choccolocco Creek

Cheaha Creek (Lower) HUC12 031501060511 (flows into Choccolocco Creek, within Critical Habitat) - Lacy Elimia (T), Coosa Moccasinshell (E), Finelined Pocketbook (T), Southern Clubshell (E), Southern Pigtoe (E), Triangular Kidneyshell (E); Talladega Co, AL; same concerns as above - Request for further analysis on Cheaha Creek

Poorhouse Branch HUC 12 031501060801 (flows into the Coosa River) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E) Talladega Co, AL

Haw Branch-Clear Creek HUC12 031501060802 (flows into the Coosa River) -Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Southern Pigtoe (E); Talladega Co, AL

Rabbit Branch-Coosa River HUC12 031501060803 (includes Coosa River) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E); St. Clair/Talladega Cos. AL

Kelly Creek (Lower) HUC12 031501060808 (flows into Coosa River, within Critical Habitat) - Tulotoma Snail (T), Finelined Pocketbook (T), Coosa Moccasinshell (E), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Triangular Kidneyshell (E); St. Clair and Shelby cos, AL; concerned from its confluence with the Coosa River in Lay Lake headwaters upstream to as far as impacts are noted - Request for further analysis details on Kelly Creek

Spring Creek-Coosa River HUC12 031501060810 (includes Coosa River mainstem) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Painted Rocksnail (T), Tulotoma Snail (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Acornshell (E), Southern Clubshell (E), Southern Pigtoe (E), Triangular Kidneyshell (E); Shelby/Talladega Cos., AL

Fanning Branch HUC12 031501060809 (tributary to Coosa River) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Painted Rocksnail (T), Tulotoma Snail (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Acornshell (E), Southern Clubshell (E), Southern Pigtoe (E), Upland Combshell (E); Talladega Co., AL

Lower Talladega Creek HUC12 031501060703 (tributary to Coosa River) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Lacy Elimia (T), Finelined Pocketbook (T), Southern Clubshell (E), Southern Pigtoe (E), White Fringeless Orchid (T); Talladega Co., AL

Lower Tallaseehatchee Creek HUC12 031501070106 (tributary to Coosa River) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Lacy Elimia (T), Southern Clubshell (E), White Fringeless Orchid (T); Talladega Co., AL

Yellowleaf Creek HUC12 031501070205 (flows into Coosa River – Lay Lake, within Critical Habitat) - Cylindrical Lioplax (E), Rough Hornsnail (E), Tulotoma Snail (T), Coosa Moccasinshell (E), Finelined Pocketbook (T), Southern Clubshell (E), Southern Pigtoe (E), Triangular Kidneyshell (E); Shelby Co, AL; concerned from its confluence with the Coosa River in Lay lake upstream to as far as impacts are seen (including tributaries to Yellowleaf like Muddy Prong and Clear Prong) - Request for further analysis details on Yellowleaf Creek and its tributaries

Kahatchee Creek HUC12 031501070301 (includes Coosa River Lay Lake) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Rough Hornsnail (E), Finelined Pocketbook (T), Southern Clubshell (E), Southern Pigtoe (E); Talladega Co., AL

Beeswax Creek-Coosa River HUC12 031501070304 (Coosa River mainstem/Lay Lake and Beeswax Creek) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Finelined Pocketbook (T), Southern Clubshell (E), Southern Pigtoe (E); Shelby/Talladega Cos., AL

Cohabie Creek-Cedar Creek HUC12 031501070303 (tributary to Coosa River Lay Lake) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E); Talladega Co, AL

Peckerwood Creek-Coosa River HUC12 031501070501 (Tributary to Coosa River Lay Lake) - Gray Bat (E), Indiana Bat (E), Southern Clubshell (E); Coosa/Talladega Cos., AL

Paint Creek HUC12 031501070502 (tributary to Coosa River Lay Lake) – Indiana Bat (E), Southern Clubshell (E), Finelined Pocketbook (T); Coosa Co., AL

Spring Creek-Lay Lake HUC12 031501070503 (Coosa River Lay Lake) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E); Coosa/Shelby Cos., AL

Lower Waxahatchee Creek HUC12 031501070406 (Tributary to Coosa River Lay Lake) - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Tennessee Yellow-Eyed Grass (E); Shelby/Chilton Cos., AL

Yellow Leaf Creek HUC12 031501070801 (Flows into Coosa River Lake Mitchell) - Gray Bat (E), Indiana Bat (E), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Alabama Canebrake Pitcher Plant (E); Chilton Co., AL

Walnut Creek HUC12 031501070802 (flows into Coosa River – Lake Mitchell) – Indiana Bat, Red-cockaded Woodpecker (E), Wood Stork (T) , Rough Hornsnail (E), Southern Clubshell (E), Alabama Canebrake Pitcher Plant (E); Coosa/Chilton Co, AL; concerned from its confluence with the Coosa River in Lake Mitchell upstream as far as flows are impacted - Request for further analysis on Walnut Creek

Cargle Creek HUC12 031501070803 (flows into Coosa River – Lake Mitchell) - Indiana Bat (E), Red-cockaded Woodpecker (E), Wood Stork (T), Rough Hornsnail (E), Southern Clubshell (E), Alabama Canebrake Pitcher Plant (E); Chilton Co., AL - Request for further analysis on Cargle Creek

Weogufka Creek HUC12 031501070603 (flows into Hatchet Creek, Lake Mitchell) - Indiana Bat (E), Rough Hornsnail (E), Tulotoma Snail (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Blue Shiner (T), White Fringeless Orchid (T); Coosa Co., AL - Request for further analysis on Weogufka Creek

Lower Hatchet Creek HUC12 031501070709 (flows into Coosa River – Lake Mitchell) - Indiana Bat (E), Red-cockaded Woodpecker (E), Rough Hornsnail (E), Tulotoma Snail (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Kral's Water Plantain (T), White Fringeless Orchid (T); Coosa Co., AL - Request for further analysis on Hatchet Creek

Middle Hatchet Creek HUC12 031501070708 (flows into Coosa River – Lake Mitchell, includes CH) - Indiana Bat (E), Tulotoma Snail (T), Coosa Moccasinshell (E), Finelined Pocketbook (T), Georgia Pigtoe (E), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Triangular Kidneyshell (E), Kral's Water Plantain (T), White Fringeless Orchid (T); Coosa Co., AL - Request for further analysis on Hatchet Creek

Chestnut Creek HUC12 031501070901 (flows into Coosa River) - Wood Stork (T), Finelined Pocketbook (T), Southern Clubshell (E), Alabama Canebrake Pitcher Plant (E); Chilton Co, AL - Request for further analysis on Chestnut Creek

Weoka Creek-Coosa River HUC12 031501070906 (Coosa mainstem – Jordan Lake) - Wood Stork (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Upland Combshell (E); Elmore/Coosa/Chilton Cos., AL

Weoka Creek HUC12 031501070904 (flows into Coosa River Jordan Lake) - Wood Stork (T), Tulotoma Snail (T), Southern Clubshell (E); Elmore/Coosa Cos., AL - Request for further analysis on Weoka Creek

Wolf Creek-Shoal Creek HUC12 031501070902 (Flows into Coosa River Jordan Lake) - Wood Stork (T), Southern Clubshell (E), Alabama Canebrake Pitcher Plant (E); Elmore/Autauga Cos., AL

Sofkahatchee Creek HUC12 031501070905 (flows into Coosa River Jordan Lake) - Wood Stork (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Georgia Rockcress (T); Elmore Co., AL

Tributaries and Federally Listed Species by HUC12 within the ROI, Georgia

Here are all threatened and endangered species that have been recorded and/or have critical habitat in HUC12 watersheds located within a 1-mile buffer of the ROI and flow into Lake Allatoona and the Etowah and Coosa mainstem, Georgia. For the watersheds upstream of Allatoona, one concern would be how reservoir releases or withdrawals at Hickory Log Creek reservoir would impact flows in these reaches. Our concerns with the streams that flow into Allatoona would be potential inundation of listed species habitat and impact on connectivity. Specifically, Amber darters in Lower Shoal Creek would require flowing water to move between the lower reaches of Shoal Creek and the Etowah mainstem. Downstream of Allatoona, concerns would be changes in water elevation and flows that occur from altered releases from the lake.

Butler Creek (HUC12: 31501040902) -- Cherokee Darter (T); Request more analysis of Proctor Creek and Butler Creek

Canton Creek (HUC12: 31501040604) -- Cherokee Darter (T); Frecklebelly Madtom (proposed T)

Clark Creek (HUC12: 31501040903) -- Cherokee Darter (T); Request more analysis of Clark Creek and Tanyard Creek

Etowah River-Lake Allatoona (HUC12: 31501041001) -- Cherokee Darter (T); Request more analysis of Knox Creek, Downing Creek, unnamed tributaries (lat, lon; 34.19367, -84.54881; 34.18568, -84.55276), and Sweetwater Creek

Hickory Log Creek (HUC12: 31501040603) -- Amber Darter (E), Cherokee Darter (T), Frecklebelly Madtom (proposed T); Request more analysis of Hickory Log Creek and Etowah mainstem

Jug Creek-Etowah River (HUC12: 31501040605) -- Amber Darter (E), Cherokee Darter (T), within proposed critical habitat for Frecklebelly Madtom (proposed T); Request more analysis of Jug Creek and unnamed tributaries of the Etowah mainstem and reservoir (lat, lon; 34.23112, -84.540136)

Lake Allatoona (HUC12: 31501041004) -- Cherokee Darter (T), Northern Myotis (T); Request more analysis of Illinois Creek, Kellogg Creek, unnamed tributary (34.116245, -84.617808)

Little River-Lake Allatoona (HUC12: 31501040809) -- Cherokee Darter (T); Request more analysis of Rose Creek

Lower Shoal Creek (HUC12: 31501040704) -- Amber Darter (E); Request more analysis of Shoal Creek

Rocky Creek-Little River (HUC12: 31501040804) -- Cherokee Darter (T); Cherokee darter habitat is upstream and not near the lake

Stamp Creek (HUC12: 31501041002) -- Cherokee Darter (T), Etowah Darter (E), Northern Myotis (T); White Fringeless Orchid; Request more analysis on Stamp Creek and Boston Creek

Little Allatoona Creek (HUC12: 315011040901) -- Cherokee Darter (T); Request more analysis of unnamed tributary (34.042625, -84.7038220) and Allatoona Creek

Ward Creek-Etowah River (HUC12: 31501041301) -- Cherokee Darter (T), Northern Myotis (T); Cherokee darter habitat is further downstream and not near the lake

Little Dry Creek-Oostanaula River (HUC12: 031501030604) -- within final critical habitat for Finelined Pocketbook (T), Alabama moccasinshell (T), Coosa moccasinshell (E), Interrupted rocksnail (E), Ovate clubshell (E), Southern acornshell (E), Southern clubshell (E), Southern pigtoe (E), Triangular kidneyshell (E), Upland combshell (E); Request more analysis of Oostanaula River

Webb Creek-Coosa River (HUC12: 31501050201) -- Georgia Rockcress (T; within critical habitat), Large-flowered Skullcap (T), Southern Clubshell (E), Tennessee Yellow-eyed Grass (E); Request more analysis of unnamed tributary (34.205496, -85.230227) and its confluence with the Coosa mainstem

Ballplay Creek-Coosa River (HUC12: 31501050206) -- Mohr's Barbara's-buttons (T)

Morton Bend (HUC12: 31501050205) -- Large-flowered Skullcap (T)

Lower Racoon Creek (HUC12: 31501041203) -- Cherokee Darter (T), Etowah Darter (E)

ADDENDUM TO BIOLOGICAL ASSESSMENT
FOR THE ALLATOONA LAKE
WATER SUPPLY STORAGE REALLOCATION STUDY AND UPDATES TO WEISS AND LOGAN MARTIN RESERVOIRS
WATER CONTROL MANUALS

The U.S. Fish and Wildlife Service (USFWS) per their July 9, 2020, letter stated that they did not receive all information necessary to evaluate the Tentatively Selected Plan (TSP) in the updated Biological Assessment (BA) submitted in May 2020. The request from the USFWS (blue) and the responses from the U.S. Army Corps of Engineers, Mobile District (USACE) (black) are included below.

• Description and justification on the Region of Influence (ROI) selected for the TSP.

From Section E.1 of Appendix E to the Feasibility Report/ Environmental Impact Statement and reiterated in Section 4.0 of the BA:

*"The specific federal actions considered in this Final FR/SEIS will affect only a portion of the overall ACT River Basin. Hydrologic Engineering Center-Reservoir System Simulation (HEC-ResSim) and Hydrologic Engineering Center water quality model (HEC-5Q) simulation results presented and evaluated in Section E.2 of this appendix **[Appendix E to the Feasibility Report/ Environmental Impact Statement]** and summarized in Sections 4 and 5 of the main report demonstrate that the effects of the proposed actions would be limited to a Region of Influence (ROI) defined as follows: the Etowah River at its confluence with Hickory Log Creek at Canton, GA, downstream to its confluence with the Oostanaula River at Rome, GA, including the U.S. Army Corps of Engineers' (USACE's) Allatoona Dam and Lake; and the Coosa River at Rome downstream to its confluence with the Tallapoosa River near Montgomery, AL (including Weiss Dam and Lake, Logan Martin Dam and Lake, and other Alabama Power Company [APC] reservoirs). The federal actions proposed in this Final FR/SEIS would affect neither the Oostanaula River Basin nor the Tallapoosa River Basin. Accordingly, this section focuses on the narrowed ROI, which is the area most likely to be affected by the proposed federal actions. The HEC-ResSim and HEC-5Q models also demonstrated that the proposed federal actions would have no discernable effect on hydrologic conditions, including water quality, in the Alabama River downstream of the confluence of the Coosa and Tallapoosa rivers and further downstream into the Mobile River and Bay. Accordingly, other environmental resources of interest in this portion of the basin would not be affected by the proposed federal actions. Along the river and*

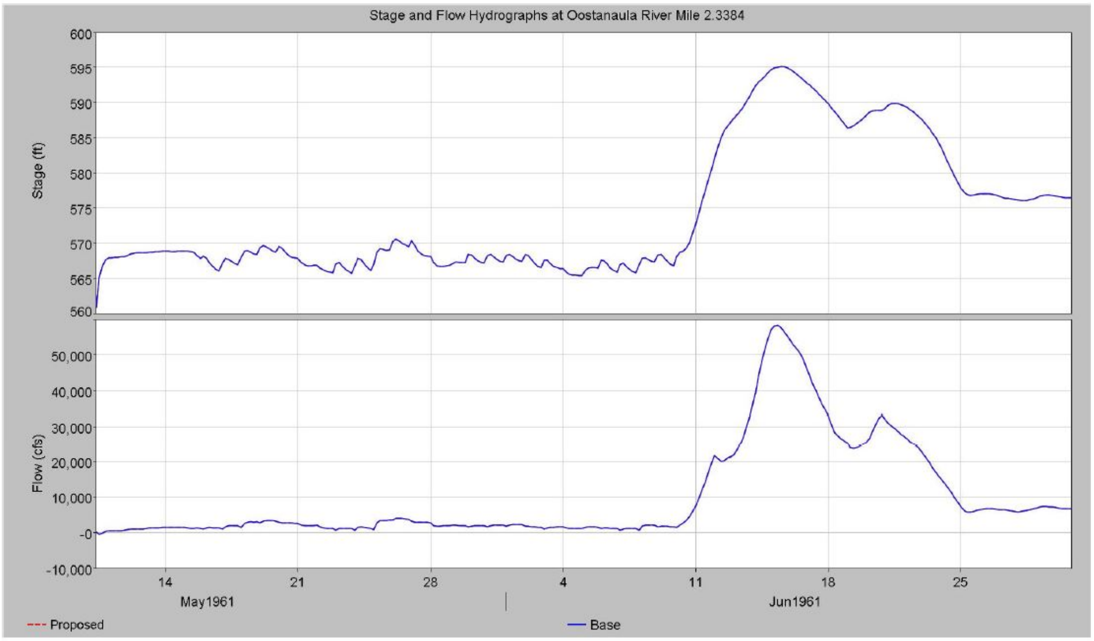
lake segments in the defined ROI, the lateral extent of expected effects generally includes the fee or easement interest in adjacent lands by USACE and APC or the base floodplain along the rivers where no fee or easement interests exist."

• Analysis of how discretion of water balance at Carters Dam and Carters Reregulation Dam will be impacted by the Allatoona Lake storage reallocation

Flood operations at the Carters Dam Project (Carters Reservoir and Carters Reregulation Reservoir) are not expected to change as a result of the TSP. The Carters Project is situated in the upper end of the Alabama-Coosa-Tallapoosa Basin on the Coosawattee River. At the confluence of the Coosawattee River and the Conasuaga River the Oostanaula River is formed. The scope of modeling for this project focused mainly on changes in flooding due to differences in the No Action Alternative (NAA) and the TSP; therefore the modeled location closest to the discharge from the Carters Project is located approximately 2.3 miles from the mouth of the Oostanaula River near Rome, GA, as shown in Figure 1.

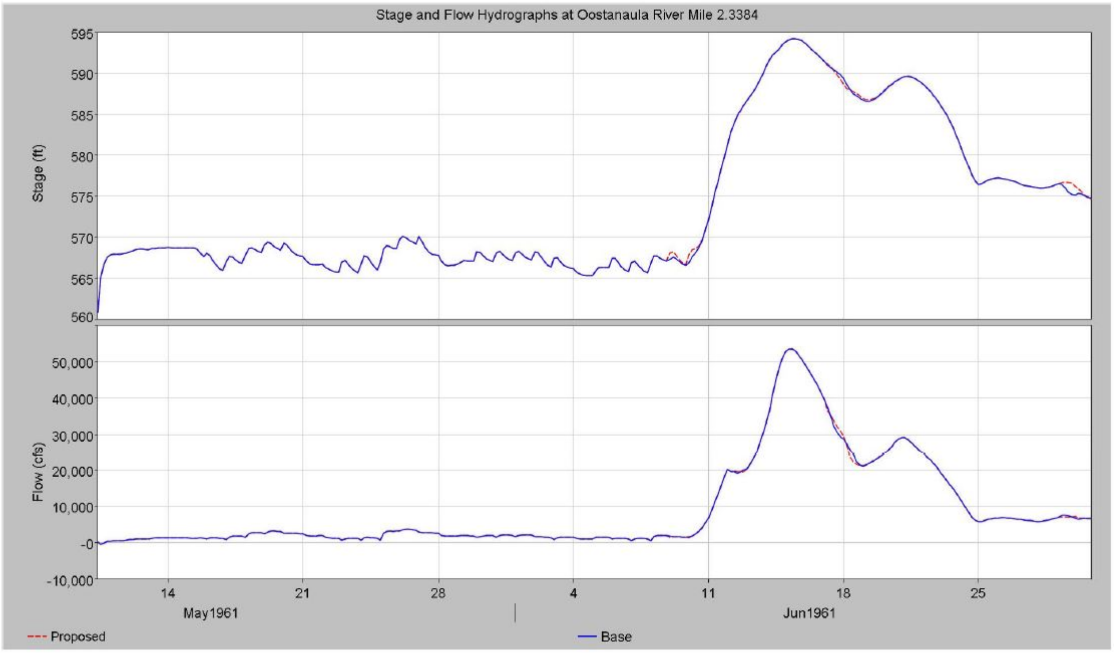
Figure 1: Location of the most upstream Oostanaula gage

For the models no changes are assumed except for those changes in operations included in the TSP. Therefore, any changes in flow and elevation are attributable to changes from the TSP in backwater effects from the intersection of the Oostanaula and Etowah Rivers. Figures 2 through 5 show the modeled 500-year, 200-year, 100-year, 50-year and 20-year floods at river mile 2.3384 on the Oostanaula River, respectively. At the 500-year, 200-year, 100-year, and 50-year flood no change is seen between the NAA and TSP (Figures 2 through 5). At the 20-year flood only minor changes are seen between the NAA and TSP (Figure 6). During droughts, the USACE will still strive to meet the minimum flow requirements of 240 cfs at Carters Reservoirs under the TSP. Allatoona Dam has a minimum flow requirement of 240 cfs immediately downstream of the dam for water quality purposes. That flow is met with the small hydropower unit that is operated 24 hours a day. If the small unit is out of service, a spillway gate or sluice *gate will be opened or one of the main hydropower units will be operated to meet minimum flow requirements.*



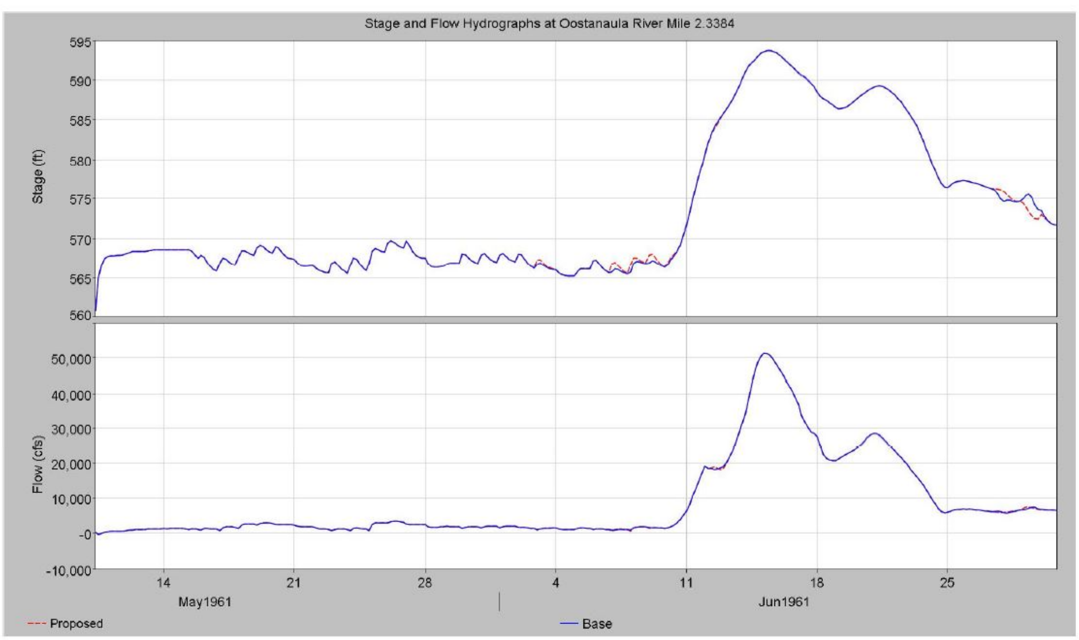
Stage/Flow at Oostanaula River Mile 2.3384 U/S of Veteran's Memorial Pkwy for the 1961 Storm Scaled to a 0.2% ACE

Figure 2: Stage/Flow at Oostanaula River Mile 2.3384, 500-yr flood annual exceedance



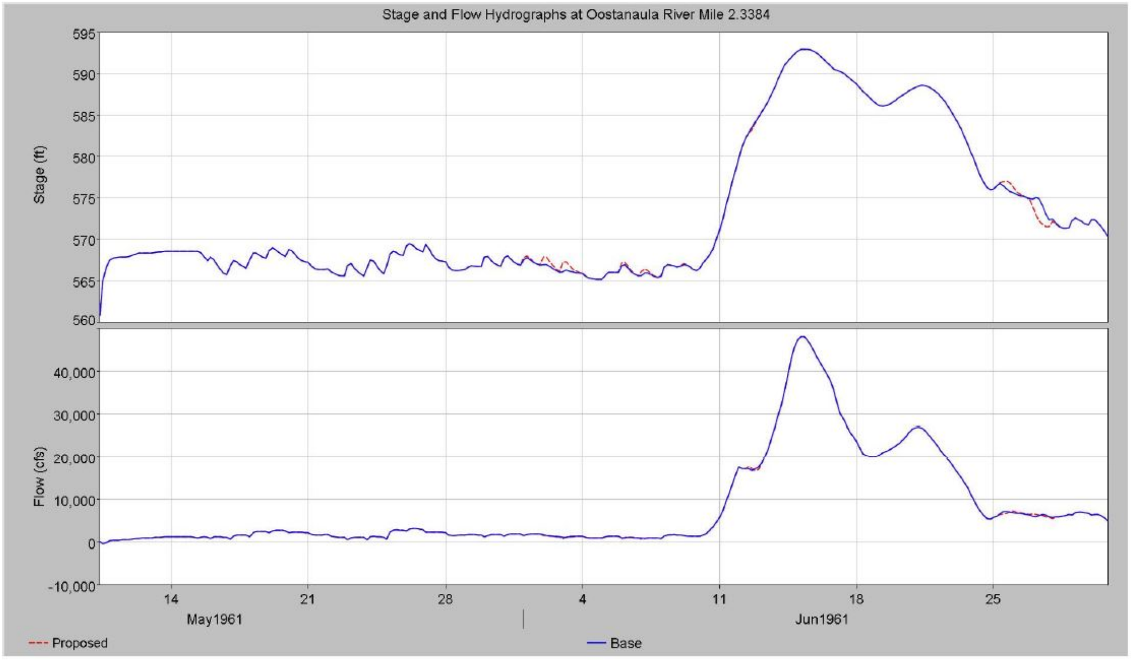
Stage/Flow at Oostanaula River Mile 2.3384 U/S of Veteran's Memorial Pkwy for the 1961 Storm Scaled to a 0.5% ACE

Figure 3: Stage/Flow at Oostanaula River Mile 2.3384, 200-yr flood annual exceedance.



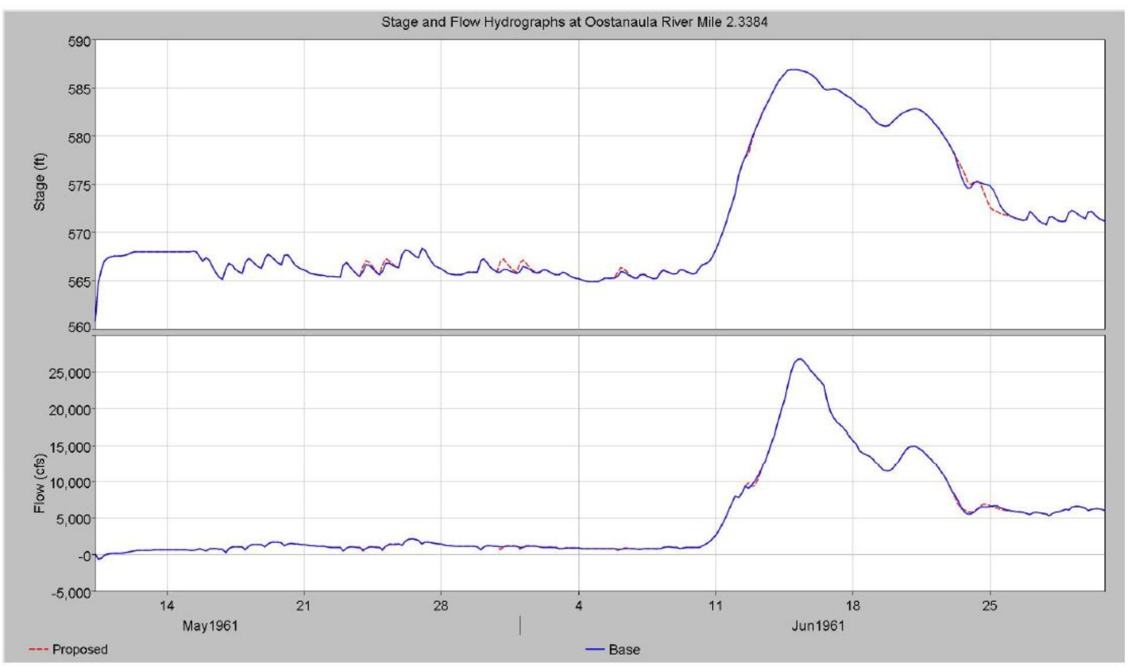
Stage/Flow at Oostanaula River Mile 2.3384 U/S of Veteran's Memorial Pkwy for the 1961 Storm Scaled to a 1.0% ACE

Figure 4: Stage/Flow at Oostanaula River Mile 2.3384, 100-yr flood annual exceedance.



Stage/Flow at Oostanaula River Mile 2.3384 U/S of Veteran's Memorial Pkwy for the 1961 Storm Scaled to a 2.0% ACE

Figure 5: Stage/Flow at Oostanaula River Mile 2.3384, 50-yr flood annual exceedance.



Stage/Flow at Oostanaula River Mile 2.3384 U/S of Veteran's Memorial Pkwy for the 1961 Storm Scaled to a 5.0% ACE

Figure 6: Stage/Flow at Oostanaula River Mile 2.3384, 20-yr flood annual exceedance.

• Changes in hydropower operations at Allatoona Dam due to the TSP

Hydropower operations at Allatoona Dam are not expected to change as a result of the TSP. The typical number of hours of peaking generation within each action zone of the conservation storage pool remains unchanged from the current operation (NAA). An analysis of the Allatoona flow releases from the dam provide verification.

From section 5.1.2.2 of Final Supplemental EIS: Alternative 11 (TSP) would likely result in minor changes to flow conditions in the Etowah River below Allatoona Dam compared to the NAA. The minor differences from flow conditions under Alternative 11 compared to the NAA are likely to be a direct result of some adjustments in the number of units generating and the number of hours they would be generating in order to maintain the pool in Allatoona Lake at a slightly higher level (about 1 to 1.5 ft) during the year. Releases from Allatoona Dam under Alternative 11 would closely align with those under the NAA at the median, and 90 percent exceedance levels, but would be marginally lower, mostly in the November through March period. Little change in releases from Allatoona Dam would be expected in the late spring and summer months.

• Changes in pool elevation and reservoir footprint at Allatoona Lake due to the TSP

The USACE is providing the USFWS a footprint of Allatoona Lake showing the summer and winter pool contours for both current and proposed operations.

From section 5.1.1.2 of Final Supplemental EIS: Under Alternative 11, USACE would reallocate an additional 33,872 ac-ft of reservoir storage at Allatoona Lake from its current purpose(s) to M&I water supply. The reallocation would come from a combination of flood storage (11,670 ac-ft) and conservation storage (22,202 ac-ft). The summer guide curve elevation would be raised from 840 ft to 841 ft and the winter guide curve elevation would be raised from 823 ft to 824.5 ft. Thus, the pool level in Allatoona Lake would be maintained at a slightly higher level throughout the year compared to current operations under the NAA.

Over the simulated 73-year period of hydrologic record, median pool levels in Allatoona Lake would be between about 1 to 1.5 ft higher than the NAA from January through July and from 0 to 1 ft higher from August through December (Figure 7). At the 90 percent exceedance level (dry conditions), the pool levels would be about 1 to 1.5 ft higher than the NAA from mid-December through May, about 0.5 to 1 ft higher from June through July, and about the same as the NAA from August to early December (Figure 8). Over the modeled period of record, the lowest water surface elevation that the lake would be *expected to reach would be elevation 817.3 ft, about 1.2 ft lower than the NAA and about 5.7 ft below the current winter guide curve level of 823 ft.*

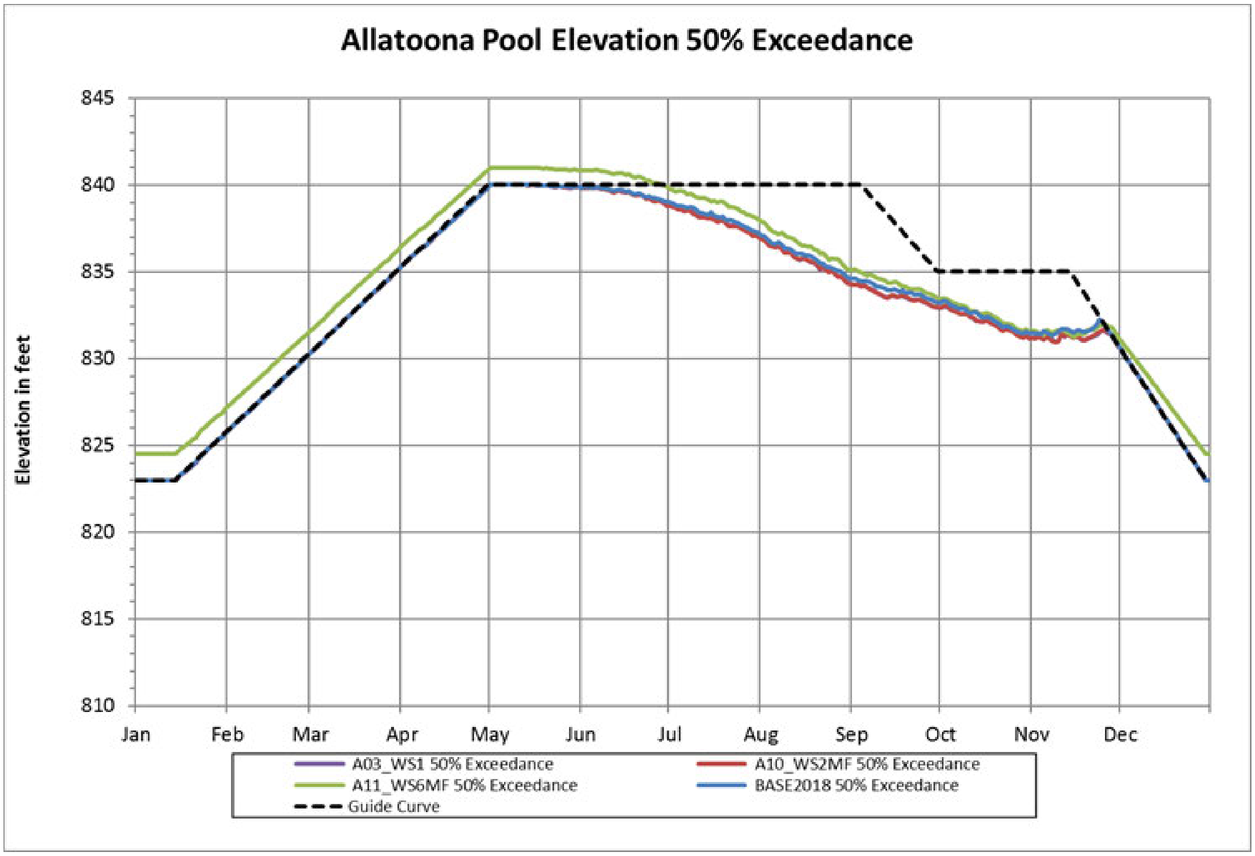


Figure 7: Allatoona Lake pool Elevation 50% Exceedance.

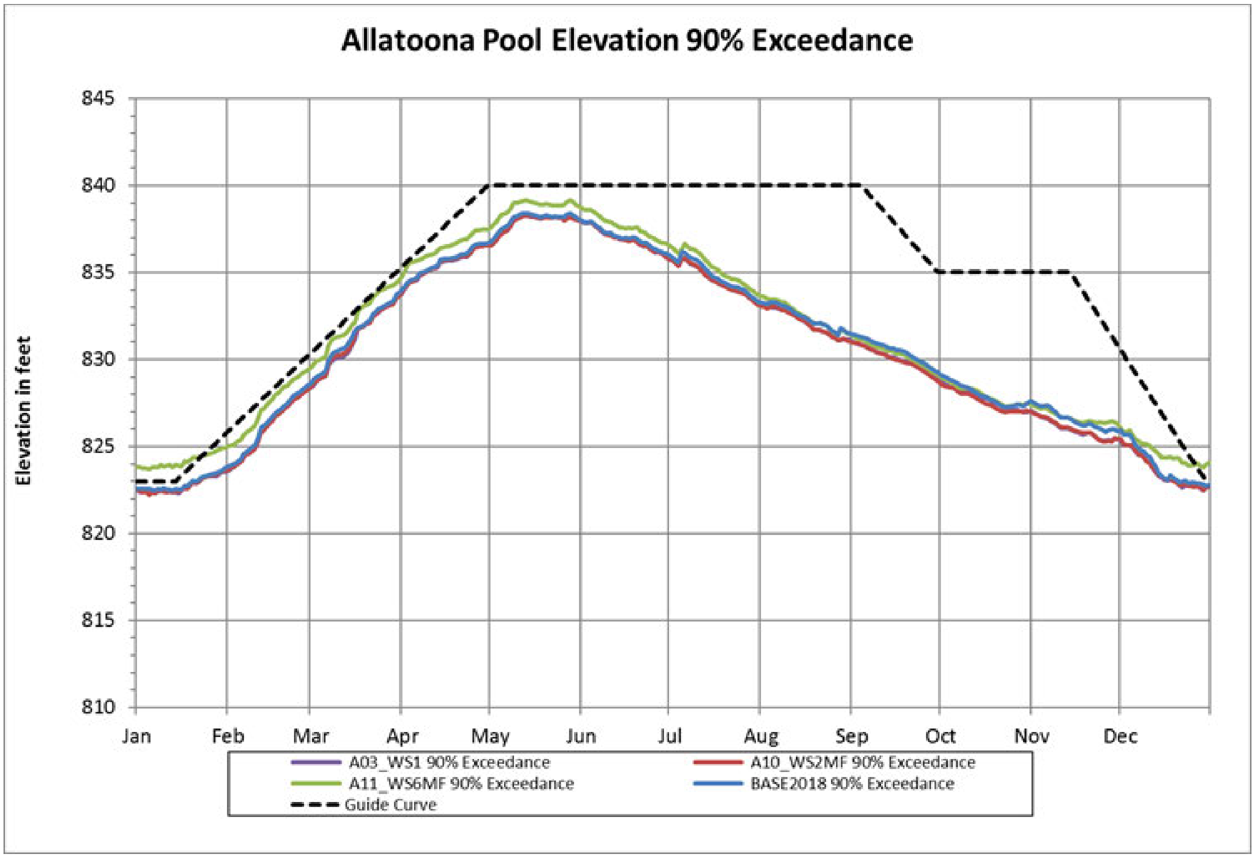


Figure 8: Allatoona Lake pool Elevation 90% Exceedance

• Impacts analysis on threatened and endangered species locations within the ROI, specifically in the tributaries (see Attachment 1).

Data Availability

Lake Allatoona- The available dataset for Lake Allatoona consists of a shapefile created by the USACE from available elevation data. This shapefile contains contour lines showing elevations 841, 840, 823.5, and 824. Data artifacts exist from the procedure of flying the LiDAR in the upper ends of Lake Allatoona and the mainstem Etowah, and the processes of smoothing the contours.

Etowah/ Coosa Rivers Below Allatoona- The available dataset for the Etowah River below Allatoona consists of raster files that show inundation along the river during a variety of flood events. These were generated using the USACE HEC-RAS model.

Weiss Lake- The available dataset for Weiss consists of elevation raster based off Lidar provide by Alabama Power.

Coosa River Below Weiss- The available dataset for the Coosa River below Weiss consists of raster files that show inundation depth along the river during a variety of flood events. These were generated using the USACE HEC-RAS model. APC utilized the unsteady HEC-RAS hydraulic model that is a part of the Real Time Simulation (HEC-RTS) model of the ACT basin. HEC-RTS is the non-USACE version of the Corps Water Management System (CWMS), and is the combination of hydrologic, reservoir routing, hydraulic, and economic models into one system that can be used to analyze the impacts of real-time changes to project operations during flooding events. The HEC-RTS model was created around the same time as the CWMS model, and it utilized the CWMS HEC-RAS model. This HEC-RAS model was created for the Mobile District by West Consultants as a part of the overall ACT basin CWMS effort. APC completed significant improvements to the model by updating the terrain with LiDAR, adjusting cross sections, and updating Manning's n values. This updated HEC-RAS model was then used to route the APC project discharges for the various events for the base (existing) and proposed conditions.

The HEC-RAS model used in this analysis is a 1-dimensional unsteady model, meaning that it provides data at specific cross sections along the river, and that the model can handle flows that change with respect to time. GIS output can be generated to show data between cross sections, however these are simply obtained by averaging data between adjacent cross sections. This averaged data is generally considered an acceptable representation of the model conditions for areas that are only influenced by the river's flows, however when looking at the tributaries upstream of the mouth, this data would be inaccurate, as the model uses aggregated inflow nodes instead of inflow from every individual creek. Because of this, the model misses the exact location of the inflow, and does not account for the timing of the tributary's hydrograph. In other words, changes in how the river and tributary hydrographs line up could cause changes in the depth and duration of flooding on the lower portion of tributaries entering the river. To really understand the impacts to water depth and flood duration caused by the proposed changes at any specific tributary, hydrologic and hydraulic models specific to the tributary would have to be developed. Considering the number of tributaries, the lack of data on many of them, and the cost and time needed for such an effort, it would be unrealistic to attempt such an endeavor.

The best data that can be provided on impacts to the tributaries is in Attachment 2. The data comes from the cross sections that were nearest to the confluence of each tributary with the Coosa River. For the depths, we used the direct model output for the given cross section, and for the duration, we looked at a point along the cross section that was adjacent to the main river channel, where the ground is not always inundated, but was inundated during both the existing and proposed events. These values can be considered as representing the riverine condition that the tributaries are discharging *into. This data can be used to infer the conditions of the tributary up to the point that the bottom elevation of the tributary rises above the river water surface elevation provided, however this must be done with the caveat that flow in the tributary would cause the stream water surface elevation to rise above the river water surface elevation provided. It is also of note that duration data is extremely variable depending on the topography of the location, and thus cannot be as easily transferred to differing locations. The most useful aspect of the provided duration data is the delta between the existing versus proposed conditions, which should be generally the same for nearby points directly adjacent to the river channel.*

Sedimentation

In section 7.7 of the May 2020 Biological Assessment (BA) a detailed description of the hydrology of the Coosa River system including its tributaries is provided. On page 52 of this BA, a determination was made that "while the proposed action would cause some changes to the stage and flow hydrographs along the Coosa River, the magnitude and duration of these changes were unlikely to cause a measurable change in sedimentation rates from the NAA. Based on the information available, there is not expected to be a measurable change in sedimentation induced impacts to Coosa River tributaries as a result of the implementation of the proposed action."

Water Quality

Section 7.6.2 of the May 2020 BA details the changes in water quality through the Coosa and Etowah mainstem modeled by the USACE's HEC-5Q Water Quality Model. Page 49 reads "Overall, median values that were modeled in HEC-5Q meet all state water quality standards along the Etowah River and the Coosa River and their reservoirs except for the TP concentration in Weiss Lake. Modeled values at the 95 percent occurrence fail to meet state standards in all reservoirs for chlorophyll a and in Weiss Lake for TP. DO standards are met at every reservoir for every occurrence level except Allatoona Lake and Logan Martin Lake at the 5 percent occurrence level. Modeled results at the 50 percent and 95 percent occurrence levels fail to meet the USEPA acceptable ranges for TP in all reservoirs and at the 5 percent occurrence level in Weiss Lake and H. Neely Henry Lake; however, USEPA acceptable ranges for TN are met in all reservoirs for all occurrence levels. The reservoirs failing to meet state standards or USEPA acceptable ranges fail regardless of whether Alternative 11 or NAA is implemented. ***Changes in concentrations of water quality parameters resulting from the implementation of Alternative 11, have no significant effects on the water quality in the region of interest.****" It is important to note that only the mainstems of the Coosa and Etowah Rivers are modeled in the HEC-5Q model, however without a marked change in hydrology at the mouth of a particular tributary it is unlikely that the water quality of said tributary will be changed under the proposed* *action.*

Species Impacts Analysis

Using the species list provided by the USFWS (Attachment 1), the USACE conducted additional analysis on species occurring in the tributaries within the ROI.

Alabama

Mud Creek-Spring Creek

Spring Creek is within the ranges of the nine following threatened (T) and endangered (E) species - Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Alabama Leather Flower (E), Green Pitcher Plant (E), Harperella (E), Kral's Water Plantain (T), and Mohr's Barbara's Buttons (T).

Changes to the Spring Creek Basin were analyzed by comparing elevation models of inundation at the top of induced surcharge under current operations (elevation 574 ft) and the proposed action (elevation 572 ft). Induced surcharge operations at Weiss Reservoir have not exceeded elevation 572 ft as temporary deviations from the water control manual have been allowed to prevent flooding of private property constructed under the 574 ft contour line. Because of this, no significant changes are expected to either the water elevation or duration of inundation any of the areas of Weiss Reservoir, including Spring Creek.

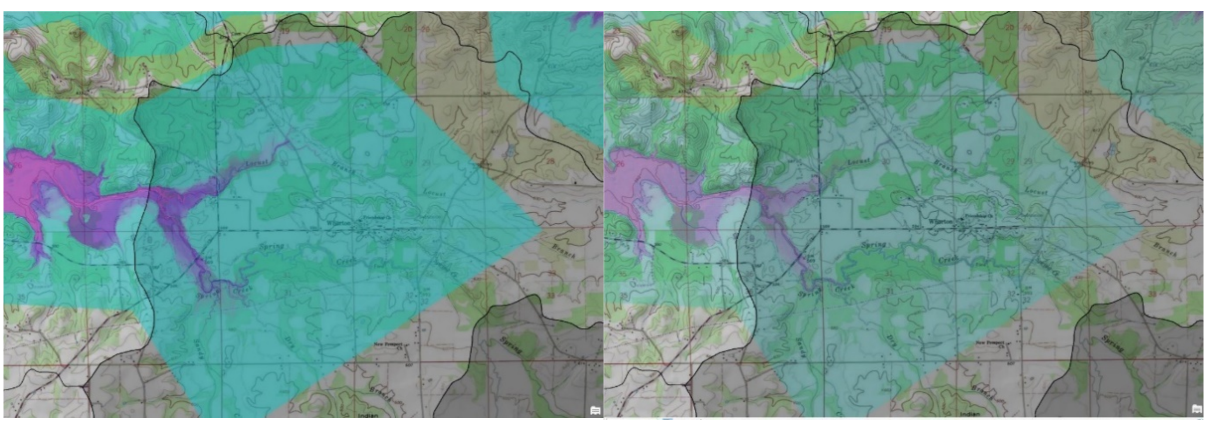


Figure 9: Spring Creek at Elevation 574 (Current Operations) vs Elevation 572 (Proposed Operations)

Effects Determination for listed species that may occur within Spring Creek are discussed below.

<u>Gray Bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the Gray bat (pg 15 of the BA), the bat may be present

in the Spring Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Spring Creek Basin that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of this bat. Therefore, the proposed action may affect, but is not likely to adversely affect the Gray bat within Spring Creek.

<u>Indiana Bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the Indiana bat (pg 16 of the BA), the bat may be present in the Spring Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood elevation, associated duration of elevation changes, and water quality conditions in the Spring Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible.

Changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of this species. Therefore, the proposed action may affect, but is not likely to adversely affect the Indiana bat within Spring Creek.

<u>Northern Long-Eared Bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the northern long-eared bat (pg 16 of the BA), the bat may be present in the Spring Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in Spring Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Northern Long-Eared bat within Spring Creek.

<u>Southern Clubshell</u>- The Southern Clubshell is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Within the Spring Creek basin there are no major changes expected to hydrology. Under the proposed action, the operations at Lake Weiss are only altered under extreme flood conditions where the top of surcharge pool will be lowered from 574 ft NGVD 88 to 572 ft NGVD 88. Both APC and the USACE have operated Weiss Reservoir to avoid reaching pool elevations above 572 ft as to avoid structures that have been built in the surcharge pool elevations, therefore no noticeable changes to the hydrology in Spring Creek and/or its minor tributaries are anticipated.

Based upon the USACE's analysis, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Southern Clubshell.

<u>Alabama Leather Flower</u>- There are only a few known occurrences of the Alabama Leather Flower in northeastern Alabama and northwestern Georgia. Sexual reproduction is limited in this species, so there are probably few genetic individuals. Populations mostly occur in areas subject to right-of-way maintenance activities, such as along highways or pipelines (NatureServe, 2020).

The Alabama Leather Flower occupies silt and clay of alluvial, grass-sedge openings along a highway right-of-way, extending into the adjacent hardwood edge. A well-draining site, located in full sunlight, promotes the rapid growth of C. socialis. C. socialis was found beneath a fence that separated this land from an adjacent wooded area. (NatureServe, 2020).

The habitat of the Alabama Leather Flower does not occur within the floodplain of Spring Creek and as such the proposed changes will have no effect on the Alabama Leather Flower in Spring Creek.

<u>Green Pitcher Plant</u>- The green pitcher plant is known to occur in Alabama, Georgia, and southwestern North Carolina. There are historical records of populations in Tennessee. Of the 36 known populations of the Green Pitcher Plant, most occur in Alabama. The primary stressor on the green pitcher plants is land development and use. The green pitcher plant is fire dependent and as fire repression techniques become widespread it and other fire dependent have become imperiled. The green pitcher plant occurs primarily in bogs and springheads. (Nature Serve, 2020)

Within the Spring Creek basin there are no major changes expected to hydrology. Under the proposed action, the operations at Lake Weiss are only altered under extreme flood conditions where the top of surcharge pool will be lowered from 574 ft NGVD 88 to 572 ft NGVD 88. Both APC and the USACE have operated Weiss Reservoir to avoid reaching pool elevations above 572 ft as to avoid structures that have been built in the surcharge pool elevations. Therefore, there will be no noticeable changes to the hydrology in Spring Creek and/ or its minor tributaries. Furthermore, any changes to hydrology will not affect the upstream bogs in the Spring Creek Basin.

The changes in operations may affect but are not likely to adversely affect the habitat or reproduction of the green pitcher plant.

<u>*Harperella-*</u> *Harperella has approximately 45 populations in Alabama, Georgia, South Carolina, North Carolina, Maryland, West Virginia, Arkansas, and Oklahoma. Populations occur in a very narrow set of hydrological conditions. Therefore, it is sensitive to upstream changes in hydrology and water quality (NatureServe, 2020). The Alabama populations, in contrast with the North Carolina and Georgia, are doing "well" (Douglas, 2008). Harperella is found on saturated substrates and readily tolerates periodic, moderate flooding. This tolerance may be of key importance to the plant's survival, for few potential competitors are adapted to such water fluctuations (NatureServe, 2020).*

Within the Spring Creek basin there are no major changes expected to hydrology. Under the proposed action, the operations at Lake Weiss are only altered under extreme flood conditions where the top of surcharge pool will be lowered from 574 ft NGVD 88 to 572 ft NGVD 88. Both APC and the USACE have operated Weiss Reservoir to avoid reaching pool elevations above 572 ft as to avoid structures that have been built in the surcharge pool elevations. Therefore, there will be no noticeable changes to the hydrology in Spring Creek and/or its minor tributaries. As Haperella is a flood tolerant species, any minor changes to hydrology should be well tolerated.

Based upon the USACE's analysis, changes in operations may affect but are not likely to adversely affect the habitat or reproduction of Harperella.

<u>*Kral's Water Plantain-*</u> *Kral's Water Plantain is known to occur in the Little River basin, the Sispsy Fork of the Black Warrior River and along Hatchet Creek. Biologists report that some populations on Little River are extant as of 2006, indicating that at least some aggregations of the Little River population have been viable more than 15 years. The plant occurs in shallow riffles, jointed, flat sandstone slabs, and substrates that include cobbles, small boulders, and sand.*

No studies have been conducted to assess the species' threshold in relation to tolerance of sedimentation. Kral's Water Plantain is a submersed aquatic, perennial herb. It can float above or below the water. Kral's Water Plantain typically occurs on frequently exposed shoals or rooted among loose boulders in quiet pools up to 1 m (3.2 ft) in depth. Plants are locally distributed where suitable habitat exists, and grow in pure stands or in association with various submergents (below-water plants) and emergents (above-water plants). The immediate banks adjacent to populations of the Karl's Water Plantains are often dominated by thickets of shrubs and adjacent sphagnous seeps commonly containing sedges. Streams with Kral's Water Plantain occurrences are typically narrow and bounded by steep slopes.

Within the Spring Creek basin there are no major changes expected to hydrology. Under the proposed action, the operations at Lake Weiss are only altered under extreme flood conditions where the top of surcharge pool will be lowered from 574 ft NGVD 88 to 572 ft NGVD 88. Both APC and the USACE have operated Weiss Reservoir to avoid reaching pool elevations above 572 ft as to avoid structures that have been built in the surcharge pool elevations. Therefore, there will be no noticeable changes to the hydrology in Spring Creek and/ or its minor tributaries.

Based upon the USACE's analysis, changes in operations may affect but are not likely to adversely affect the habitat or reproduction of Kral's Water Plantain.

<u>*Mohr's Barbara's buttons*</u>*- Sixty-seven occurrences of Mohr's Barbara's buttons are currently known, 56 in Alabama and 11 in Georgia; of these, two are considered historic. Most known populations occur along road margins and rights-of-way. Most decline is believed to be attributed to highway maintenance activities. Habitat occurs in moist to wet prairie-like openings in woodlands (e.g. pine woods), along shale-bedded streams, and in meadows. Woodland clearings may be natural or artificial such as road rights-of-way. It is also found in Ketona dolomite glades of Bibb County, AL. It prefers full sunlight or partial shade. The soils are sandy clays, which are alkaline, high in organic matter and seasonally wet. Common associates include various grasses, sedges, and prairie species (NatureServe, 2020).*

Within the Spring Creek basin there are no major changes expected to hydrology. Under the proposed action, the operations at Lake Weiss are only altered under extreme flood conditions where the top of surcharge pool will be lowered from 574 ft NGVD 88 to 572 ft NGVD 88. Both APC and the USACE have operated Weiss Reservoir to avoid reaching pool elevations above 572 ft as to avoid structures that have been built in the surcharge pool elevations. Therefore, there will be no noticeable changes to the hydrology in Spring Creek and/or its minor tributaries.

Based upon the USACE's analysis, changes in operations may affect but are not likely to adversely affect the habitat or reproduction of Mohr's Barbara's buttons.

<u>***Little River***</u>

The Little River is within the ranges of the eight following T and E species, the Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Southern Clubshell (E), Blue Shiner (T), Green Pitcher Plant (E), Harperella (E,) and Kral's Water Plantain (T).

As with Spring Creek, changes to the Little River Basin were analyzed by comparing elevation models of inundation at the top of induced surcharge under current operations (elevation 574 ft) and the proposed action (elevation 572 ft). Induced surcharge operations at Weiss Reservoir have not exceeded elevation 572 ft as temporary deviations from the water control manual have been allowed to prevent flooding of *private property constructed under the 574 ft contour line. Because of this there are no significant changes expected to either the water elevation or inundation time to any of the areas of Weiss Reservoir, including the Little River.*

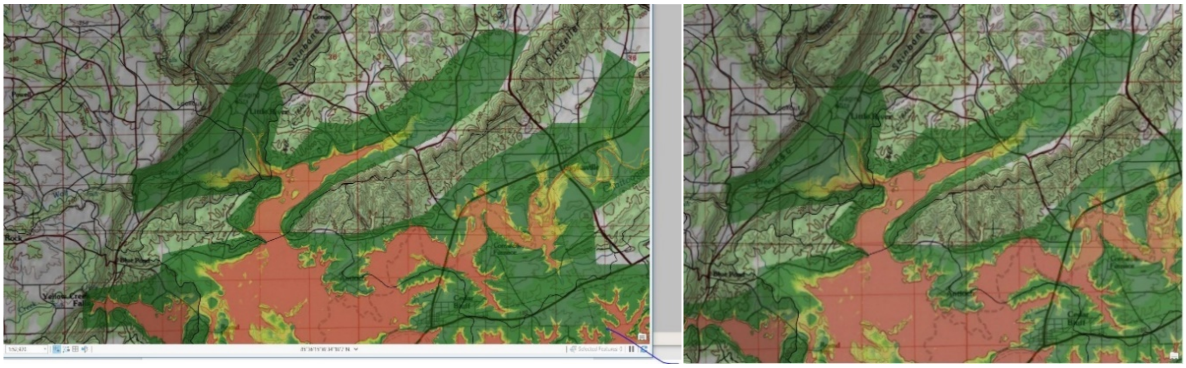


Figure 10: Little River at elevation 574 R and 572 L, there are no major changed to the Little River Area.

Effects determination for listed species that may occur within Little River are discussed below.

<u>*Gray Bat*</u>*- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the Gray bat (pg 15 of the BA), the bat may be present in the Little River area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Lower Little River that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Gray bat within Little River.*

<u>*Indiana Bat*</u>*- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements (pg 16 of the BA), the bat may be present in the Little River area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood elevation, associated duration of elevation changes, and water quality conditions in the Little River that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible; thus, bats may be affected but are not likely to adversely affected.*

<u>*Northern Long-Eared Bat*</u>*- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the northern long-eared bat (pg 16 of the BA), the bat may be present in the Little River area and would have some*

dependency on the water resources. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Little River that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Northern Long-Eared bat within the Little River.

<u>Southern Clubshell</u>- The Southern Clubshell is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics, increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Within the Little River basin there are no major changes expected to hydrology. Under the proposed action, the operations at Lake Weiss are only altered under extreme flood conditions where the top of surcharge pool will be lowered from 574 ft NGVD 88 to 572 ft NGVD 88. Both APC and the USACE have operated Weiss Reservoir to avoid reaching pool elevations above 572 ft as to avoid structures that have been built in the surcharge pool elevations. Therefore no noticeable changes to the hydrology in Little River and/or its minor tributaries.

Changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Southern Clubshell.

<u>Blue Shiner</u>- The blue shiner's historical range included the Cahaba and Coosa river systems, in the Mobile Bay drainage above the Fall Line, Alabama, Georgia, and Tennessee. The species is now restricted to the Conasauga River and tributaries in Tennessee and Georgia, Coosawattee River and tributaries in Georgia, and Weogufka and Choccolocco creeks and lower Little River, tributaries of Coosa River in Alabama (Boschung and Mayden 2004). Declines have been caused by water pollution, siltation, and construction of reservoirs for hydropower, navigation, and flood control (USFWS 1992). Habitat includes cool, clear, small to medium-sized rivers over firm substrates (sand, gravel, or rubble) in pools, backwaters, and areas of moderate current. Previous studies revealed a diet of mostly terrestrial insects supplemented with occasional mayfly and caddisfly immatures (NatureServe, 2020).

Within the Little River basin there are no major changes expected to hydrology. Under the proposed action, the operations at Lake Weiss are only altered under extreme flood conditions where the top of surcharge pool will be lowered from 574 ft NGVD 88 to 572 ft NGVD 88. Both APC and the USACE have operated Weiss Reservoir to avoid *reaching pool elevations above 572 ft as to avoid structures* built in the surcharge pool *elevations. Therefore, no noticeable changes to the hydrology in Little River and/ or its minor tributaries are expected. There are no predictable changes to water quality in the Little River basin. The blue shiner's ability to sight feed on insects will not be impacted by these changes. Based upon this analysis, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Blue Shiner.*

<u>*Green Pitcher Plant*</u>*- The green pitcher plant is known to occur in Alabama, Georgia, and southwestern North Carolina. There are historical records of populations in Tennessee. Of the 36 known populations of the Green Pitcher Plant, most occur in Alabama. The primary stressor on the green pitcher plants is land development and use. The green pitcher plant is fire dependent and as fire repression techniques become widespread it and other fire dependent have become imperiled. The green pitcher plant occurs primarily in bogs and springheads. (Nature Serve, 2020)*

Within the Little River basin there are no major changes expected to hydrology. Under the proposed action, the operations at Lake Weiss are only altered under extreme flood conditions where the top of surcharge pool will be lowered from 574 ft NGVD 88 to 572 ft NGVD 88. Both APC and the USACE have operated Weiss Reservoir to avoid reaching pool elevations above 572 ft as to avoid structures that have been built in the surcharge pool elevations. Therefore, there will be no noticeable changes to the hydrology in Little River and/or its minor tributaries. Furthermore, any changes to hydrology will not affect the upstream bogs in the Little River Basin.

The changes in operations may affect but are not likely to adversely affect the habitat or reproduction of the green pitcher plant.

<u>*Harperella*</u>*- Harperella has approximately 45 populations in Alabama, Georgia, South Carolina, North Carolina, Maryland, West Virginia, Arkansas, and Oklahoma. Populations occur in a very narrow set of hydrological conditions. Therefore, it is sensitive to upstream changes in hydrology and water quality (NatureServe, 2020). The Alabama populations in contrast with the North Carolina and Georgia are doing "well" (Douglas, 2008). Harperella is found on saturated substrates and readily tolerates periodic, moderate flooding. This tolerance may be of key importance to the plant's survival, for few potential competitors are adapted to such water fluctuations (NatureServe, 2020).*

Within the Little River basin there are no major changes expected to hydrology. Under the proposed action, the operations at Lake Weiss are only altered under extreme flood conditions where the top of surcharge pool will be lowered from 574 ft NGVD 88 to 572 ft NGVD 88. Both APC and the USACE have operated Weiss Reservoir to avoid reaching pool elevations above 572 ft as to avoid structures that have been built in the surcharge pool elevations. Therefore, there will be no noticeable changes to the *hydrology Little River and/or its minor tributaries. As Haperella is a flood tolerant species any minor changes to hydrology should be well tolerated.*

Changes in operations may affect but are not likely to adversely affect the habitat or reproduction of Harperella.

Kral's Water Plantain*- Kral's Water Plantain is known from only four tributaries in northern Alabama and Georgia and surviving in only three of these. Siltation due to the clearing and subsequent erosion of watershed soils is a major threat. Several aggregations in the Little River drainage were lost for unknown reasons (USFWS, 2007).*

Within the Little River basin there are no major changes expected to hydrology. Under the proposed action, operations at Lake Weiss are only altered under extreme flood conditions where the top of surcharge pool will be lowered from 574 ft NGVD 88 to 572 ft NGVD 88. Both entities have operated Weiss Reservoir to avoid reaching pool elevations above 572 ft as to avoid structures built in the surcharge pool elevations. Therefore, there will be no noticeable changes to the hydrology in Little River and/ or its minor tributaries.

Based upon the USACE's analysis, changes in operations may affect but are not likely to adversely affect the habitat or reproduction of Kral's Water Plantain.

Lower Terrapin Creek

The closest U.S. Geological Survey (USGS) gage is located about one-half mile upstream of Terrapin Creek. The gage datum is 519 NAVD 88. A modeled 5-year flood under the current operations showed an elevation 534.92 ft elevation. Under the proposed action, the elevation would be 534.98 ft. A selected point along the bank of Terrapin Creek showed an increase in time of inundation by 3 hours under the proposed action. Under the 100-year flood the elevation under current operations would be 534.95 ft. Under the proposed action the elevation would be 538.69 ft. A previously uninundated portion of the bank would be inundated for 230 hours.

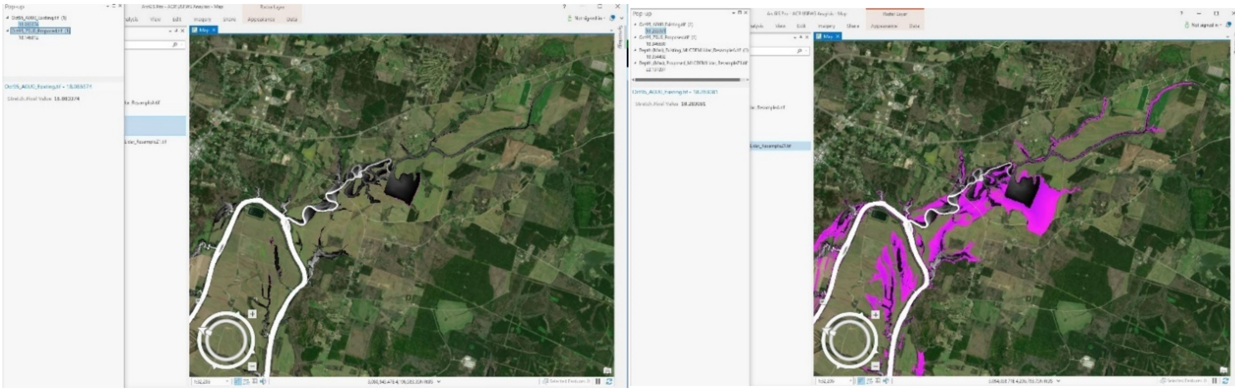


Figure 11: Terrapin Creek under a 5- year flood vs Terrapin Creek in a 100-year flood, changes in inundation are show in purple.

Effects determination for listed species that may occur within Terrapin Creek are provided below.

Within the Lower Terrapin Creek Basin there are the following 15 T and E species: Gray Bat, Indiana Bat, Northern Long-Eared Bat, Coosa Moccasinshell, Finelined Pocketbook, Georgia Pigtoe, Ovate Clubshell, Southern Acornshell, Southern Clubshell, Southern Pigtoe, Triangular Kidneyshell, Upland Combshell, Alabama Leather Flower, Green Pitcher Plant, and Mohr's Barbara's Buttons.

<u>Gray Bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the Gray bat (pg 15 of the BA), the bat may be present in the Terrapin Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Terrapin Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Gray bat within Terrapin Creek.

<u>Indiana Bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the Indiana bat (pg 16 of the BA), the bat may be present in the Terrapin Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood elevation, associated duration of elevation changes, and water quality conditions in Terrapin Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible.

Operations identified in the proposed action may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Indiana Bat.

<u>Northern Long-Eared Bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the Northern Long-Eared bat (pg 16 of the BA), the bat may be present in the Terrapin area and would have some water resources dependency. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in Terrapin Creek that may result from the proposed action. Similar to the other bat species, the likelihood that this species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Northern Long-Eared bat within Terrapin Creek.

<u>Coosa Moccasinshell</u>- As cited in the 2019 5-Year Review, the total distribution of the Coosa moccasinshell is less than 8 stream miles of the Conasauga River and Holly Creek combined (Johnson 2012a). The frequency of collection of Coosa moccasinshell has declined in both tributaries where it is known to survive (Johnson and Evans 2000, P. Johnson, pers. comm. 2018). The species was found at 3 sites out of 31 localities surveyed on the Conasauga River, and at 2 of 7 localities searched on Holly Creek during a 2005 survey effort in and adjacent to the Cherokee and Chattahoochee National Forests (Johnson et al. 2005). Evidence of limited recruitment was observed in the Conasauga River in 2005, but recent recruitment has not been observed in Holly Creek (MRBMRC 2010)

The Coosa Moccasinshell inhabits sand/gravel/ cobble shoals with moderate to strong currents in small to medium sized streams. Coosa moccasinshells are usually burrowed completely in the stream bottom.

The hydrology of Terrapin Creek will be slightly altered by the proposed action. During a 5-year flood, the elevation that modeling predicts at the mouth of the creek will be 0.06 feet higher than under the current operations. The duration of inundation for the edge of the creek also is predicted to increase by 3 hours. In a modeled 100- year flood the elevation at the mouth of the creek will be 3.74 feet higher under the proposed action.

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5-year flood, and the sediment tolerant nature of the Coosa Moccasinshell, the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Coosa Moccasinshell.

<u>Finelined Pocketbook</u>- The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to

survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019. New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized (USFWS 2019).

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5-year flood, the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Finelined Pocketbook.

<u>Georgia Pigtoe</u>- The Georgia Pigtoe has experienced a tremendous reduction in number of locations and population size to the point where it was officially declared extinct by the IUCN in 1994. A single subpopulation with only a few live individuals was found in a very localized portion of the upper Conasauga River in Georgia. Otherwise, a collection of dead shells (1997-1998) and a discovered population in the Upper Conasauga River are all that remain of the global population of this species which has experienced an extensive reduction in former range. It has been listed by USFWS as an endangered species with critical habitat designated.

This species inhabits stretches of a medium sized river with good current and a sand/gravel substrate. A substrate composed of coarse sand and gravel in stretches of rivers with good current provides the most suitable habitat (Parmalee and Bogan, 1998). It is found in shallow runs and riffles with strong to moderate current and coarse sand-gravel-cobble bottom (USFWS, 2010).

The Georgia Pigtoe has only been found recently in the Upper Conasauga River and is not found in the Terrapin Creek Basin. Based upon the species life cycle and current range, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish of the Georgia Pigtoe.

<u>Ovate Clubshell</u>- The Ovate Clubshell is found in riffles, runs, and shoals of small creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel occurred in the Tombigbee and Black Warrior, Alabama, Cahaba, and Coosa

rivers and their tributaries within Mississippi and Alabama; however, the Coosa River and its tributaries are not listed as current locations for known surviving populations (USFWS 2019). Overall, the mussel is noted to be currently stable, with tributary populations being discovered in several Tombigbee River, Cahaba River, and Alabama River tributaries (USFWS 2019). Historically in the Coosa Basin the Ovate Clubshell was only found in the Etowah and Conasagua Rivers, not the Weiss Bypass/ Terrapin Creek area (Williams and Hughes, 1998).

The Ovate Clubshell has only been found recently in the Tombigbee River, Cahaba River, and the Alabama River and is not found in the Terrapin Creek Basin. The changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any suitable glochidia host fish of the Ovate Clubshell.

Southern Acornshell- If the Southern Acornshell is still extant, there are likely fewer than five occurrences, but in all likelihood, this species is extinct. The most recent records were from tributaries of the Coosa River (above Weiss Dam in Alabama) in the early 1970s, and the Cahaba in the 1930s (USFWS, 2004). The Cahaba River specimen is questionable, at best (Williams et al., 2008). The most recent documentation of museum specimens was taken in 1973 from the Conasauga River, Georgia, and Little Canoe Creek on the Etowah and St. Clair County line, Alabama (Williams et al., 2008). Potentially suitable habitat can still be found in several rivers and streams of the upper Coosa River drainage, but it has not been found in the Cahaba River drainage in several decades.

Life history and host fish are unknown (USFWS, 2003).

The Southern Acornshell has not been found recently in the Coosa River Basin and is not found in the Terrapin Creek Basin. In its 2018 5-year review, the USFWS recommended it be delisted as it is believed to be extinct . The changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Southern Acornshell.

Southern Clubshell- The Southern Clubshell found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams but the species may also be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates that are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5-year flood, the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

<u>Southern Pigtoe</u>- The Southern Pigtoe is found in riffles, runs, and shoals of medium creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel's range includes the Coosa River and tributaries in Alabama, Georgia, and Tennessee; currently, the mussel is found in tributaries which include: Big Canoe Creek, Terrapin Creek, Yellowleaf Creek, Hatchet Creek, and Cheaha Creek (USFWS 2019). Since its listing, the more recently tributary populations of the mussel were discovered in Terrapin, Yellowleaf, and Hatchet creeks (USFWS 2019). All populations of the mussel are noted to be small and localized, with the most robust population found in Shoal Creek (USFWS 2019).

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5-year flood, the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Pigtoe.

<u>Triangular Kidneyshell</u>- According to USFWS's 2019 5-year review, the triangular kidneyshell is stable and hasn't lost any populations since listing. A robust population exists in the Cahaba River. The Sipsey Fork population has stabilized after loss due to the 2000 drought.

Several darters have been identified as good glochidia host. It inhabits sand/gravel/ cobble shoals with moderate to strong currents in small to medium sized streams/rivers within the Mobile River Basin. Suitable habitats and water quality, free of excessive sedimentation and other pollutants, are required for a stable population.

The triangular kidneyshell has no identified populations in Terrain Creek or the Coosa River, as such changes in operations may affect but are not likely to adversely affect the triangular kidney shell.

<u>Upland Combshell</u>- The upland combshell was historically known from the Black Warrior and Cahaba River drainages in Alabama, and the Coosa River drainage in Alabama, Georgia, and Tennessee. It was last collected in the Coosa River drainage in 1988. The

last collection in the Cahaba River drainage was in 1973, and the most recent collection in the Black Warrior River drainage was in the early 1900's. Hurd (1974) cited one record in Tennessee in the Conasauga River but did not actually collect the species during surveys (USFWS, 1993; 1997; 2004; Mirarchi et al., 2004). In the Coosa River basin in Georgia, it is known historically from the Coosa, Etowah, and Oostanaula River drainages but has not been collected live recently (Williams and Hughes, 2001).

It has been located in shoals in rivers and large streams, above the fall line, on stable substrates in moderate to swift currents (USFWS, 1997; 2000).

The Upland Combshell has not been found recently in the Coosa River Basin and is not found in the Terrapin Creek Basin. In its 2018 5-year review the USFWS recommended it be delisted as it is believed to be extinct. As such changes in operations may affect but are not likely to adversely affect the Upland Combshell.

<u>Alabama Leather Flower</u>- There are only a few know occurrences of the Alabama Leather Flower in northeastern Alabama and northwestern Georgia. Sexual reproduction is limited in this species, so there are probably few genetic individuals. Populations mostly occur in areas subject to right-of-way maintenance activities, such as along highways or pipelines (NatureServe, 2020).

The Alabama Leather Flower occupies silt and clay of alluvial, grass-sedge openings along a highway right-of-way, extending into the adjacent hardwood edge. A well-draining site located in full sunlight promotes the rapid growth of C. socialis. C. socialis was found beneath a fence that separated this land from an adjacent wooded area. (NatureServe, 2020).

The habitat of the Alabama Leather Flower does not occur within the floodplain of Terrapin Creek and as such the proposed changes will have no effect on the Alabama Leather Flower.

<u>Green Pitcher Plant</u>- The green pitcher plant is known to occur in Alabama, Georgia, and southwestern North Carolina. There are historical records of populations in Tennessee. Of the 36 known populations of the green pitcher plant most occur in Alabama. The primary stressor on the green pitcher plants is land development and use. The green pitcher plant is fire dependent and as fire repression techniques become widespread it and other fire dependent have become imperiled. The green pitcher plant occurs primarily in bogs and springheads. (Nature Serve, 2020)

The changes in hydrology are not expected to reach the bogs and stream heads along Terrapin Creek and as the changes in operations may affect but are not likely to adversely affect the habitat or reproduction of the green pitcher plant.

<u>Mohr's Barbara's buttons</u>- Sixty-seven occurrences of Mohr's Barbara's buttons are currently known, 56 in Alabama and 11 in Georgia; of these two are considered historic.

Most known populations occur along road margins and rights-of-way. Most decline is believed to be attributed highway maintenance activities. It inhabits moist to wet prairie-like openings in woodlands (e.g. pine woods), along shale-bedded streams, and in meadows. Woodland clearings may be natural or artificial such as road rights-of-way. Also the plant is found in the Ketona dolomite glades of Bibb County, AL. It prefers full sunlight or partial shade. The soils are sandy clays, which are alkaline, high in organic matter and seasonally wet. Common associates include various grasses, sedges, and prairie species (NatureServe, 2020).

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5-year flood, changes in operations may affect but are not likely to adversely affect the habitat or reproduction of Mohr's Barbara's buttons.

Weiss Bypass

In 2014, minimum flow to a 20-mile section of the Coosa River below Weiss Dam (i.e., Weiss Bypass) was restored by the APC, returning the river to a more natural regime. This flow restoration benefits the existing population of southern clubshell located downstream of the dam and will allow reintroduction of several endangered mussel species that were extirpated from this reach.

The closest USGS gage is located about one-half mile upstream of Terrapin Creek. The gage datum is 519 NAVD88. A modeled 5-year flood under the current operations showed an elevation 531.89 ft and a flood duration of 12 hours. Under the proposed action the elevation would be 531.68 ft for a duration of 26 hours. Under the 100-year flood the elevation under current operations would be 532.4 ft for a flood duration of 0 hours. Under the proposed action the elevation would be 535.63 ft for a duration 229 hours.

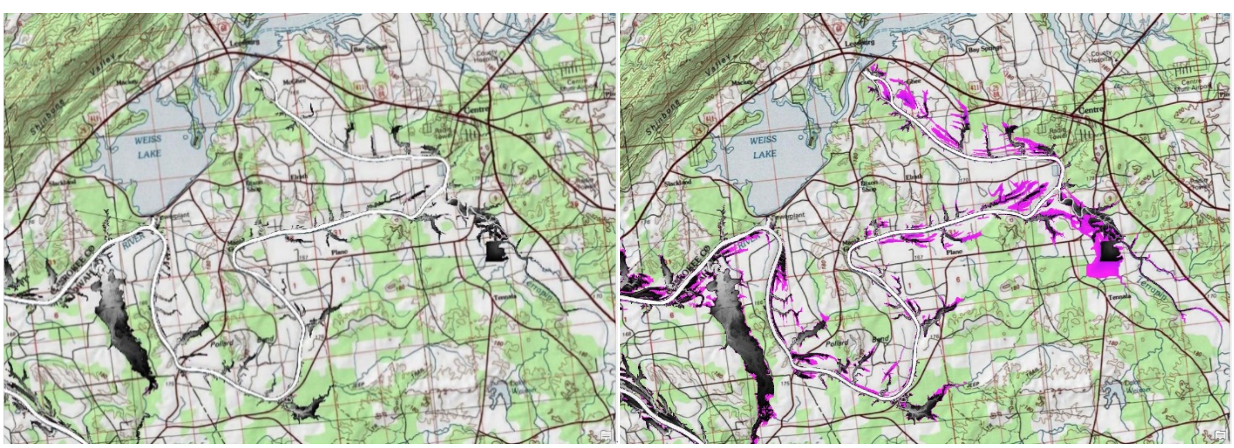


Figure 12: Weiss Bypass under a 5- year flood vs Weiss Bypass in a 100-year flood, changes in inundation are show in purple.

Effects determination for listed species that may occur within Weiss Bypass are provided below.

Within the Weiss Bypass there are the following 12 T and E species, the Gray Bat, Indiana Bat, Northern Long-Eared Bat, Southern Pigtoe, Coosa Moccasinshell, Finelined Pocketbook, Georgia Pigtoe, Ovate Clubshell, Southern Clubshell, Southern Pigtoe, Triangular Kidneyshell, and the Interrupted Rocksnail.

<u>Gray Bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the Gray bat (pg 15 of the BA), the bat may be present in the Weiss Bypass area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Weiss Bypass that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Gray bat within the Weiss Bypass.

<u>Indiana Bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements (pg 16 of the BA), the bat may be present in the Weiss Bypass area and would have some dependency on the water resources. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood elevation, associated duration of elevation changes, and water quality conditions in the Weiss Bypass that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. The Indiana bat may be affected but not likely to adversely affect by the proposed action.

<u>Northern Long-Eared Bat</u>- Given the foraging and habitat requirements of the northern long-eared bat (pg 16 of the BA), the bat may be present in the Weiss Bypass area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Weiss Bypass that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Northern Long-Eared bat within the Weiss Bypass.

<u>Southern Pigtoe</u>- The Southern Pigtoe is found in riffles, runs, and shoals of medium creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel's range includes the Coosa River and tributaries in Alabama, Georgia, and

Tennessee; currently, the mussel is found in tributaries which include: Big Canoe Creek, Terrapin Creek, Yellowleaf Creek, Hatchet Creek, and Cheaha Creek (USFWS 2019). Since its listing, the more recent tributary populations of the mussel were discovered in Terrapin, Yellowleaf, and Hatchet creeks (USFWS 2019). All populations of the mussel are noted to be small and localized, with the most robust population found in Shoal Creek (USFWS 2019).

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5- year flood, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Pigtoe.

<u>Coosa Moccasinshell</u>*- As cited in the 2019 5-Year Review, the total distribution of the Coosa moccasinshell is less than 8 stream miles of the Conasauga River and Holly Creek combined (Johnson 2012a). The frequency of collection of Coosa moccasinshell has declined in both tributaries where it is known to survive (Johnson and Evans 2000, P. Johnson, pers. comm. 2018). The species was found at 3 sites out of 31 localities surveyed on the Conasauga River, and at 2 of 7 localities searched on Holly Creek during a 2005 survey effort in and adjacent to the Cherokee and Chattahoochee National Forests (Johnson et al. 2005). Evidence of limited recruitment was observed in the Conasauga River in 2005, but recent recruitment has not been observed in Holly Creek (MRBMRC 2010).*

The Coosa Moccasinshell inhabits sand/ gravel/ cobble shoals with moderate to strong currents in small to medium sized streams. Coosa moccasinshells are usually burrowed completely in the stream bottom.

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5-year flood, and the sediment tolerant nature of the Coosa Moccasinshell, the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish of the Coosa Moccasinshell.

<u>Finelined Pocketbook-</u> *The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019. New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and*

Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized (USFWS 2019).

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5-year flood, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Finelined Pocketbook.

<u>Georgia Pigtoe</u>- The Georgia Pigtoe has experienced a tremendous reduction in number of locations and population size recently to the point where it was officially declared extinct by the IUCN in 1994. Recently, a single subpopulation with only a few live individuals was found in a very localized portion of the upper Conasauga River in Georgia. Otherwise, a collection of recently dead shells (1997-1998) and a recently discovered population in the Upper Conasauga River are all that remain of the global population of this species which has experienced an extensive reduction in former range. It has recently been listed by USFWS as an endangered species and Critical Habitat designated. Up until recently, it had formerly been thought extinct.

This species inhabits stretches of a medium sized river with good current and a sand/gravel substrate. A substrate composed of coarse sand and gravel in stretches of rivers with good current provides the most suitable habitat (Parmalee and Bogan, 1998). It is found in shallow runs and riffles with strong to moderate current and coarse sand-gravel-cobble bottom (USFWS, 2010).

The Georgia Pigtoe has only been found recently in the Upper Conasauga River and is not found in the Weiss Bypass. Changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Georgia Pigtoe.

<u>Ovate Clubshell</u>- The Ovate Clubshell is found in riffles, runs, and shoals of small creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel occurred in the Tombigbee and Black Warrior, Alabama, Cahaba, and Coosa rivers and their tributaries within Mississippi and Alabama; however, the Coosa River and its tributaries are not listed as current locations for known surviving populations

(USFWS 2019). Overall, the mussel is noted to be currently stable, with tributary populations being discovered in several Tombigbee River, Cahaba River, and Alabama River tributaries (USFWS 2019). Historically in the Coosa Basin the Ovate Clubshell was only found in the Etowah and Conasagua Rivers, not the Weiss Bypass/ Terrapin Creek area (Williams and Hughes, 1998).

The Ovate Clubshell has only been found recently in the Tombigbee River, Cahaba River, and the Alabama River and is not found in the Weiss Bypass. As such operation changes may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any suitable glochidia host fish or the Ovate Clubshell.

<u>Southern Clubshell</u>*- The Southern Clubshell found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).*

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams but the species may also be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates that are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the infrequent nature of a 100-year flood and the only minor changes to the hydrology under a 5-year flood changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

<u>Southern Pigtoe</u>*- The Southern Pigtoe is found in riffles, runs, and shoals of medium creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel's range includes the Coosa River and tributaries in Alabama, Georgia, and Tennessee; currently, the mussel is found in tributaries which include: Big Canoe Creek, Terrapin Creek, Yellowleaf Creek, Hatchet Creek, and Cheaha Creek (USFWS 2019). Since its listing, the more recent tributary populations of the mussel were discovered in Terrapin, Yellowleaf, and Hatchet creeks (USFWS 2019). All populations of the mussel are noted to be small and localized, with the most robust population found in Shoal Creek (USFWS 2019).*

Due to the infrequent nature of a 100-year flood and the only minor changes to the hydrology under a 5-year flood changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Pigtoe.

<u>Triangular Kidneyshell</u>- According to USFWS's 2019 5-year review the triangular kidneyshell is stable and hasn't lost any populations since listing. A robust population exists in the Cahaba River. The Sipsey Fork population has stabilized after loss to the 2000 drought.

Several darters have been identified as good glochidia host. It inhabits sand/gravel/ cobble shoals with moderate to strong currents in small to medium sized streams/rivers within the Mobile River Basin. Suitable habitats and water quality, free of excessive sedimentation and other pollutants, are required for a stable population.

The triangular kidneyshell has no identified populations in the Coosa River Basin, as such it is the USACE determination that the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the triangular kidney shell.

<u>Interrupted Rocksnail</u>- The interrupted rocksnail historically occurred in the Coosa River in Alabama and Georgia. Based on the USFWS's 2020 5-year review the interrupted rocksnail does not occupy any waterbodies in Alabama despite attempts for reintroduction below Jordan Dam and in the Weiss Bypass.

The interrupted rocksnail lives in shoals, riffle, and rock outcroppings. The snail lives attached to bedrock, boulders, coble, and gravel and are sedentary moving only in response to water level changes. The snail lives at water depths less than 50 centimeters (cm) (20 inches (in)), and in water currents less than 40 cm/second (sec) (16 in/sec). Eggs are deposited in the same habitat. Fecundity increases with age and size. The interrupted rocksnail feeds on biofilms and periphyton attached to its habitat substrate (USFWS, 2020).

The interrupted rocksnail has no identified populations in the Coosa River Basin, the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the triangular kidney shell.

<u>Ballplay Creek</u>

Changes to Ballplay Creek were analyzed using the HEC-RAS model of a 5-year and a 100-year storm, under the analyzed storms, minimal changes were seen. Under a 5-year storm the difference in elevation between the proposed action and current operations is 0.09 ft. Under the 100-year flood the difference between the proposed and current operations is 1.48 ft.

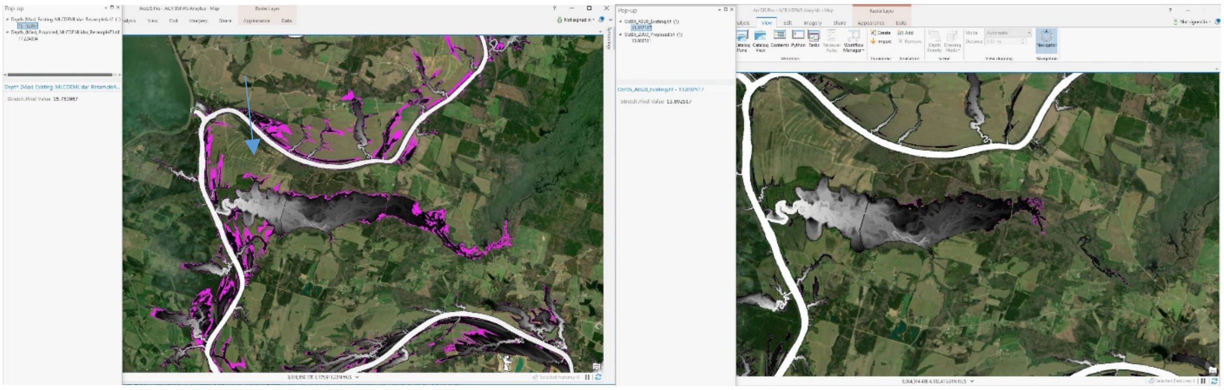


Figure 13: Ballplay Creek under a 5- year flood vs Ballplay Creek in a 100-year flood, changes in inundation are show in purple.

Effects determination for listed species that may occur within Ballplay Creek are provided below.

Ballplay creek is within the ranges of the follow twelve protected species: Gray Bat (E), Indiana Bat (E), Northern Long-Eared Bat (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Upland Combshell (E), Trispot Darter (T), Alabama Leather Flower (E), Green Pitcher Plant (E), Mohr's Barbara's Buttons (T).

Indiana Bat- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the Indiana bat (pg 16 of the BA), the bat may be present in the Ballplay Creek area and would have some dependency on that water resources. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood elevation, associated duration of elevation changes, and water quality conditions in Ballplay Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible (i.e. may affect but not likely to adversely affect).

Northern Long-Eared Bat- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the northern long-eared bat (pg 16 of the BA), the bat may be present in the Ballplay Creek area and would have some water resource dependency. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in Ballplay Creek that may result from the proposed action. Therefore, the proposed action may affect, but is not likely to adversely affect the northern long-eared bat within Ballplay Creek.

<u>Finelined Pocketbook-</u> The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019. New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized (USFWS 2019).

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).

Due to the infrequent nature of a 100-year flood and the only minor changes to the hydrology under a 5-year flood It is the USACE determination that the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Finelined Pocketbook.

<u>Ovate Clubshell-</u> The Ovate Clubshell is found in riffles, runs, and shoals of small creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel occurred in the Tombigbee and Black Warrior, Alabama, Cahaba, and Coosa rivers and their tributaries within Mississippi and Alabama; however, the Coosa River and its tributaries are not listed as current locations for known surviving populations (USFWS 2019). Overall, the mussel is noted to be currently stable, with tributary populations being discovered in several Tombigbee River, Cahaba River, and Alabama River tributaries (USFWS 2019). Historically in the Coosa Basin the Ovate Clubshell was only found in the Etowah and Conasagua Rivers, not the Weiss Bypass/ Terrapin Creek area (Williams and Hughes, 1998).

The Ovate Clubshell has only been found recently in the Tombigbee River, Cahaba River, and the Alabama River and is not found in the Upper Coosa River. As such changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any suitable glochidia host fish of the Ovate Clubshell.

<u>Southern Clubshell</u>- The southern clubshell found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River,

Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5-year flood, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

<u>Upland Combshell</u>- The upland combshell was historically known from the Black Warrior and Cahaba River drainages in Alabama, and the Coosa River drainage in Alabama, Georgia, and Tennessee. It was last collected in the Coosa River drainage in 1988. The last collection in the Cahaba River drainage was in 1973, and the most recent collection in the Black Warrior River drainage was in the early 1900's. Hurd (1974) cited one record in Tennessee in the Conasauga River but did not actually collect the species during surveys (USFWS, 1993; 1997; 2004; Mirarchi et al., 2004). In the Coosa River basin in Georgia, it is known historically from the Coosa, Etowah, and Oostanaula River drainages but has not been collected live recently (Williams and Hughes, 2001).

It has been located in shoals in rivers and large streams, above the fall line, on stable substrates in moderate to swift currents (USFWS, 1997; 2000).

The Upland Combshell has not been found recently in the Coosa River Basin and is not found in the Ballplay Creek. In its 2018 5-year review the USFWS recommended it be delisted as it is believed to be extinct. The changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Upland Combshell.

<u>Trispot Darter</u>- Currently, the trispot darter is known to occur in Little Canoe Creek, Ballplay Creek tributaries, Conasauga River and tributaries, and Coosawattee River and its tributaries. It is a migratory species that uses distinct breeding and nonbreeding habitats. From approximately April to October, the species occupies its nonbreeding habitat, which consists of small to medium margins of rivers and lower reaches of tributaries with slower velocities. It is associated with detritus, logs, and stands of water willow, and with a substrate that consists of small cobbles, pebbles, gravel, and often a fine layer of silt. During low flow periods, the darters move away from the peripheral

zones and toward the main channel; edges of water willow beds, riffles, and pools; and mouths of tributaries.

Migration into spawning areas begins in approximately late November or early December, with fish moving from the main channels into tributaries and eventually reaching adjacent seepage areas where they will congregate and remain for the duration of spawning, until approximately late April. Breeding sites are intermittent seepage areas and ditches with little to no flow; shallow depths (12 inches (30 centimeters) or less); moderate leaf litter covering mixed cobble, gravel, sand, and clay; a deep layer of soft silt over clay; and emergent vegetation. Trispot darters predominantly feed on mayfly nymphs and midge larvae and pupae (USFWS, 2020).

Deeper inundation depths under the proposed action may allow for greater connectivity between spawning and non-spawning habitat of the trispot darter, however any difference in hydrology is unlikely to occur during a given year (1% chance). Due to the infrequent nature of a 100-year flood and the only minor changes to the hydrology under a 5-year flood changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Trispot Darter. In addition the proposed action is unlikely to adversely modify or destroy the newly designated trispot darter critical habitat in the Ballplay Creek Basin.

Alabama Leather Flower - The Alabama Leather Flower occupies silt and clay of alluvial, grass-sedge openings along a highway right-of-way, extending into the adjacent hardwood edge. A well-draining site that is located in full sunlight promotes the rapid growth of C. socialis. C. socialis was found beneath a fence that separated this land from an adjacent wooded area. (NatureServe, 2020).

The habitat of the Alabama Leather Flower does not occur within the floodplain of Ballplay Creek and as such the proposed changes will have no effect on the Alabama Leather Flower.

Green Pitcher Plant- The green pitcher plant is known to occur in Alabama, Georgia, and southwestern North Carolina. There are historical records of populations in Tennessee. Of the 36 known populations of the green pitcher plant most occur in Alabama. The primary stressor on the green pitcher plants is land development and use. The green pitcher plant is fire dependent and as fire repression techniques become widespread it and other fire dependent have become imperiled. The green pitcher plant occurs primarily in bogs and springheads. (Nature Serve, 2020)

The changes in hydrology are not expected to reach the bogs and stream heads along Ballplay Creek and as such changes in operations may affect but are not likely to adversely affect the habitat or reproduction of the green pitcher plant.

Canoe Creek

For the modeled 5-year and 100-year storm there is no change in elevation of the creek at the mouth. Under a 5-year storm the time of inundation is only 1 hour longer and during a 100-year storm the duration is the same.

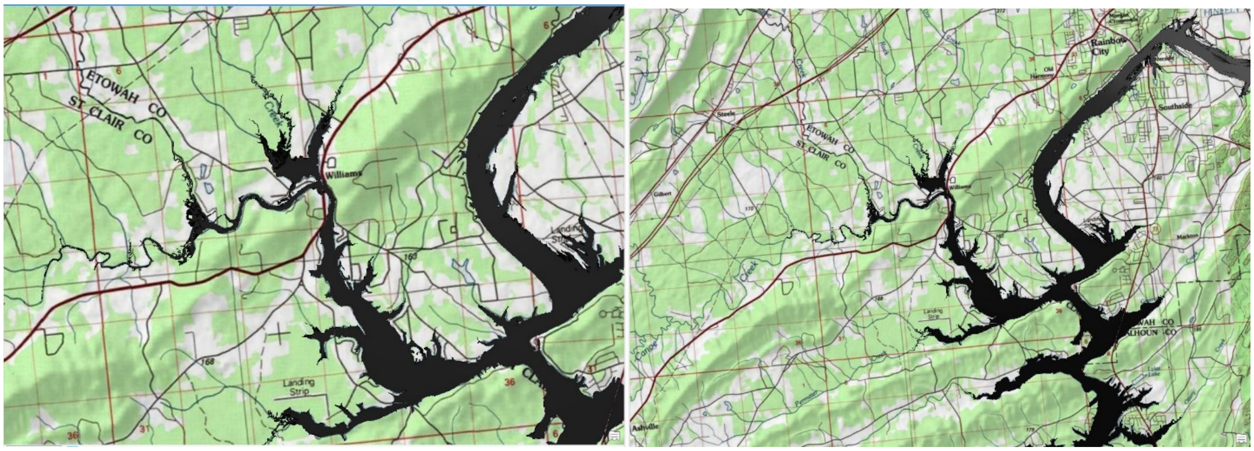


Figure 14: Canoe Creek under a 5- year flood vs Canoe Creek in a 100-year flood, changes in inundation are show in purple.

Effects determination for listed species that may occur within Canoe Creek are provided below.

The following species are found in the area: Gray Bat, Indiana Bat, Northern Long-Eared Bat, Coosa Moccasinshell, Finelined Pocketbook, Ovate Clubshell, Southern Clubshell, Southern Pigtoe, Triangular Kidneyshell, Alabama Leather Flower, Green Pitcher Plant, Trispot Darter.

Gray Bat- Given the foraging and habitat requirements, the bat may be present in the Canoe Creek area and would have some dependency on the water resources. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Canoe Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Gray bat within Canoe Creek.

Indiana Bat- The bat may be present in the Canoe creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood elevation, associated duration of elevation changes, and water quality conditions in the creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the *proposed action is negligible.*

Changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Indiana Bat.

Northern Long-Eared Bat- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the northern long-eared bat (pg 16 of the BA), the bat may be present in the Canoe Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in Canoe Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the northern long-eared bat within Canoe Creek.

Coosa Moccasinshell- As cited in the 2019 5-Year Review the total distribution of the Coosa moccasinshell is less than 8 stream miles of the Conasauga River and Holly Creek combined (Johnson 2012a). The frequency of collection of Coosa moccasinshell has declined in both tributaries where it is known to survive (Johnson and Evans 2000, P. Johnson, pers. comm. 2018). The species was found at 3 sites out of 31 localities surveyed on the Conasauga River, and at 2 of 7 localities searched on Holly Creek during a 2005 survey effort in and adjacent to the Cherokee and Chattahoochee National Forests (Johnson et al. 2005). Evidence of limited recruitment was observed in the Conasauga River in 2005, but recent recruitment has not been observed in Holly Creek (MRBMRC 2010)

The Coosa moccasinshell inhabits sand/gravel/cobble shoals with moderate to strong currents in small to medium sized streams. Coosa moccasinshells are usually burrowed completely in the stream bottom.

Due to the lack on noticeable changes in hydrology and water quality at Canoe Creek , and the sediment tolerant nature of the Coosa moccasinshell the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Coosa moccasinshell.

Critical habitat is designated for the Coosa moccasinshell within Canoe Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

Finelined Pocketbook- The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to *survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019. New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized (USFWS 2019).*

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).

Due to the lack on noticeable changes in hydrology and water quality at Canoe Creek , changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Finelined Pocketbook.

Critical habitat is designated for the Finelined pocketbook within Canoe Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

<u>Ovate Clubshell-</u> The Ovate Clubshell is found in riffles, runs, and shoals of small creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel occurred in the Tombigbee and Black Warrior, Alabama, Cahaba, and Coosa rivers and their tributaries within Mississippi and Alabama; however, the Coosa River and its tributaries are not listed as current locations for known surviving populations (USFWS 2019). Overall, the mussel is noted to be currently stable, with tributary populations being discovered in several Tombigbee River, Cahaba River, and Alabama River tributaries (USFWS 2019). Historically in the Coosa Basin the Ovate Clubshell was only found in the Etowah and Conasagua Rivers, not the Weiss Bypass/ Terrapin Creek area (Williams and Hughes, 1998).

The Ovate Clubshell has only been found recently in the Tombigbee River, Cahaba River, and the Alabama River and is not found in the Upper Coosa River. As such changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any suitable glochidia host fish or the Ovate Clubshell.

Critical habitat is designated for the Ovate Clubshell within Canoe Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

<u>Southern Clubshell</u>- The southern clubshell are found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019).

The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the lack on noticeable changes in hydrology and water quality at Canoe Creek identified from the USACE's analysis, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

Critical habitat is designated for the southern clubshell within Canoe Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

<u>Southern Pigtoe</u>- The Southern Pigtoe is found in riffles, runs, and shoals of medium creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel's range includes the Coosa River and tributaries in Alabama, Georgia, and Tennessee; currently, the mussel is found in tributaries which include: Big Canoe Creek, Terrapin Creek, Yellowleaf Creek, Hatchet Creek, and Cheaha Creek (USFWS 2019). Since its listing, the more recently tributary populations of the mussel were discovered in Terrapin, Yellowleaf, and Hatchet creeks (USFWS 2019). All populations of the mussel are noted to be small and localized, with the most robust population found in Shoal Creek (USFWS 2019).

Due to the lack on noticeable changes in hydrology and water quality at Canoe Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Pigtoe.

Critical habitat is designated for the southern pigtoe within Canoe Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

<u>Triangular Kidneyshell</u>- According to USFWS's 2019 5-year, review the triangular kidneyshell is stable and hasn't lost any populations since listing. A robust population

exists in the Cahaba River. The Sipsey Fork population has stabilized after loss to the 2000 drought.

Several darters have been identified as good glochidial host. It inhabits sand/gravel/cobble shoals with moderate to strong currents in small to medium sized streams/rivers within the Mobile River Basin. Suitable habitats and water quality, free of excessive sedimentation and other pollutants, are required for a stable population.

Since the triangular kidneyshell has no identified populations in the Coosa River, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the triangular kidneyshell.

Critical habitat is designated for the triangular kidneyshell within Canoe Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

The triangular kidneyshell has no identified populations in the Coosa River or its tributaries. Changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the interrupted rocksnail.

<u>Alabama Leather Flower</u>- There are only a few know occurrences of the Alabama Leather Flower in northeastern Alabama and northwestern Georgia. Sexual reproduction is limited in this species, so there are probably few genetic individuals. Populations mostly occur in areas subject to right-of-way maintenance activities, such as along highways or pipelines (NatureServe, 2020).

The Alabama Leather Flower occupies silt and clay of alluvial, grass-sedge openings along a highway right-of-way, extending into the adjacent hardwood edge. A well-draining site that is located in full sunlight promotes the rapid growth of C. socialis. C. socialis was found beneath a fence that separated this land from an adjacent wooded area. (NatureServe, 2020).

The habitat of the Alabama Leather Flower does not occur within the floodplain of Canoe Creek and as such the proposed changes may affect, but are not likely to adversely affect the Alabama Leather Flower in the Canoe Creek basin.

Due to the lack on noticeable changes in hydrology and water quality at Canoe Creek , is the USACE determination that the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the trispot darter.

<u>Green Pitcher Plant</u>- The green pitcher plant is known to occur in Alabama, Georgia, and southwestern North Carolina. There are historical records of populations in Tennessee. Of the 36 known populations of the Green Pitcher Plant most occur in Alabama. The primary stressor on the green pitcher plants is land development and

use. The green pitcher plant is fire dependent and as fire repression techniques become widespread it and other fire dependent have become imperiled. The green pitcher plant occurs primarily in bogs and springheads. (Nature Serve, 2020).

Due to the lack on noticeable changes in hydrology and water quality at Canoe Creek, changes in operations may affect but are not likely to adversely affect the green pitcher plant.

<u>Trispot Darter</u>- Currently, the trispot darter is known to occur in Little Canoe Creek, Ballplay Creek tributaries, Conasauga River and tributaries, and Coosawattee River and its tributaries. It is a migratory species that uses distinct breeding and nonbreeding habitats. From approximately April to October, the species occupies its nonbreeding habitat, which consists of small to medium margins of rivers and lower reaches of tributaries with slower velocities. It is associated with detritus, logs, and stands of water willow, and with a substrate that consists of small cobbles, pebbles, gravel, and often a fine layer of silt. During low flow periods, the darters move away from the peripheral zones and toward the main channel; edges of water willow beds, riffles, and pools; and mouths of tributaries.

Migration into spawning areas begins in approximately late November or early December, with fish moving from the main channels into tributaries and eventually reaching adjacent seepage areas where they will congregate and remain for the duration of spawning, until approximately late April. Breeding sites are intermittent seepage areas and ditches with little to no flow; shallow depths (12 inches (30 centimeters) or less); moderate leaf litter covering mixed cobble, gravel, sand, and clay; a deep layer of soft silt over clay; and emergent vegetation. Trispot darters predominantly feed on mayfly nymphs and midge larvae and pupae (USFWS, 2020).

Deeper inundation depths under the proposed action may allow for greater connectivity between spawning and non-spawning habitat of the trispot darter, however any difference in hydrology is unlikely to occur during a given year (1% chance). Due to the infrequent nature of a one hundred year flood and the only minor changes to the hydrology under a 5- year flood It is the USACE determination that the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Trispot Darter. In addition, the proposed action is unlikely to adversely modify or destroy the newly designated trispot darter critical habitat in the Canoe Creek Basin.

Critical habitat is also designated for the southern acornshell and upland combshell within Canoe Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat and effects analysis, respectively.

<u>Ohatchee Creek</u>

Ohatchee Creek is a tributary to the Coosa River in the Logan Martin Lake area, approximately 1.5 miles downstream of H. Neely Henry Dam. As discussed in Section 3.2.2 of the BA, the proposed changes at Logan Martin Dam and Lake include raising the project guide curve level during the winter months (December – March) by 2 ft and reducing the maximum surcharge elevation by 4.5 ft. In conjunction with the lake elevation changes, the proposed action consists of modifying the current Flood Regulation Schedule for the dam in order to operate with no appreciable increase in flood risk. Given the proposed action, the median pool level in Logan Martin Lake would range from a few inches up to about 2 ft higher than the no action alternative (NAA) from mid-October through the first week of May, the same level as the NAA from the first week of May through August, and up to 0.5 ft lower than the NAA in Sept through mid-October (Section 7.5.1.2 of the BA).

Given the modified flood operation changes of the proposed action, the results from the 5-yr flood annual exceedance event (more frequent event) model indicate a 0.2-ft increase in elevation for Ohatchee Creek under the proposed action compared to the NAA. The duration model indicates a 10-hr increase in the amount of time the tributary would be impacted by the 5-yr annual flood exceedance event under the proposed action compared to the NAA.

The 100-yr flood annual exceedance event (rare event) elevation model predicts up to a 1.08-ft decrease in elevation for Ohatchee Creek under the proposed action compared to the NAA. The duration model indicates a 77-hr increase in the amount of time the tributary would be impacted by the 100-yr annual flood exceedance event under the proposed action compared to the NAA.

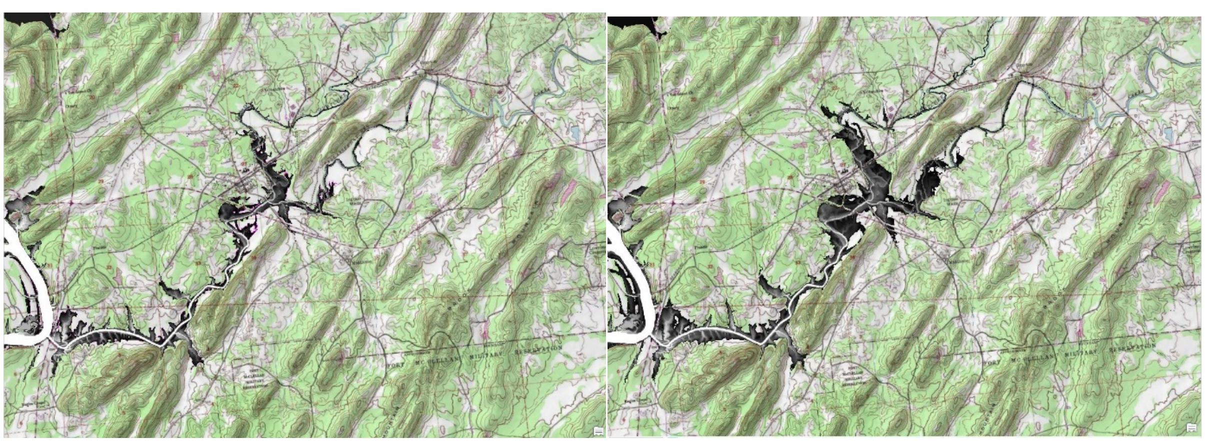


Figure 15: Ohatchee Creek under a 5- year flood vs Ohatchee Creek in a 100-year flood, changes in inundation are show in purple.

Effects determination on listed species that may occur within Ohatchee Creek are provide below.

Species found in the range of Ohatchee Creek include the Gray Bat (E), Indiana Bat

(E), Northern Long-Eared Bat (T), Painted Rocksnail (T), Southern Clubshell (E), Mohr's Barbara's Buttons (T), Tennessee Yellow-Eyed Grass (E), and White Fringeless Orchid (T).

<u>*Gray, Indiana, and Northern Long-Earred Bats*</u>*- Given the foraging and habitat requirements (pages 15 and 16 of the BA), the bat species may be present in the Ohatchee Creek area and would have some dependency on those water resources. However, these bat species are unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Ohatchee Creek that may result from the proposed action. While it is conceivable that these bat species could be affected by the proposed action, the likelihood that these bat species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect any of these protected bat species within Ohatchee Creek.*

<u>*Painted Rocksnail*</u>*- The painted rocksnail attaches to hard substrate (like cobble or gravel) in strong currents of riffles and shoals. The adult painted rocksnail moves very little; it is believed the females glue their eggs to stones in the same habitat (USFWS 2016a). At the time of listing, the snail was known to occur in Choccolocco Creek, Buxahatchee Creek and Ohatchee Creek; however, the status of the snail within Ohatchee Creek is not currently known, as it has not been documented in the creek since the early 1990's (USFWS 2016a). New populations have been documented within the lower Watson Creek, Buxahatchee Creek, and Coosa River below Logan Martin Dam (USFWS 2016a). Overall, the USFWS noted the species status as stable in the recent 5-yr review (USFWS 2016a).*

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Ohatchee Creek the proposed action is unlikely to adversely impact the painted rocksnail its habitat, reproduction, and/or feeding within the creek. Therefore, the proposed action may affect, but is not likely to adversely affect the painted rocksnail within Ohatchee Creek.

<u>*Southern Clubshell*</u>*- The southern clubshell found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).*

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the *stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).*

Due to the infrequent nature of a 100-year flood and the only minor changes to the hydrology under a 5- year flood It is the USACE determination that the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

<u>Mohr's Barbara's Buttons</u>- Sixty-seven occurrences of Mohr's Barbara's buttons are currently known, 56 in Alabama and 11 in Georgia; of these, two are considered historic. Most known populations occur along road margins and rights-of-way. Most decline is believed to be attributed to highway maintenance activities. The plant inhabits moist to wet prairie-like openings in woodlands (e.g. pine woods), along shale-bedded streams, and in meadows. Woodland clearings may be natural or artificial such as road rights-of-way. It is also found in Ketona dolomite glades of Bibb County, AL. It prefers full sunlight or partial shade. The soils are sandy clays, which are alkaline, high in organic matter and seasonally wet. Common associates include various grasses, sedges, and prairie species (NatureServe, 2020).

Due to the infrequent nature of a 100-year flood and the only minor changes to the hydrology under a 5-year flood It is the USACE determination that the changes in operations may affect but are not likely to adversely affect the habitat or reproduction of the Mohr's Barbra's Buttons.

<u>Tennessee Yellow-Eyed Grass</u>- The Tennessee yellow-eyed grass is a rare perennial monocot found in forested wetland, herbaceous wetland, riparian, and upland grassland/herbaceous habitat types. Seedlings of this plant need relatively well-lit moist soil to establish and grow to a mature plant (USFWS 2014c). At the time of listing, the Tennessee yellow-eyed grass was known from seven sites (five in Tennessee, one in Georgia, and one in Alabama). Since its listing, 16 additional populations of the species have been discovered, bringing the total extant populations per state to six in both Alabama and Georgia and seven in Tennessee (USFWS 2014c). Overall, the USFWS notes the status of the species as stable in their most recent 5-year review (USFWS 2014c).

The Tennessee yellow-eyed grass is noted to be a poor competitor, which quickly succumbs to natural ecological succession without periodic disturbances (USFWS 2014c).

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5-year flood, changes in operations may affect but are not likely to *adversely affect the Tennessee Yellow-Eyed Grass.*

<u>White Fringeless Orchid</u>- The white fringeless orchid is a perennial herb that can be found in wet, flat, boggy areas at the head of streams or seepage slopes. As of the early 1990's, 30 occurrences were noted; these occurrences were distributed among 20 counties in five southeastern states (which includes Alabama and Georgia). Currently, the species is noted as being extant at 58 occurrences distributed among 31 counties in the five states (USFWS 2016b).

The white fringeless orchid reproduces via cross-pollination, it has a self-compatible breeding system in which individual plants can produce seeds using its own pollen (USFWS 2016b). The orchid depends on a symbiotic relationship with mycorrhizal fungi for carbon; the relationship enhances seed germination and development (USFWS 2016b).

Changes attributed to the proposed action in this creek may affect but are not likely to adversely affect the White Fringeless Orchid.

<u>Choccolocco Creek</u>

Choccolocco Creek is a tributary to the Coosa River in the Logan Martin Lake area. As discussed in Section 3.2.2 of the BA, the proposed changes at Logan Martin Dam and Lake include raising the project guide curve level during the winter months (December – March) by 2 ft. and reducing the maximum surcharge elevation by 4.5 ft. In conjunction with the lake elevation changes, the proposed action consists of modifying the current Flood Regulation Schedule for the dam in order to operate with no appreciable increase in flood risk. Given the proposed action, the median pool level in Logan Martin Lake would range from a few inches up to about 2 ft higher than the NAA from mid-October through the first week of May, the same level as the NAA from the first week of May through August, and up to 0.5 ft lower than the NAA in Sept through mid-October.

Given the modified flood operation changes of the proposed action, the results from the 5-yr flood annual exceedance event (more frequent event) model indicate a 0.94-ft increase in elevation for Choccolocco Creek under the proposed action compared to the NAA. The duration model indicates an 8-hr increase in the amount of time the tributary would be impacted by the 5-yr annual flood exceedance event under the proposed action compared to the NAA.

The 100-yr flood annual exceedance event (rare event) elevation model predicts up to a 1.71-ft decrease in elevation for Choccolocco Creek under the proposed action compared to the NAA. The duration model indicates a 229-hr increase in the amount of time the tributary would be impacted by the 100-yr annual flood exceedance event under the proposed action compared to the NAA.

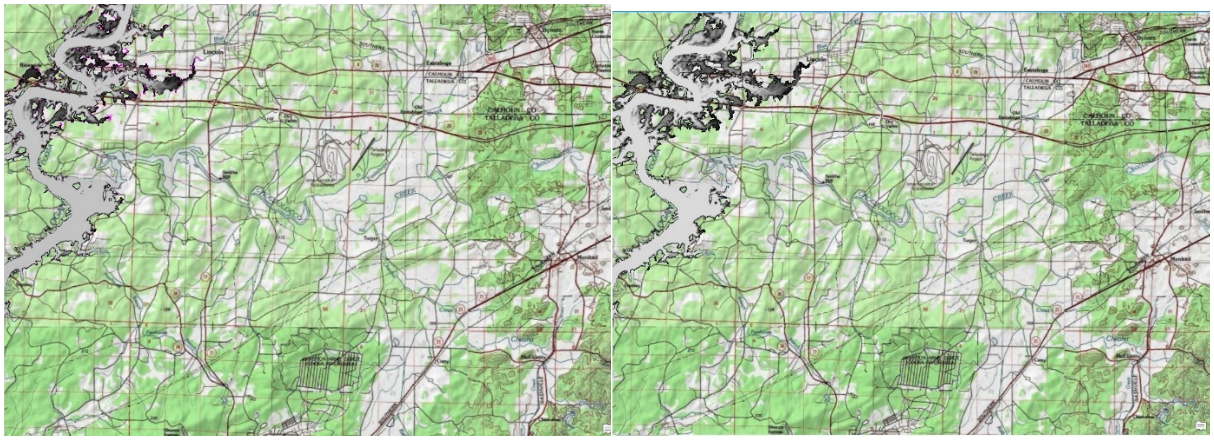


Figure 16:Choccolocco Creek under a 5- year flood vs Choccolocco Creek in a 100-year flood, changes in inundation are show in purple.

Effects determination on listed species that may occur within Choccolocco Creek are provided below.

Protected species in the range of Choccolocco Creek include the following: Blue Shiner (T), Cylindrical Lioplax (E – in lower creek), Painted Rocksnail (T), Tulotoma Snail (T – in lower creek), Finelined Pocketbook (T), Southern Clubshell (E), and Southern Pigtoe (E).

<u>Blue Shiner</u>- Habitat for the blue shiner includes cool, clear, small to medium-sized rivers over firm substrates (sand, gravel, or rubble) in pools, backwaters, and areas of moderate current. Previous studies revealed a diet of mostly terrestrial insects supplemented with occasional immature mayfly and caddisfly (NatureServe 2020). The blue shiner's historical range included the Cahaba and Coosa river systems and in the Mobile Bay drainage above the Fall Line, Alabama, Georgia, and Tennessee. The species is now restricted to the Conasauga River and tributaries in Tennessee and Georgia, Coosawattee River and tributaries in Georgia, and Weogufka and Choccolocco creeks and lower Little River, tributaries of Coosa River in Alabama (Boschung and Mayden 2004). Declines in populations have been caused by water pollution, siltation, and construction of reservoirs for hydropower, navigation, and flood control (USFWS 1992); however, during their 5-yr review of the species in 2014, the USFWS noted the population is stable overall (USFWS 2014a).

The species is noted to not range freely throughout a continuous system; its habitat includes specific habitat patches that may be separated from each other (USFWS 2014a). The blue shiner, which can be found throughout the water column, is a crevice spawner; the female releases eggs in the crevices of logs and rocks (USFWS 2014a). Little is known about the juvenile daily activities of the blue shiner.

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Choccolocco Creek (based on data for the Coosa River within the Logan Martin Lake *area, see Section 7.6.2 of the BA), the proposed action is unlikely to adversely impact the blue shiner, its habitat, reproduction, and/or feeding. Therefore, the proposed action may affect, but is not likely to adversely affect the blue shiner within Choccolocco Creek.*

*Cylindrical Lioplax (**noted in lower portion of creek only**)- The cylindrical lioplax is a gill breathing snail that lives in mud under large rocks in rapid shoal currents. Historically, the snail was only found in the Cahaba River; however, additional populations have been discovered in Yellowleaf Creek, Choccolocco Creek, and the lower Little Cahaba River since 2005 (USFWS 2016a). Overall, the USFWS noted the species status has improved in the recent 5-yr review (USFWS 2016a).*

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Choccolocco Creek (based on data for the Coosa River within the Logan Martin Lake area, see Section 7.6.2 of the BA), the proposed action is unlikely to adversely impact the cylindrical lioplax, its habitat, reproduction, and/or feeding. Therefore, the proposed action may affect, but is not likely to adversely affect the cylindrical lioplax within Choccolocco Creek.

Painted Rocksnail- The painted rocksnail attaches to hard substrate (like cobble or gravel) in strong currents of riffles and shoals. The adult painted rocksnails move very little; it is believed the females glue their eggs to stones in the same habitat (USFWS 2016a). At the time of listing, the snail was known to occur in Choccolocco Creek, Buxahatchee Creek and Ohatchee Creek; however, the status of the snail within Ohatchee Creek is not currently known, as it has not been documented in the creek since the early 1990's (USFWS 2016a). New populations have been documented within the lower Watson Creek, Buxahatchee Creek, and Coosa River below Logan Martin Dam (USFWS 2016a). Overall, the USFWS noted the species status as stable in the recent 5-yr review (USFWS 2016a).

With the painted rocksnail known to occur within Choccolocco Creek since its listing, it is likely the snail currently occurs in the creek. With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Choccolocco Creek (based on data for the Coosa River within the Logan Martin Lake area, see Section 7.6.2 of the BA), the proposed action is unlikely to adversely impact the painted rocksnail, its habitat, reproduction, and/or feeding. Therefore, the proposed action may affect, but is not likely to adversely affect the painted rocksnail within Choccolocco Creek.

*Tulotoma Snail (**noted in lower portion of creek only**)- The Tulotoma snail occurs in cool, well oxygenated, free-flowing streams and rivers; it can be generally found in shoals and riffles with moderate to strong currents. Although the snail is typically associated with shoals and riffles, it has been collected at depths of more than 5 meters*

(USFWS 2019b). The snail has a strong association with boulder, cobble, and bedrock bottoms; it can be found on the underside of large rocks or between cracks in the bedrock (USFWS 2019b). Historically, the range of the Tulotoma snail included the Coosa and Alabama River drainages; when listed the snail populations were known from the lower Coosa River below Jordan Dam, Ohatchee, Weogufka, Hatchet and Kelly creeks. Since its listing, the Tulotoma snail is believed to be extirpated from Ohatchee Creek; however, it has been discovered in Choccolocco Creek, Yellowleaf Creek, Weoka Creek, and the Alabama River (USFWS 2019b).

Healthy populations in Choccolocco Creek were found when the creek was surveyed in the fall of 2019 (USFWS 2019b).

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Choccolocco Creek, the proposed action proposed action may affect, but is not likely to adversely affect the Tulotoma snail within Choccolocco Creek.

<u>Finelined Pocketbook</u>- The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019. New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized (USFWS 2019).

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).

Based upon those changes identified in Choccolocco Creek attributed to the proposed action, operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish of the Finelined Pocketbook.

<u>Southern Clubshell</u>- This mussel is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019a).

The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019a). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019a).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the lack of noticeable changes in hydrology and water quality in Choloccolocco Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

Critical habitat is designated for the southern clubshell within Canoe Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

<u>Southern Pigtoe</u>- The Southern Pigtoe is found in riffles, runs, and shoals of medium creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel's range includes the Coosa River and tributaries in Alabama, Georgia, and Tennessee; currently, the mussel is found in tributaries which include: Big Canoe Creek, Terrapin Creek, Yellowleaf Creek, Hatchet Creek, and Cheaha Creek (USFWS 2019). Since its listing, the more recent tributary populations of the mussel were discovered in Terrapin, Yellowleaf, and Hatchet creeks (USFWS 2019). All populations of the mussel are noted to be small and localized, with the most robust population found in Shoal Creek (USFWS 2019).

Due to the lack of noticeable changes in hydrology and water quality at Choloccolocco Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Pigtoe.

<u>Cheaha Creek</u>

Cheaha Creek is a tributary of Choccolocco Creek separated from the mainstem Coosa by a 12 mile stretch of Choccolocco Creek. From the USGS National Map, 2020 the elevation of the confluence of Cheaha Creek and Choccolocco Creek is 486 feet while the normal elevation of Logan Martin Lake is 459 feet. Given the modified flood operation changes of the proposed action, the results from the 5-yr flood annual exceedance event (more frequent event) model indicate a 0.94-ft increase in elevation *for Choccolocco Creek under the proposed action compared to the NAA. The duration model indicates an 8-hr increase in the amount of time the tributary would be impacted by the 5-yr annual flood exceedance event under the proposed action compared to the NAA. The 100-yr flood annual exceedance event (rare event) elevation model predicts up to a 1.71-ft decrease in elevation for Choccolocco Creek under the proposed action compared to the NAA. The duration model indicates a 229-hr increase in the amount of time the tributary would be impacted by the 100-yr annual flood exceedance event under the proposed action compared to the NAA. These influences are unlike to affect the Cheaha Creek 12 miles upstream 12 feet in elevation from the highest modeled water elevation in Logan Martin at 474.21 feet.*

Protected species in the range of Cheaha Creek include Lacy Elimia (T), Coosa Moccasinshell (E), Finelined Pocketbook (T), Southern Clubshell (E), Southern Pigtoe (E), and Triangular Kidneyshell (E). The effects to these species are identified below.

Lacy Elimia- The Lacy Elimia is a gill breathing snail strongly associated with flowing hard bottomed rivers and streams. It is current believed to occupy only occupy Cheaha Creek after surveys of Weewoka and Emauhee did not produce any specimens (USFWS, 2016).

Changes in the flood operations at Logan Martin are not expected to affect either the hydrology or water quality in Cheaha Creek and as such the proposed action may affect but is not likely to adversely affect the Lacy emilia in Cheaha Creek.

Coosa Moccasinshell- As cited in the 2019 5-Year Review, the total distribution of the Coosa moccasinshell is less than 8 stream miles of the Conasauga River and Holly Creek combined (Johnson 2012a). The frequency of collection of Coosa moccasinshell has declined in both tributaries where it is known to survive (Johnson and Evans 2000, P. Johnson, pers. comm. 2018). The species was found at 3 sites out of 31 localities surveyed on the Conasauga River, and at 2 of 7 localities searched on Holly Creek during a 2005 survey effort in and adjacent to the Cherokee and Chattahoochee National Forests (Johnson et al. 2005). Evidence of limited recruitment was observed in the Conasauga River in 2005, but recent recruitment has not been observed in Holly Creek (MRBMRC 2010)

The Coosa Moccasinshell inhabits sand/ gravel/ cobble shoals with moderate to strong currents in small to medium sized streams. Coosa moccasinshells are usually burrowed completely in the stream bottom.

Changes in the flood operations at Logan Martin are not expected to affect either the hydrology or water quality in Cheaha Creek and as such the proposed action may affect but is not likely to adversely affect the Coosa moccasinshell in Cheaha Creek.

Finelined Pocketbook- The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River *and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019. New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized (USFWS 2019).*

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).

Changes in the flood operations at Logan Martin are not expected to affect either the hydrology or water quality in Cheaha Creek and as such the proposed action may affect but is not likely to adversely affect the finelined pocketbook in Cheaha Creek.

<u>Southern Clubshell</u>- The southern clubshell found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Changes in the flood operations at Logan Martin are not expected to affect either the hydrology or water quality in Cheaha Creek and as such the proposed action may affect but is not likely to adversely affect the southern clubshell in Cheaha Creek.

<u>Southern Pigtoe</u>- The Southern Pigtoe is found in riffles, runs, and shoals of medium creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the

mussel's range includes the Coosa River and tributaries in Alabama, Georgia, and Tennessee; currently, the mussel is found in tributaries which include: Big Canoe Creek, Terrapin Creek, Yellowleaf Creek, Hatchet Creek, and Cheaha Creek (USFWS 2019). Since its listing, the more recent tributary populations of the mussel were discovered in Terrapin, Yellowleaf, and Hatchet creeks (USFWS 2019). All populations of the mussel are noted to be small and localized, with the most robust population found in Shoal Creek (USFWS 2019).

Changes in the flood operations at Logan Martin are not expected to affect either the hydrology or water quality in Cheaha Creek and as such the proposed action may affect but is not likely to adversely affect the southern pigtoe in Cheaha Creek.

<u>Triangular Kidneyshell</u>- According to USFWS's 2019 5-year review, the triangular kidneyshell is stable and hasn't lost any populations since listing. A robust population exists in the Cahaba River. The Sipsey Fork population has stabilized after loss to the 2000 drought.

Several darters have been identified as good glochidia host. It inhabits sand/gravel /cobble shoals with moderate to strong currents in small to medium sized streams/rivers within the Mobile River Basin. Suitable habitats and water quality, free of excessive sedimentation and other pollutants, are required for a stable population.

Changes in the flood operations at Logan Martin are not expected to affect either the hydrology or water quality in Cheaha Creek and as such the proposed action may affect but is not likely to adversely affect the triangular kidneyshell in Cheaha Creek.

<u>Kelly Creek</u>

Section 7.7 of the BA details flood annual exceedance event elevation differences for the 5-yr and 100-yr models within Kelly Creek. The duration models indicate a 10-hr decrease in the amount of time the tributary would be impacted by the 5-yr annual flood exceedance event under the proposed action compared to the NAA and a 69-hr increase in the amount of time the tributary would be impacted by the 100-yr annual flood exceedance event under the proposed action compared to the NAA. The modeled 5-yr flood event elevation for Kelly Creek, about 2 miles below Logan Martin Dam, predicts a 1.85-ft (22.2 inches) decrease in the flood event elevation under the proposed action compared to the NAA; this was consistent upstream to the model extent (approximately 9.3 miles).

Kelly Creek is within the range of the Tulotoma Snail (T), Finelined Pocketbook (T), Coosa Moccasinshell (E), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), and Triangular Kidneyshell (E).

<u>Tullahoma Snail (T)</u>- The Tulotoma snail occurs in cool, well oxygenated, free-flowing streams and rivers; it can be generally found in shoals and riffles with moderate to

strong currents. Although the snail is typically associated with shoals and riffles, it has been collected at depths of more than 5 meters (USFWS 2019b). The snail has a strong association with boulder, cobble, and bedrock bottoms; it can be found on the underside of large rocks or between cracks in the bedrock (USFWS 2019b). Historically, the range of the Tulotoma snail included the Coosa and Alabama River drainages; when listed the snail populations were known from the lower Coosa River below Jordan Dam, Ohatchee, Weogufka, Hatchet and Kelly creeks. Since its listing, the Tulotoma snail is believed to be extirpated from Ohatchee Creek; however, it has been discovered in Choccolocco Creek, Yellowleaf Creek, Weoka Creek, and the Alabama River (USFWS 2019b).

The Tulotoma snail appears to occupy a 5.8 km reach in Kelly Creek, St. Clair and Shelby Counties, Alabama (USFWS 2011). During 1992-1994 surveys, average densities of 17.9 snails/meter² (m²) with a maximum density of 193 snails/m² were observed. In October 2019 20 Tulotoma snails were collected from Kelly Creek in St. Clair County (USFWS, 2016).

Due to the lack on noticeable changes in hydrology and water quality at Kelly Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Tulotoma *snail.*

<u>*Finelined Pocketbook*</u>*- The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019. New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized (USFWS 2019).*

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).

Based upon the USACE's analysis highlighting no to minimal changes in hydrology and water quality would occur at Kelly Creek, the species may be affected but would not likely be adversely affected.

<u>Coosa Moccasinshell</u>- As cited in the 2019 5-Year Review, the total distribution of the Coosa moccasinshell is less than 8 stream miles of the Conasauga River and Holly Creek combined (Johnson 2012a). The frequency of collection of Coosa moccasinshell has declined in both tributaries where it is known to survive (Johnson and Evans 2000, P. Johnson, pers. comm. 2018). The species was found at 3 sites out of 31 localities surveyed on the Conasauga River, and at 2 of 7 localities searched on Holly Creek during a 2005 survey effort in and adjacent to the Cherokee and Chattahoochee National Forests (Johnson et al. 2005). Evidence of limited recruitment was observed in the Conasauga River in 2005, but recent recruitment has not been observed in Holly Creek (MRBMRC 2010)

The Coosa moccasinshell inhabits sand/ gravel/cobble shoals with moderate to strong currents in small to medium sized streams. Coosa moccasinshells are usually burrowed completely in the stream bottom. Due to the lack on noticeable changes in hydrology and water quality at Kelly Creek, and the sediment tolerant nature of the Coosa moccasinshell, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Coosa moccasinshell.

Critical habitat is designated for the Coosa moccasinshell within Kelly Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

<u>Ovate Clubshell- </u>The Ovate Clubshell is found in riffles, runs, and shoals of small creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel occurred in the Tombigbee and Black Warrior, Alabama, Cahaba, and Coosa rivers and their tributaries within Mississippi and Alabama; however, the Coosa River and its tributaries are not listed as current locations for known surviving populations (USFWS 2019). Overall, the mussel is noted to be currently stable, with tributary populations being discovered in several Tombigbee River, Cahaba River, and Alabama River tributaries (USFWS 2019). Historically in the Coosa Basin the Ovate Clubshell was only found in the Etowah and Conasagua Rivers, not the Kelly Creek area (Williams and Hughes, 1998).

The Ovate Clubshell has only been found recently in the Tombigbee River, Cahaba River, and the Alabama River and is not found in the Upper Coosa River. Changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any suitable glochidia host fish of the Ovate Clubshell.

Critical habitat is designated for the Ovate Clubshell within Kelly Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

<u>Southern Clubshell</u>- The Southern Clubshell found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since

its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the lack on noticeable changes in hydrology and water quality at Kelly Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

<u>Southern Pigtoe</u>- The Southern Pigtoe is found in riffles, runs, and shoals of medium creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel's range includes the Coosa River and tributaries in Alabama, Georgia, and Tennessee; currently, the mussel is found in tributaries which include: Big Canoe Creek, Terrapin Creek, Yellowleaf Creek, Hatchet Creek, and Cheaha Creek (USFWS 2019). Since its listing, the more recent tributary populations of the mussel were discovered in Terrapin, Yellowleaf, and Hatchet creeks (USFWS 2019). All populations of the mussel are noted to be small and localized, with the most robust population found in Shoal Creek (USFWS 2019).

Due to the lack on noticeable changes in hydrology and water quality at Kelly Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Pigtoe.

<u>Triangular Kidneyshell</u>- According to USFWS's 2019 5-year review, the triangular kidneyshell is stable and hasn't lost any populations since listing. A robust population exists in the Cahaba River. The Sipsey Fork population has stabilized after loss to the 2000 drought.

Several darters have been identified as good glochidia host. It inhabits sand/gravel/cobble shoals with moderate to strong currents in small to medium sized streams/rivers within the Mobile River Basin. Suitable habitats and water quality, free of excessive sedimentation and other pollutants, are required for a stable population.

The triangular kidneyshell has no identified populations in the Coosa River or its tributaries, as such it is the USACE determination that the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the triangular kidneyshell.

Critical habitat is also designated for the southern acornshell and upland combshell within Kelly Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat and effects analysis, respectively.

<u>Yellowleaf Creek</u>

Section 7.7 of the BA details flood annual exceedance event elevation differences for the 5-yr and 100-yr models within Yellowleaf Creek. The duration models indicate a 10-hr decrease in the amount of time the tributary would be impacted by the 5-yr annual flood exceedance event under the proposed action compared to the NAA and a 2-hr increase in the amount of time the tributary would be impacted by the 100-yr annual flood exceedance event under the proposed action compared to the NAA.

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Yellowleaf Creek

The following protected species are within the range of Yellowleaf Creek: Cylindrical Lioplax (E), Rough Hornsnail (E), Tulotoma Snail (T), Coosa Moccasinshell (E), Finelined Pocketbook (T), Southern Clubshell (E), Southern Pigtoe (E), and Triangular Kidneyshell (E).

<u>Cylindrical Lioplax (**noted in lower portion of creek only**)</u>- The cylindrical lioplax lives in mud under large rocks in rapid shoal currents. Historically, the gill breathing snail was only found in the Cahaba River; however, additional populations have been discovered in Yellowleaf Creek, Choccolocco Creek, and the lower Little Cahaba River since 2005 (USFWS 2016a). Overall, the USFWS noted the species status has improved in the recent 5-yr review (USFWS 2016a).

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Yellowleaf Creek the proposed action is unlikely to adversely impact the cylindrical lioplax, its habitat, reproduction, and/or feeding. Therefore, the proposed action may affect, but is not likely to adversely affect the cylindrical liplax.

<u>Rough Hornsnail</u>- This snail is found in gravel, cobble, bedrock, and mud substrates in areas of moderate currents and depths from 3.3 ft to 9.8 ft (USFWS 2014b). Historic records of the snail include occurrences along the Coosa River and at the confluences of a few tributaries; current known records indicate the snail occurs in Yellowleaf Creek and lower Coosa River downstream of Wetumpka Shoals, with additional tributary populations discovered in Weogufka Creek, lower Hatchet Creek, and lower Walnut Creek in the fall of 2013 (USFWS 2014b).

Little life history is known about the rough hornsnail; however, as cited by the USFWS (2014b), the snail is very tolerant of silt deposition and has a lifespan of up to 4-5 years in the wild.

Given the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions anticipated to occur within Yellowleaf Creek from the proposed action, it is unlikely the snail (including its feeding, reproduction, and/or habitat) would be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the rough hornsnail.

<u>Tulotoma Snail (noted in lower portion of creek only)</u>- The Tulotoma snail occurs in cool, well oxygenated, free-flowing streams and rivers; it can be generally found in shoals and riffles with moderate to strong currents. Although the snail is typically associated with shoals and riffles, it has been collected at depths of more than 5 meters (USFWS 2019b). The snail has a strong association with boulder, cobble, and bedrock bottoms; it can be found on the underside of large rocks or between cracks in the bedrock (USFWS 2019b). Historically, the range of the Tulotoma snail included the Coosa and Alabama River drainages; when listed the snail populations were known from the lower Coosa River below Jordan Dam, Ohatchee, Weogufka, Hatchet and Kelly creeks. Since its listing, the Tulotoma snail is believed to be extirpated from Ohatchee Creek; however, it has been discovered in Choccolocco Creek, Yellowleaf Creek, Weoka Creek, and the Alabama River (USFWS 2019b).

Tulotoma snail was discovered in Yellowleaf Creek, Shelby County, Alabama, after its listing in 1991. The Tulotoma snail occupies a 0.4 km reach of Yellowleaf Creek and appear to be extremely localized (USFWS 2011). Approximately 300 individuals were surveyed and relocated during the 2018 Alabama Power's drawdown of Lay Reservoir located near the confluence with the Coosa River.

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Yellowleaf Creek the proposed action is unlikely to adversely impact the Tulotoma snail, its habitat, reproduction, and/or feeding. Therefore, the proposed action may affect, but is not likely to adversely affect the Tulotoma snail within Yellowleaf Creek.

<u>Coosa Moccasinshell</u>- As cited in the 2019 5-Year Review the total distribution of the Coosa moccasinshell is less than 8 stream miles of the Conasauga River and Holly Creek combined (Johnson 2012a). The frequency of collection of Coosa moccasinshell has declined in both tributaries where it is known to survive (Johnson and Evans 2000, P. Johnson, pers. comm. 2018). The species was found at 3 sites out of 31 localities surveyed on the Conasauga River, and at 2 of 7 localities searched on Holly Creek during a 2005 survey effort in and adjacent to the Cherokee and Chattahoochee National Forests (Johnson et al. 2005). Evidence of limited recruitment was observed in

the Conasauga River in 2005, but recent recruitment has not been observed in Holly Creek (MRBMRC 2010).

The Coosa Moccasinshell inhabits sand/ gravel/cobble shoals with moderate to strong currents in small to medium sized streams. Coosa moccasinshells are usually burrowed completely in the stream bottom.

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Yellowleaf Creek, the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Coosa Moccasinshell.

Critical habitat is designated for the Coosa moccasinshell within Yellowleaf Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

<u>*Finelined Pocketbook-*</u> *The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019. New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized (USFWS 2019).*

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Yellowleaf Creek changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Finelined Pocketbook.

<u>Southern Clubshell</u>- The Southern Clubshell found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Yellowleaf Creek,changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

<u>Southern Pigtoe</u>- The Southern Pigtoe is found in riffles, runs, and shoals of medium creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel's range includes the Coosa River and tributaries in Alabama, Georgia, and Tennessee; currently, the mussel is found in tributaries which include: Big Canoe Creek, Terrapin Creek, Yellowleaf Creek, Hatchet Creek, and Cheaha Creek (USFWS 2019). Since its listing, the more recent tributary populations of the mussel were discovered in Terrapin, Yellowleaf, and Hatchet creeks (USFWS 2019). All populations of the mussel are noted to be small and localized, with the most robust population found in Shoal Creek (USFWS 2019).

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Yellowleaf Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Pigtoe.

Critical habitat is designated for the Southern Pigtoe within Yellowleaf Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

Triangular Kidneyshell- According to USFWS's 2019 5-year review the triangular kidneyshell is stable and hasn't lost any populations since listing. A robust population exists in the Cahaba River. The Sipsey Fork population has stabilized after loss to the 2000 drought.

Several darters have been identified as good glochidial host. It inhabits sand/gravel/ cobble shoals with moderate to strong currents in small to medium sized streams/rivers within the Mobile River Basin. Suitable habitats and water quality, free of excessive sedimentation and other pollutants, are required for a stable population.

The triangular kidneyshell has no identified populations in the Coosa River Basin and changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the triangular kidney shell.

Hatchet Creek

Middle Hatchet Creek is within the range of the Indiana Bat (E), Tulotoma Snail (T), Coosa Moccasinshell (E), Finelined Pocketbook (T), Georgia Pigtoe (E), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Triangular Kidneyshell (E), Kral's Water Plantain (T), and White Fringeless Orchid (T).

Section 7.7 of the BA details flood annual exceedance event elevation differences for the 5-yr and 100-yr models within Hatchet Creek. The duration models indicate a 3-hr increase in the amount of time the tributary would be impacted by the 5-yr annual flood exceedance event under the proposed action compared to the NAA and a 30-hr increase in the amount of time the tributary would be impacted by the 100-yr annual flood exceedance event under the proposed action compared to the NAA.

Lower Hatchet Creek has the following protected species with its range: Indiana Bat (E), Red-cockaded Woodpecker (E), Rough Hornsnail (E), Tulotoma Snail (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Kral's Water Plantain (T), and White Fringeless Orchid (T).

Indiana Bat- Previously life-cycle requirements have been provided in this addended BA and this bat may be in the Hatchet Creek area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood elevation, associated duration of elevation changes, and water quality conditions in Hatchet Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Indiana Bat.

Red-cockaded Woodpecker- In Alabama, habitat in the Conecuh, Oakmulgee, and Talladega National Forests supports populations of the red-cockaded woodpecker (pg 16 of the BA). Given the foraging and habitat requirements of the red-cockaded woodpecker (pg 16 of the BA), the bird may be present in the Hatchet Creek area and, as such, would have some dependency on the water resources in that area. However, *the bird is unlikely to be measurably affected by the very slight changes in flow, flood event elevation differences, associated duration of elevation changes, and water quality conditions in Hatchet Creek that may result from the proposed action. While it is conceivable that the red-cockaded woodpecker could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the red-cockaded woodpecker within Hatchet Creek.*

<u>Rough Hornsnail</u>- This snail is found in gravel, cobble, bedrock, and mud substrates in areas of moderate currents and depths from 3.3 ft to 9.8 ft (USFWS 2014b). Historic records of the snail include occurrences along the Coosa River and at the confluences of a few tributaries; current known records indicate the snail occurs in Yellowleaf Creek and lower Coosa River downstream of Wetumpka Shoals, with additional tributary populations discovered in Weogufka Creek, lower Hatchet Creek, and lower Walnut Creek in the fall of 2013 (USFWS 2014b).

Little life history is known about the rough hornsnail; however, as cited by the USFWS (2014b), the snail is very tolerant of silt deposition and has a lifespan of up to 4-5 years in the wild.

Given the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions anticipated to occur within Hatchet Creek from the proposed action, it is unlikely the snail (including its feeding, reproduction, and/or habitat) would be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the rough hornsnail within Hatchet Creek.

<u>Tulotoma Snail</u>- The Tulotoma snail occurs in cool, well oxygenated, free-flowing streams and rivers; it can be generally found in shoals and riffles with moderate to strong currents. Although the snail is typically associated with shoals and riffles, it has been collected at depths of more than 5 meters (USFWS 2019b). The snail has a strong association with boulder, cobble, and bedrock bottoms; it can be found on the underside of large rocks or between cracks in the bedrock (USFWS 2019b). Historically, the range of the Tulotoma snail included the Coosa and Alabama River drainages; when listed the snail populations were known from the lower Coosa River below Jordan Dam, Ohatchee, Weogufka, Hatchet and Kelly creeks. Since its listing, the Tulotoma snail is believed to be extirpated from Ohatchee Creek; however, it has been discovered in Choccolocco Creek, Yellowleaf Creek, Weoka Creek, and the Alabama River (USFWS 2019b).

From surveys in the early 1990's, average densities for the Tulotoma in Hatchet Creek, Coosa County, Alabama were estimated at 10.5 snails/m² with a maximum density of 262 snails/m². They occupy a 14 km reach of Hatchet Creek, and habitat conditions within this 8 creek appear to have remained stable since listing. Most recently, M. Buntin surveyed Hatchet Creek in November 2019 and observed a healthy population (USFWS 2019b).

With the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Hatchet Creek the proposed action is unlikely to adversely impact the Tulotoma snail, its habitat, reproduction, and/or feeding. Therefore, the proposed action may affect, but is not likely to adversely affect the Tulotoma snail within Hatchet Creek.

<u>Finelined Pocketbook</u>- The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019. New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized (USFWS 2019).

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).

Due to the lack on noticeable changes in hydrology and water quality at Hatchet Creek , changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Finelined Pocketbook.

<u>Ovate Clubshell</u>- The Ovate Clubshell is found in riffles, runs, and shoals of small creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel occurred in the Tombigbee and Black Warrior, Alabama, Cahaba, and Coosa rivers and their tributaries within Mississippi and Alabama; however, the Coosa River and its tributaries are not listed as current locations for known surviving populations (USFWS 2019). Overall, the mussel is noted to be currently stable, with tributary populations being discovered in several Tombigbee River, Cahaba River, and Alabama River tributaries (USFWS 2019). Historically in the Coosa Basin the Ovate Clubshell was only found in the Etowah and Conasagua Rivers, not the Weiss Bypass/ Terrapin Creek area (Williams and Hughes, 1998).

The Ovate Clubshell has only been found recently in the Tombigbee River, Cahaba River, and the Alabama River and is not found in the Coosa River and its tributaries. Changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any suitable glochidia host fish or the Ovate Clubshell.

Critical habitat is designated for the Ovate Clubshell within Hatchet Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

Southern Clubshell- The southern clubshell found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the lack on noticeable changes in hydrology and water quality at Hatchet Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

Critical habitat is designated for the Southern Clubshell within Hatchet Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

Southern Pigtoe- The Southern Pigtoe is found in riffles, runs, and shoals of medium creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel's range includes the Coosa River and tributaries in Alabama, Georgia, and Tennessee; currently, the mussel is found in tributaries which include: Big Canoe Creek, Terrapin Creek, Yellowleaf Creek, Hatchet Creek, and Cheaha Creek (USFWS 2019). Since its listing, the more recent tributary populations of the mussel were discovered in Terrapin, Yellowleaf, and Hatchet creeks (USFWS 2019). All populations of the mussel are noted to be small and localized, with the most robust population found in Shoal Creek (USFWS 2019).

Due to the lack on noticeable changes in hydrology and water quality at Hatchet Creek, *changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Pigtoe.*

Critical habitat is designated for the southern pigtoe within Hatchet Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

<u>Coosa Moccasinshell</u>- As cited in the 2019 5-Year Review The total distribution of the Coosa moccasinshell is less than 8 stream miles of the Conasauga River and Holly Creek combined (Johnson 2012a). The frequency of collection of Coosa moccasinshell has declined in both tributaries where it is known to survive (Johnson and Evans 2000, P. Johnson, pers. comm. 2018). The species was found at 3 sites out of 31 localities surveyed on the Conasauga River, and at 2 of 7 localities searched on Holly Creek during a 2005 survey effort in and adjacent to the Cherokee and Chattahoochee National Forests (Johnson et al. 2005). Evidence of limited recruitment was observed in the Conasauga River in 2005, but recent recruitment has not been observed in Holly Creek (MRBMRC 20 I 0

The Coosa Moccasinshell inhabits sand/ gravel/ cobble shoals with moderate to strong currents in small to medium sized streams. Coosa moccasinshells are usually burrowed completely in the stream bottom.

Due to the infrequent nature of a one hundred year flood and the only minor changes to the hydrology under a 5- year flood, and the sediment tollerent nature if the Coosa Moccasinshell it is the USACE determination that the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Coosa Moccasinshell.

Critical habitat is designated for the Coosa moccasinshell within Hatchet Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

<u>Georgia Pigtoe</u>- The Georgia Pigtoe has experienced a tremendous reduction in number of locations and population size recently to the point where it was officially declared extinct by the IUCN in 1994. Recently, a single subpopulation with only a few live individuals was found in a very localized portion of the upper Conasauga River in Georgia. Otherwise, a collection of recently dead shells (1997-1998) and a recently discovered population in the Upper Conasauga River are all that remain of the global population of this species which has experienced an extensive reduction in former range. It has recently been listed by USFWS as an endangered species and Critical Habitat designated. Up until recently, it had formerly been thought extinct.

This species inhabits stretches of a medium sized river with good current and a sand/gravel substrate A substrate composed of coarse sand and gravel in stretches of rivers with good current provides the most suitable habitat (Parmalee and Bogan, 1998).

It is found in shallow runs and riffles with strong to moderate current and coarse sand-gravel-cobble bottom (USFWS, 2010).

The Georgia Pigtoe has only been found recently in the Upper Conasauga River and is not found in the Terrapin Creek Basin. As such in USACE determination that the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Georgia Pigtoe.

Critical habitat is designated for the Georgia pigtoe within Hatchet Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

Triangular Kidneyshell- According to USFWS's 2019 5-year review the triangular kidneyshell is stable and hasn't lost any populations since listing. A robust population exists in the Cahaba River. The Sipsey Fork population has stabilized after loss to the 2000 drought.

Several darters have been identified as good glochidial host. It inhabits sand/gravel/ cobble shoals with moderate to strong currents in small to medium sized streams/rivers within the Mobile River Basin. Suitable habitats and water quality, free of excessive sedimentation and other pollutants, are required for a stable population.

The triangular kidneyshell has no identified populations in Hatchet Creek or the Coosa River; therefore, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the triangular kidney shell.

Critical habitat is designated for the triangular kidneyshell within Hatchet Creek; Sections 5.7 and 7.8 of the BA provide details of the critical habitat unit and effects analysis, respectively.

Kral's Water Plantain- Kral's Water Plantain is known to occur within the Little River basin, the Sispsy Fork of the Black Warrior River and along Hatchet Creek. Biologists report that some populations on Little River are extant as of 2006, indicating that at least some aggregations of the Little River population have been viable more than 15 years. The plant occurs in shallow riffles, jointed, flat sandstone slabs, and substrates that include cobbles, small boulders, and sand.

No studies have been conducted to assess the species' threshold in relation to tolerance of sedimentation. Kral's Water Plantain is a submersed aquatic, perennial herb. It can float above or below the water. Kral's Water Plantain typically occurs on frequently exposed shoals or rooted among loose boulders in quiet pools up to 1 m (3.2 ft) in depth. Plants are locally distributed where suitable habitat exists, and grow in pure stands or in association with various submergents (below-water plants) and emergents (above-water plants). The immediate banks are often dominated by thickets of shrubs and adjacent sphagnous seeps commonly containing sedges. Streams with Kral's Water Plantain occurrences are typically narrow and bounded by steep slopes.

Changes in operations may affect but are not likely to adversely affect the habitat or reproduction of Kral's Water Plantain.

White Fringeless Orchid- The white fringeless orchid is a perennial herb that can be found in wet, flat, boggy areas at the head of streams or seepage slopes. As of the early 1990's, 30 occurrences were noted; these occurrences were distributed among 20 counties in five southeastern states (which includes Alabama and Georgia). Currently, the species is noted as being extant at 58 occurrences distributed among 31 counties in the five states (USFWS 2016b).

The white fringeless orchid reproduces via cross-pollination, it has a self-compatible breeding system in which individual plants can produce seeds using its own pollen (USFWS 2016b). The orchid depends on a symbiotic relationship with mycorrhizal fungi for carbon; the relationship enhances seed germination and development (USFWS 2016b).

Due to the infrequent nature of a 100-year flood and the only minor changes to the hydrology under a 5-year flood, changes in operations may affect but are not likely to adversely affect the habitat or reproduction of the White Fringeless Orchid.

Walnut Creek

Walnut Creek is a tributary to the Coosa River in the Mitchell Lake area. No changes to operations are proposed at Lay Dam or Mitchell Lake Dam which would impact Mitchell Lake pool elevations; however, as run of river projects, the proposed action would have residual negligible effect on lake levels compared to the NAA. Impacts to the tributaries within the Mitchell Lake area would be expected to be negligible under the proposed action compared to the NAA.

Given the modified flood operation changes of the proposed action, the results from the 5-yr flood annual exceedance event (more frequent event) model indicate a 0.66-ft increase in elevation for Walnut Creek under the proposed action compared to the NAA. The duration model indicates a 3-hr increase in the amount of time the tributary would be impacted by the 5-yr annual flood exceedance event under the proposed action compared to the NAA.

The 100-yr flood annual exceedance event (rare event) elevation model predicts up to a 0.15-ft increase in elevation for Walnut Creek under the proposed action compared to the NAA. The duration model indicates a 24-hr increase in the amount of time the tributary would be impacted by the 100-yr annual flood exceedance event under the proposed action compared to the NAA.

Figure 17: Walnut Creek under a 5- year flood vs Walnut Creek in a 100-year flood, changes in inundation are show in purple.

Protected species in the range of Walnut Creek include the following: Indiana Bat (E), Red-cockaded Woodpecker (E), Wood Stork (T), Rough Hornsnail (E), Southern Clubshell (E), and Alabama Canebrake Pitcher Plant (E).

Effects determination on listed species that may occur within Walnut Creek are provided below.

Indiana Bat- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the Indiana bat (pg 16 of the BA), the bat may be present in the Walnut Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation differences, associated duration of elevation changes, and water quality conditions in the Walnut Creek that may result from the proposed action. While it is conceivable that the Indiana bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Indiana bat within Walnut Creek.

Red-cockaded Woodpecker- In Alabama, habitat in the Conecuh, Oakmulgee, and Talladega National Forests supports populations of the red-cockaded woodpecker (pg 16 of the BA). Given the foraging and habitat requirements of the red-cockaded woodpecker (pg 16 of the BA), the bird may be present in the Walnut Creek area and, as such, would have some dependency on the water resources in that area. However, the bird is unlikely to be measurably affected by the very slight changes in flow, flood event elevation differences, associated duration of elevation changes, and water quality conditions in the Walnut Creek that may result from the proposed action. While it is conceivable that the red-cockaded woodpecker could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the red-cockaded woodpecker within Walnut Creek.

Wood Stork- Given the foraging, habitat, and breeding requirements of the wood stork (pg 16 of the BA), the bird may be present in the Walnut Creek area and would have some dependency on the water resources in that area. However, the bird is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, *associated duration of elevation changes, and water quality conditions in the Walnut Creek that may result from the proposed action. While it is conceivable that the wood stork could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the wood stork within Walnut Creek.*

Rough Hornsnail- This snail is found in gravel, cobble, bedrock, and mud substrates in areas of moderate currents and depths from 3.3 ft to 9.8 ft (USFWS 2014b). Historic records of the snail include occurrences along the Coosa River and at the confluences of a few tributaries; current known records indicate the snail occurs in Yellowleaf Creek and lower Coosa River downstream of Wetumpka Shoals, with additional tributary populations discovered in Weogufka Creek, lower Hatchet Creek, and lower Walnut Creek in the fall of 2013 (USFWS 2014b).

Little life history is known about the rough hornsnail; however, as cited by the USFWS (2014b), the snail is very tolerant of silt deposition and has a lifespan of up to 4-5 years in the wild.

Given the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions anticipated to occur within Walnut Creek from the proposed action, it is unlikely the snail (including its feeding, reproduction, and/or habitat) would be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the rough hornsnail within Walnut Creek.

Southern Clubshell- The southern clubshell is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019a). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019a). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019a).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the lack on noticeable changes in hydrology and water quality in Walnut Creek, changes in operations may affect but are not likely to adversely affect the habitat, *reproduction, or feeding of any glochidia host fish or the Southern Clubshell.*

Alabama Canebrake Pitcher Plant- The plant occurs in sandhill seeps, swamps, and bogs along the fall-line of central Alabama; growing in acidic, highly saturated, deep peaty sands or clays. The plant also occurs in bottomlands or as streamside vegetation (USFWS 2012). When listed as endangered on April 10, 1989, the Alabama canebrake pitcher-plant (54 FR 10150) was known to exist at 12 sites within three counties in central Alabama (USFWS 2012). Since its listing, half of the populations are no longer considered extant and five populations have been discovered; currently the populations are distributed in Autauga and Chilton Counties (USFWS 2012).

The Alabama canebrake pitcher-plant is a non-woody carnivorous plant that grows from a horizontal rhizome. While the plant produces flowers for pollination, the plant can also reproduce asexually via the offshoots formed by the rhizome (Boyd 2015).

Riparian areas and adjacent lands along the rivers and primary tributaries within the ROI are influenced by flows, lake levels, and periodic flooding, all of which could affect the protected flowering plant species that may be present. The proposed action will not result in the permanent conversion of one habitat type into another but will result in changes to the duration of inundation along the margins of lakes and slight seasonal differences in flow of the downstream river segments. Given the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions anticipated to occur within Walnut Creek from the proposed action, it is unlikely the Alabama canebrake pitcher-plant would be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the Alabama canebrake pitcher-plant that may occur along adjacent lands of Walnut Creek.

Cargle Creek

Cargle Creek is a tributary to the Coosa River in the Mitchell Lake area. No changes to operations are proposed at Lay Dam or Mitchell Lake Dam which would impact Mitchell Lake pool elevations; however, as run of river projects, the proposed action would have residual effect on lake levels compared to the NAA.

Given the modified flood operation changes of the proposed action, the results from the 5-yr flood annual exceedance event (more frequent event) model for Cargle Creek indicate a 0.65-ft increase in elevation under the proposed action compared to the NAA. The duration model indicates a 5-hr increase in the amount of time the tributary would be impacted by the 5-yr annual flood exceedance event under the proposed action compared to the NAA.

The 100-yr flood annual exceedance event (rare event) elevation model predicts up to a 0.13-ft increase in elevation for Cargle Creek under the proposed action compared to the NAA. The duration model indicates a 51-hr increase in the amount of time the tributary would be impacted by the 100-yr annual flood exceedance event under the proposed action compared to the NAA.

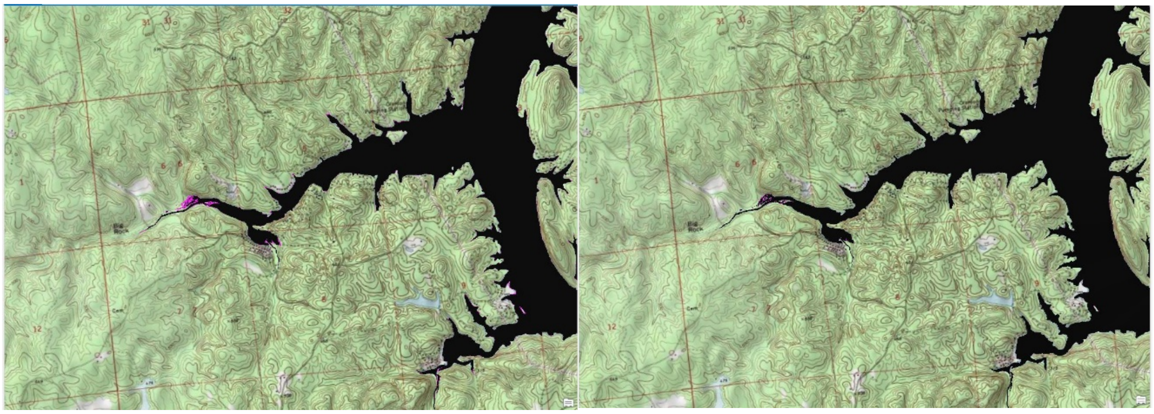


Figure 18: Cargle Creek under a 5- year flood vs Cargle Creek in a 100-year flood, changes in inundation are show in purple.

These species are found within the creek's range: Indiana Bat (E), Red-cockaded Woodpecker (E), Wood Stork (T), Rough Hornsnail (E), Southern Clubshell (E), and Alabama Canebrake Pitcher Plant (E).

Effects determination on listed species that may occur within Cargle Creek

Indiana Bat- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the Indiana bat (pg 16 of the BA), the bat may be present in the Cargle Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Cargle Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Indiana bat within Cargle Creek.

Red-cockaded Woodpecker- In Alabama, habitat in the Conecuh, Oakmulgee, and Talladega National Forests supports populations of the red-cockaded woodpecker (pg 16 of the BA). Given the foraging and habitat requirements of the red-cockaded woodpecker (pg 16 of the BA), the bird may be present in the Cargle Creek area and, as such, would have some dependency on the water resources in that area. However, the bird is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Cargle Creek that may result from the proposed action. While it is conceivable that the bird could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the red-cockaded woodpecker within Cargle Creek.

Wood Stork- Given the foraging, habitat, and breeding requirements of the wood stork (pg 16 of the BA), the bird may be present in the Cargle Creek area and would have some dependency on the water resources in that area. However, the bird is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Cargle Creek that may result from the proposed action. While it is conceivable that the bird could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the wood stork within Cargle Creek.

Rough Hornsnail- This snail is found in gravel, cobble, bedrock, and mud substrates in areas of moderate currents and depths from 3.3 ft to 9.8 ft (USFWS 2014b). Historic records of the snail include occurrences along the Coosa River and at the confluences of a few tributaries; current known records indicate the snail occurs in Yellowleaf Creek and Lower Coosa downstream of Wetumpka Shoals, with additional tributary populations discovered in Weogufka Creek, lower Hatchet Creek, and lower Walnut Creek in the fall of 2013 (USFWS 2014b).

Little life history is known about the rough hornsnail; however, as cited by the USFWS (2014b), the snail is very tolerant of silt deposition and has a lifespan of up to 4-5 years in the wild.

Given the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions anticipated to occur within Cargle Creek from the proposed action, it is unlikely the snail would be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the rough hornsnail.

Southern Clubshell- This mussel is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019a). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019a). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019a).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the lack on noticeable changes in hydrology and water quality at Cargle Creek, *changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish of the Southern Clubshell.*

<u>Alabama Canebrake Pitcher Plant</u>- Listed as endangered on April 10, 1989, the Alabama canebrake pitcher-plant (54 FR 10150) is endemic to a three-county area in central Alabama. As of date of Recovery Plan for the species, the plant is known to exist at only 12 sites in central Alabama, 4 of which are in Autauga County, 6 in Chilton county, and 2 in Elmore County (1992 Recovery Plan). Colony sites, all noted on privately-owned lands, are wet much of the year (1992). The plant occurs in sandhill seeps, swamps, and bogs along the fall-line of central Alabama; growing in acidic, highly saturated, deep peaty sands or clays. It grows in full sun or light shade.

The Alabama canebrake pitcher-plant is a non-woody carnivorous plant that grows from a horizontal rhizome. While the plant produces flowers for pollination, the plant can also reproduce asexually via the offshoots formed by the rhizome (Boyd 2015).

Riparian areas and adjacent lands along the rivers and primary tributaries within the ROI are influenced by flows, lake levels, and periodic flooding, all of which could affect the protected flowering plant species that may be present. The proposed action will not result in the permanent conversion of one habitat type into another but will result in changes to the duration of inundation along the margins of lakes and slight seasonal differences in flow of the downstream river segments. Given the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions anticipated to occur within Cargle Creek from the proposed action, it is unlikely the Alabama canebrake pitcher-plant would be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the Alabama canebrake pitcher-plant that may occur along adjacent lands of Cargle Creek.

Due to the lack on noticeable changes in hydrology and water quality at Cargle Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of the Alabama Canebrake Pitcher Plant.

<u>Weogufka Creek</u>

Weogufka Creek is a tributary to the Coosa River in the Mitchell Lake area. No changes to operations are proposed at Lay Dam or Mitchell Lake Dam which would impact Mitchell Lake pool elevations; however, as run of river projects, the proposed action would have residual effect on lake levels compared to the NAA.

Given the modified flood operation changes of the proposed action, the results from the 5-yr flood annual exceedance event (more frequent event) model indicate a 0.65-ft increase in elevation for Weogufka Creek under the proposed action compared to the NAA. The duration model indicates a 3-hr increase in the amount of time the tributary would be impacted by the 5-yr annual flood exceedance event under the proposed action compared to the NAA.

The 100-yr flood annual exceedance event (rare event) elevation model predicts up to a 0.14-ft increase in elevation for Weogufka Creek under the proposed action compared to the NAA. The duration model indicates a 30-hr increase in the amount of time the tributary would be impacted by the 100-yr annual flood exceedance event under the proposed action compared to the NAA.

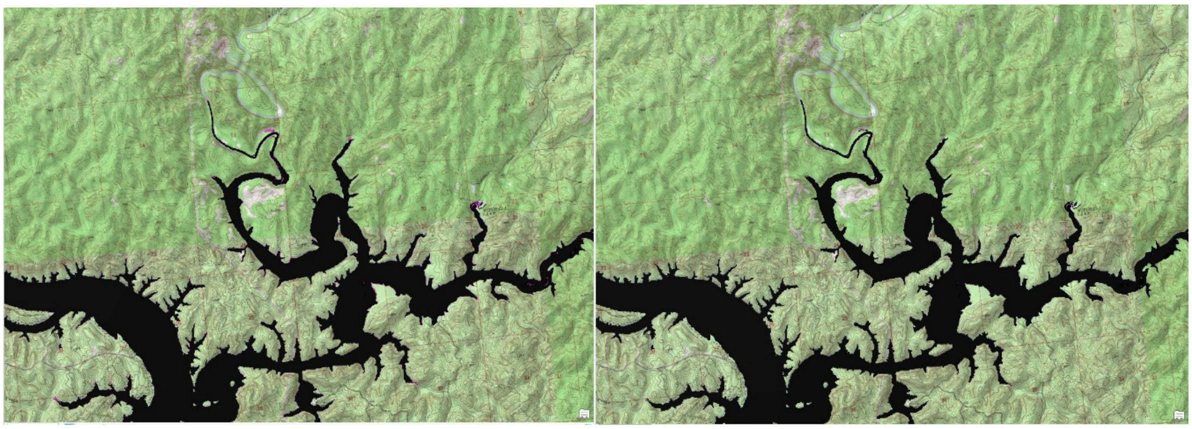


Figure 19: Weogulfka Creek under a 5- year flood vs Weogulfka Creek in a 100-year flood, changes in inundation are show in purple.

Effects determination on the following listed species that may occur within Weogufka Creek are provide below: Indiana Bat (E), Rough Hornsnail (E), Tulotoma Snail (T), Finelined Pocketbook (T), Ovate Clubshell (E), Southern Clubshell (E), Southern Pigtoe (E), Blue Shiner (T), and White Fringeless Orchid (T).

<u>Indiana Bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the Indiana bat (pg 16 of the BA), the bat may be present in the Weogufka Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Weogufka Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Indiana bat within Weogufka Creek.

<u>Rough Hornsnail</u>- This snail is found in gravel, cobble, bedrock, and mud substrates in areas of moderate currents and depths from 3.3 ft to 9.8 ft (USFWS 2014b). Historic records of the snail include occurrences along the Coosa River and at the confluences of a few tributaries; current known records indicate the snail occurs in Yellowleaf Creek and Lower Coosa downstream of Wetumpka Shoals, with additional tributary populations discovered in Weogufka Creek, lower Hatchet Creek, and lower Walnut Creek in the fall of 2013 (USFWS 2014b).

Little life history is known about the rough hornsnail; however, as cited by the USFWS (2014b), the snail is very tolerant of silt deposition and has a lifespan of up to 4-5 years in the wild.

Given the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions anticipated to occur within Weogulkfja Creek from the proposed action, it is unlikely the snail (including its feeding, reproduction, and/or habitat) would be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the rough hornsnail

<u>Tulotoma Snail</u>- The Tulotoma snail occurs in cool, well oxygenated, free-flowing streams and rivers; it can be generally found in shoals and riffles with moderate to strong currents. Although the snail is typically associated with shoals and riffles, it has been collected at depths of more than 5 meters (USFWS 2019b). The snail has a strong association with boulder, cobble, and bedrock bottoms; it can be found on the underside of large rocks or between cracks in the bedrock (USFWS 2019b). Historically, the range of the Tulotoma snail included the Coosa and Alabama River drainages; when listed the snail populations were known from the lower Coosa River below Jordan Dam, Ohatchee, Weogufka, Hatchet and Kelly Creeks. Since its listing, the Tulotoma snail is believed to be extirpated from Ohatchee Creek; however, it has been discovered in Choccolocco Creek, Yellowleaf Creek, Weoka Creek, and the Alabama River (USFWS 2019b).

Populations of the Tulotoma snail within the Weogufka Creek were considered healthy at the time of the previous 5 year review; however, extensive surveys have not been conducted for over 10 years and the current status of the species within the creek cannot be determined (USFWS 2019b).

Given the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions anticipated to occur within Weogulkfja Creek from the proposed action, it is unlikely the snail (including its feeding, reproduction, and/or habitat) would be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the Tulotoma snail.

<u>Finelined Pocketbook</u>- The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019. New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized

(USFWS 2019).

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).

Due to the lack on noticeable changes in hydrology and water quality at Weogulfka Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Finelined Pocketbook.

<u>Ovate Clubshell</u>- The Ovate Clubshell is found in riffles, runs, and shoals of small creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel occurred in the Tombigbee and Black Warrior, Alabama, Cahaba, and Coosa rivers and their tributaries within Mississippi and Alabama; however, the Coosa River and its tributaries are not listed as current locations for known surviving populations (USFWS 2019). Overall, the mussel is noted to be currently stable, with tributary populations being discovered in several Tombigbee River, Cahaba River, and Alabama River tributaries (USFWS 2019). Historically in the Coosa Basin the Ovate Clubshell was only found in the Etowah and Conasagua Rivers, not the Weiss Bypass/Terrapin Creek area (Williams and Hughes, 1998).

The Ovate Clubshell has only been found recently in the Tombigbee River, Cahaba River, and the Alabama River and is not found in the Weogulka Creek Basin. As such in USACE determination that the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any suitable glochidia host fish of the Ovate Clubshell.

<u>Southern Clubshell</u>- This mussel is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019a). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019a). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019a).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and

July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the infrequent nature of a 100-hundred year flood and the only minor changes to the hydrology under a 5-year flood, the changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

<u>Southern Pigtoe</u>- This mussel is found in riffles, runs, and shoals of medium creeks to large rivers, with sand and gravel substrate (USFWS 2019a). Historically, the mussel's range includes the Coosa River and tributaries in Alabama, Georgia, and Tennessee; currently, the mussel is found in tributaries which include: Big Canoe Creek, Terrapin Creek, Yellowleaf Creek, Hatchet Creek, and Cheaha Creek (USFWS 2019a). Since its listing, the more recent tributary populations of the mussel were discovered in Terrapin, Yellowleaf, and Hatchet Creeks (USFWS 2019a). All populations of the mussel are noted to be small and localized, with the most robust population found in Shoal Creek (USFWS 2019a).

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5-year flood changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Pigtoe.

<u>Blue Shiner</u>– Habitat for the blue shiner includes cool, clear, small to medium-sized rivers over firm substrates (sand, gravel, or rubble) in pools, backwaters, and areas of moderate current. Previous studies revealed a diet of mostly terrestrial insects supplemented with occasional immature mayfly and caddisfly (NatureServe 2020). The blue shiner's historical range included the Cahaba and Coosa river systems and in the Mobile Bay drainage above the Fall Line, Alabama, Georgia, and Tennessee. The species is now restricted to the Conasauga River and tributaries in Tennessee and Georgia, Coosawattee River and tributaries in Georgia, and Weogufka and Choccolocco creeks and lower Little River, tributaries of Coosa River in Alabama (Boschung and Mayden 2004). Declines in populations have been caused by water pollution, siltation, and construction of reservoirs for hydropower, navigation, and flood control (USFWS 1992); however, during their 5-yr review of the species in 2014, the USFWS noted the population is stable overall (USFWS 2014a).

The species does not range freely throughout a continuous system; its habitat includes specific habitat patches that may be separated from each other (USFWS 2014a). The blue shiner, which can be found throughout the water column, is a crevice spawner; the female releases eggs in the crevices of logs and rocks (USFWS 2014a). Little is known about the juvenile daily activities of the blue shiner.

With the flood annual exceedance event differences noted for the 5-yr model and the 100-yr model, changes in duration of elevation changes from the modeled flood events, *and the negligible to minor effects to water quality changes anticipated to occur within Weogufka Creek, the proposed action is unlikely to adversely impact the blue shiner, its habitat, reproduction, and/or feeding. Therefore, the proposed action may affect, but is not likely to adversely affect the blue shiner within Weogufka Creek.*

<u>White Fringeless Orchid</u>- The white fringeless orchid is a perennial herb that can be found in wet, flat, boggy areas at the head of streams or seepage slopes. As of the early 1990's, 30 occurrences were noted; these occurrences were distributed among 20 counties in five southeastern states (which includes Alabama and Georgia). Currently, the species is noted as being extant at 58 occurrences distributed among 31 counties in the five states (USFWS 2016b).

The white fringeless orchid reproduces via cross-pollination, it has a self-compatible breeding system in which individual plants can produce seeds using its own pollen (USFWS 2016b). The orchid depends on a symbiotic relationship with mycorrhizal fungi for carbon; the relationship enhances seed germination and development (USFWS 2016b).

Due to the infrequent nature of a 100-year flood and only minor changes to the hydrology under a 5- year flood, changes in operations may affect but are not likely to adversely affect the habitat or reproduction of the White Fringeless Orchid.

<u>Chestnut Creek</u>

Chestnut Creek is a tributary to the Coosa River in the Jordan Lake area. No changes to operations are proposed at Mitchell Lake Dam or Jordan Dam which would impact Jordan Lake pool elevations; however, as run of river projects, the proposed action would have residual effect on lake levels compared to the NAA.

Given the modified flood operation changes of the proposed action, the results from the 5-yr flood annual exceedance event (more frequent event) model indicate a maximum of 1.07-ft increase in elevation for Chestnut Creek under the proposed action compared to the NAA. The duration model indicates a 1-hr decrease in the amount of time the tributary would be impacted by the 5-yr annual flood exceedance event under the proposed action compared to the NAA.

The 100-yr flood annual exceedance event (rare event) elevation model predicts up to a 0.74-ft increase in elevation for Chestnut Creek under the proposed action compared to the NAA. The duration model indicates a 53-hr increase in the amount of time the tributary would be impacted by the 100-yr annual flood exceedance event under the proposed action compared to the NAA.

Figure 20: Chestnut Creek under a 5- year flood vs Chestnut Creek in a 100-year flood, changes in inundation are show in purple.

Effects determination on the following listed species occurring within Chestnut Creek range are provided below: Wood Stork (T), Finelined Pocketbook (T), Southern Clubshell (E), and Alabama Canebrake Pitcher Plant (E).

<u>Wood Stork</u>- Given the foraging, habitat, and breeding requirements of the wood stork (pg 16 of the BA), the bird may be present in the Chestnut Creek area and would have some dependency on the water resources in that area. However, the bird is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Chestnut Creek that may result from the proposed action. While it is conceivable that the wood stork could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the wood stork within Chestnut Creek.

<u>Finelined Pocketbook</u>- The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019. New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized (USFWS 2019).

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it *was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).*

Due to the lack of noticeable changes in hydrology and water quality at Chestnut Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Finelined Pocketbook.

<u>Southern Clubshell</u>- The southern clubshell found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the lack of noticeable changes in hydrology and water quality at Chestnut Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

<u>Alabama Canebrake Pitcher-Plant</u>- Listed as endangered on April 10, 1989, the Alabama canebrake pitcher-plant (54 FR 10150) is endemic to a three-county area in central Alabama. As of date of Recovery Plan for the species, the plant is known to exist at only 12 sites in central Alabama, 4 of which are in Autauga County, 6 in Chilton county, and 2 in Elmore County (1992 Recovery Plan). Colony sites, all noted on privately-owned lands, are wet much of the year (1992). The plant occurs in sandhill seeps, swamps, and bogs along the fall-line of central Alabama; growing in acidic, highly saturated, deep peaty sands or clays. It grows in full sun or light shade.

The Alabama canebrake pitcher-plant is a non-woody carnivorous plant that grows from a horizontal rhizome. While the plant produces flowers for pollination, the plant can also reproduce asexually via the offshoots formed by the rhizome (Boyd 2015).

Riparian areas and adjacent lands along the rivers and primary tributaries within the ROI are influenced by flows, lake levels, and periodic flooding, all of which could affect the protected flowering plant species that may be present. The proposed action will not result in the permanent conversion of one habitat type into another but will result in changes to the duration of inundation along the margins of lakes and slight seasonal differences in flow of the downstream river segments. Given the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions anticipated to occur within Chestnut Creek from the proposed action, it is unlikely the Alabama canebrake pitcher plant would be adversely affected. Therefore, the proposed action may affect, but is not likely to adversely affect the Alabama canebrake pitcher-plant that may occur along adjacent lands of Chestnut Creek.

Weoka Creek

Weoka Creek is a tributary to the Coosa River in the Jordan Lake area. No changes to operations are proposed at Mitchell Lake Dam or Jordan Dam which would impact Jordan Lake pool elevations; however, as run of river projects, the proposed action would have residual effect on lake levels compared to the NAA.

Given the modified flood operation changes of the proposed action, the results from the 5-yr flood annual exceedance event (more frequent event) model indicate a 0.03-ft increase in elevation for Weoka Creek under the proposed action compared to the NAA. The duration model indicates a 5-hr decrease in the amount of time the tributary would be impacted by the 5-yr annual flood exceedance event under the proposed action compared to the NAA.

The 100-yr flood annual exceedance event (rare event) model predicts up to a 0.03-ft increase in elevation for Chestnut Creek under the proposed action compared to the NAA. The duration model indicates a 57-hr decrease in the amount of time the tributary would be impacted by the 100-yr annual flood exceedance event under the proposed action compared to the NAA.

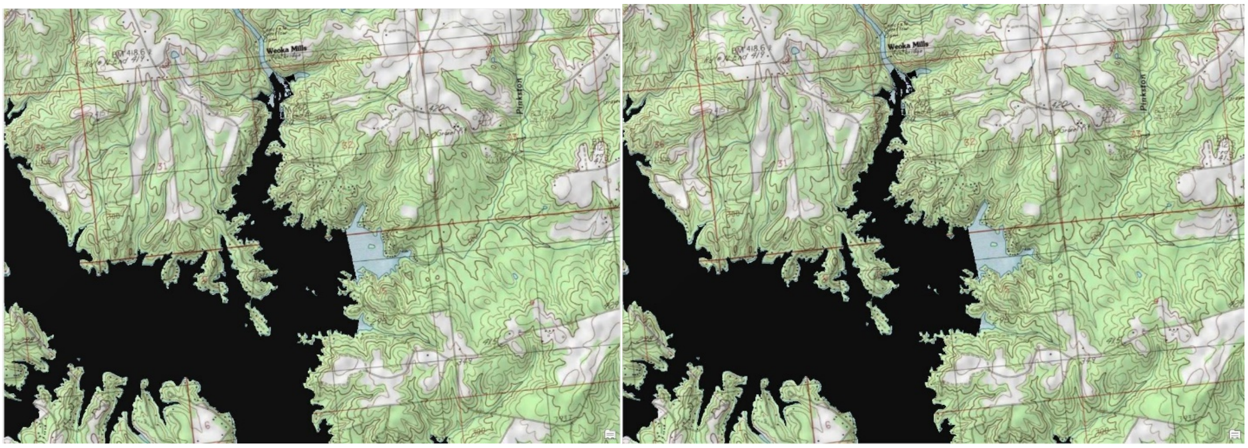


Figure 21: Weoka Creek under a 5- year flood vs Weoka Creek in a 100-year flood, changes in inundation are show in purple.

Effects determination on listed species (Wood Stork (T), Tulotoma Snail (T), and Southern Clubshell (E) that may occur within Weoka Creek are provided below.

<u>*Wood Stork*</u>*- Given the foraging, habitat, and breeding requirements of the wood stork (pg 16 of the BA), the bird may be present in the Weoka Creek area and would have some dependency on the water resources in that area. However, the bird is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in the Weoka Creek that may result from the proposed action. While it is conceivable that the bird could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the wood stork within Weoka Creek.*

<u>*Tulotoma Snail*</u>*- The Tulotoma snail occurs in cool, well oxygenated, free-flowing streams and rivers; it can be generally found in shoals and riffles with moderate to strong currents. Although the snail is typically associated with shoals and riffles, it has been collected at depths of more than 5 meters (USFWS 2019b). The snail has a strong association with boulder, cobble, and bedrock bottoms; it can be found on the underside of large rocks or between cracks in the bedrock (USFWS 2019b). Historically, the range of the Tulotoma snail included the Coosa and Alabama River drainages; when listed the snail populations were known from the lower Coosa River below Jordan Dam, Ohatchee, Weogufka, Hatchet and Kelly creeks. Since its listing, the Tulotoma snail is believed to be extirpated from Ohatchee Creek; however, it has been discovered in Choccolocco Creek, Yellowleaf Creek, Weoka Creek, and the Alabama River (USFWS 2019b).*

Populations of the Tulotoma snail within Weoka Creek were considered healthy at the time of the previous 5 year review; however, extensive surveys have not been conducted for more than 10 years and the current status of the species within the creek cannot be determined (USFWS 2019b).

With the flood annual exceedance event differences predicted for the 5-yr model and *the 100-yr model, duration of elevation changes from each modeled flood event, and the negligible to minor effects to water quality changes anticipated to occur within Choccolocco Creek the proposed action is unlikely to adversely impact the Tulotoma snail, its habitat, reproduction, and/or feeding. Therefore, the proposed action may affect, but is not likely to adversely affect the Tulotoma snail within Weoka Creek.*

Southern Clubshell- This mussel is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019a). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019a). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019a).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

Due to the lack on noticeable changes in hydrology and water quality Weoka Creek, changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any glochidia host fish or the Southern Clubshell.

Georgia

Lake Allatoona and the Etowah River above Allatoona Pool

Under the proposed changes at Lake Allatoona the summer guide curve elevation would be raised from 840 ft to 841 ft and the winter guide curve elevation would be raised from 823 ft to 824.5 ft. Thus, the pool level in Allatoona Lake would be maintained at a slightly higher level throughout the year compared to current operations under the NAA. While operating under the current operations, during the 2019 water year, the pool at Lake Allatoona varied from a low of 823.28 ft in December to a high of 851.16 ft in March. The proposed action would not cause any new areas of the lake or its tributaries to be inundated nor would it cause any previously inundated sites to become dry. It is unlikely that the proposed changes will cause any significant changes to the hydrology of the tributaries to Lake Allatoona or the upper Etowah River and its tributaries. Over the simulated 73-year period of hydrologic record, median pool levels in Allatoona Lake would be between about 1 to 1.5 ft higher than the NAA from January through July and from 0 to 1 ft higher from August through December. At the 90 percent exceedance level (dry conditions), the pool levels would be about 1 to 1.5 ft higher than the NAA from mid-December through May and 0 to 1 ft higher from June to mid-December. Over the modeled period of record, the lowest water surface elevation that the lake would be expected to reach would be elevation 817.3 ft, about 1.1 ft lower than the NAA and about 5.7 ft below the current winter guide curve level of 823 ft.

Butler Creek

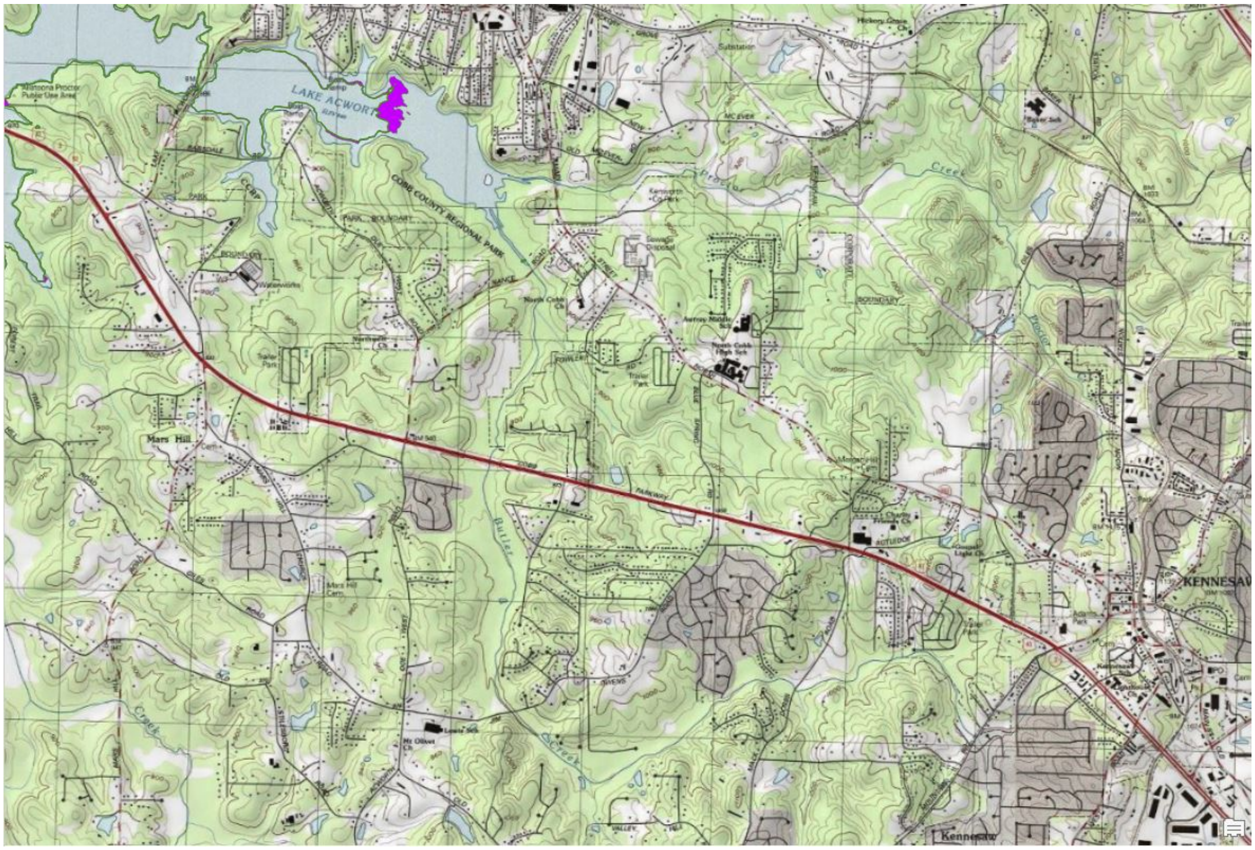


Figure 22: Butler Creek at its confluence with Lake Acworth the change in elevation from 840 to 841 is shown in purple.

Effects determination on the Cherokee Darter (T) which may occur within Butler Creek are provided below.

<u>Cherokee Darter</u>- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the pool at Lake Allatoona will not affect Butler Creek due to the presence of Lake Acworth. Lake Acworth's elevation of 864 prevents the one-foot change in Lake Allatoona's pool from influencing Butler Creek, there for the proposed *action may affect, but is not likely to adversely affect the Cherokee Darter in Butler Creek.*

<u>Clark Creek</u>

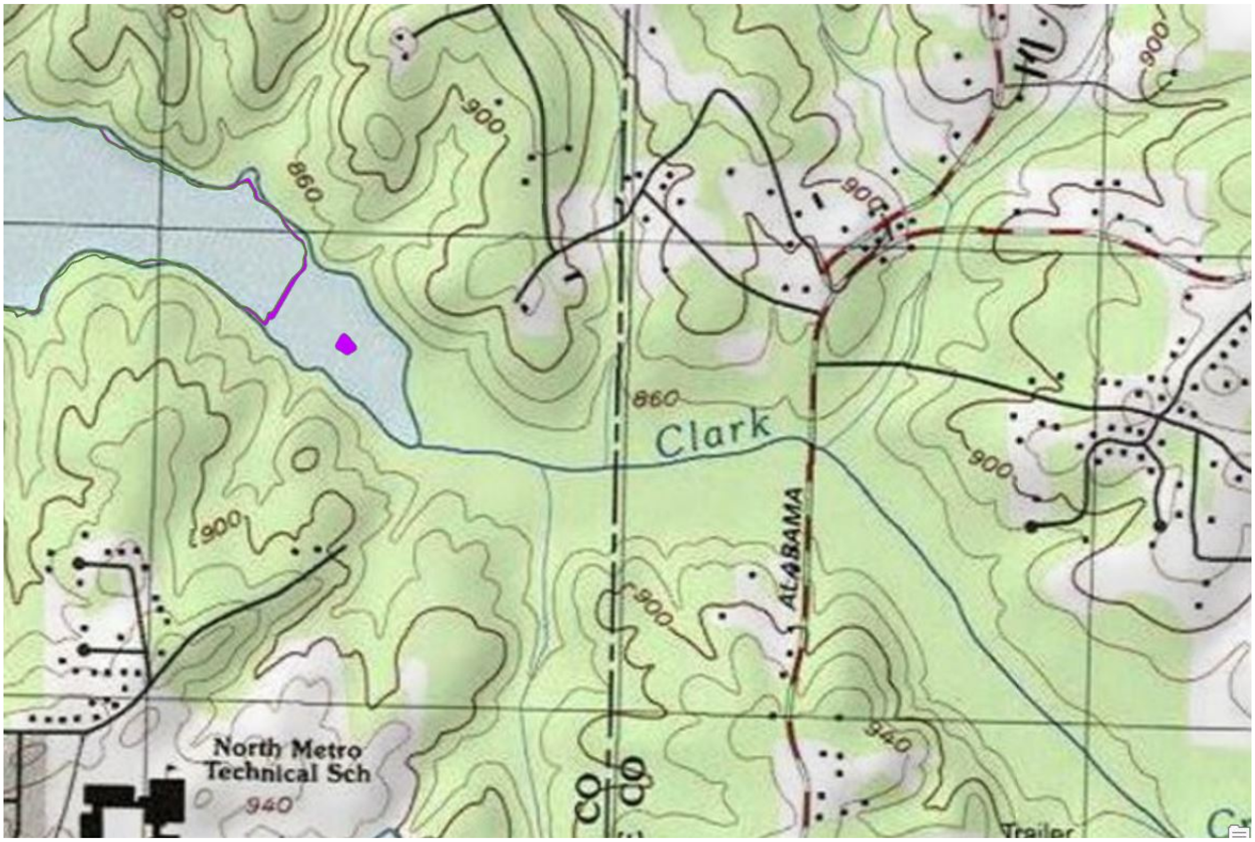


Figure 23: Clark Creek at its confluence with Lake Allatoona the change in elevation from 840 to 841 is shown in purple.

Effects determination on listed species (i.e. Cherokee Darter (T)) *that may occur within Clark Creek* are provided below.

<u>Cherokee Darter</u>- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in Clark Creek.

<u>Knox Creek</u>

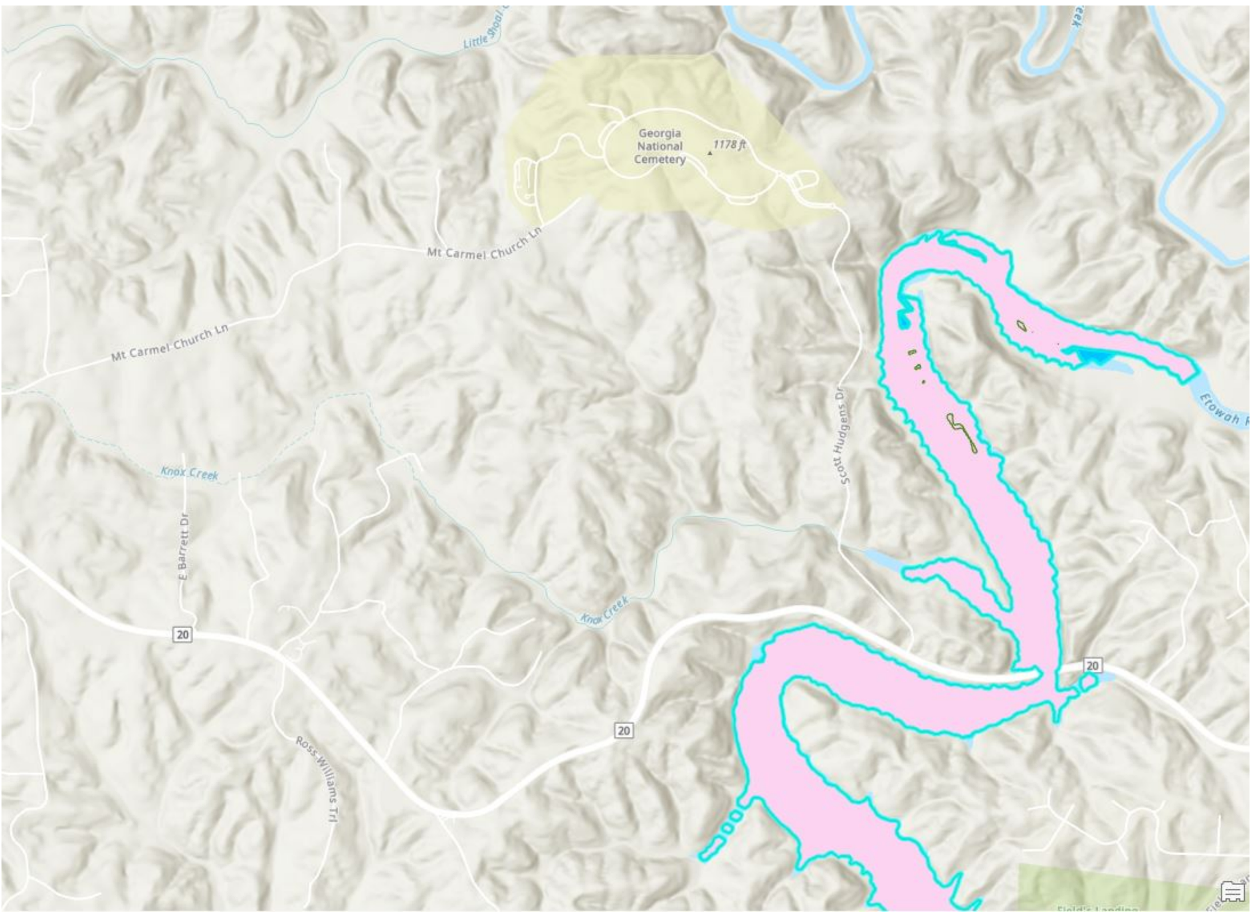


Figure 24: Knox Creek at its confluence with Lake Allatoona the change in elevation from 840 to 841 is shown in purple

Effects determination on listed species (i.e. Cherokee Darter (T)) that may occur within Knox Creek are provided below.

<u>Cherokee Darter</u>- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system, it has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in Knox Creek.

<u>Downing Creek</u>

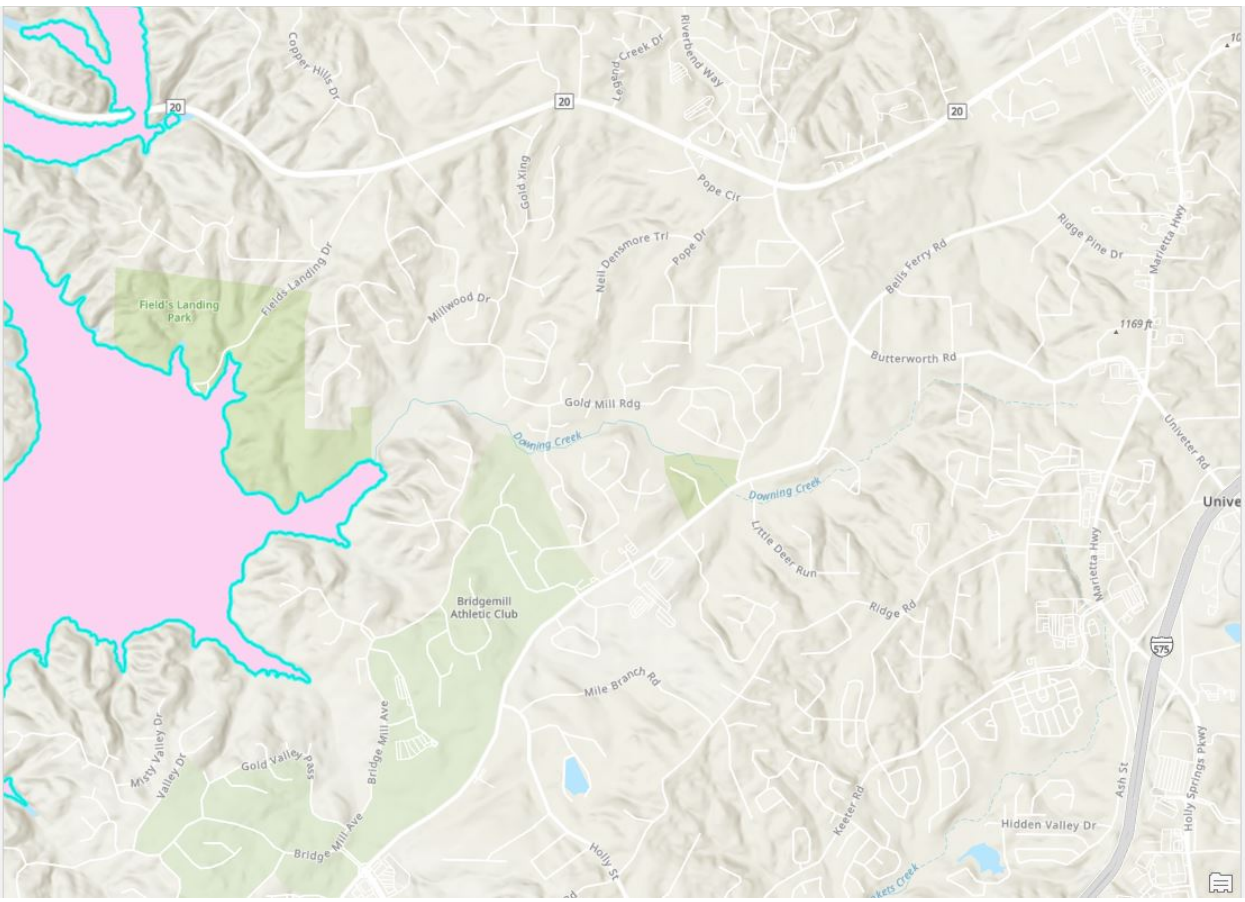


Figure 25: Downing Creek at its confluence with Lake Allatoona the change in elevation from 840 to 841 is shown in purple

Effects determination on listed species (i.e. Cherokee Darter (T)) that may occur within Downing Creek are provided below.

<u>Cherokee Darter</u>- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in Downing Creek.

<u>Sweetwater Creek</u>

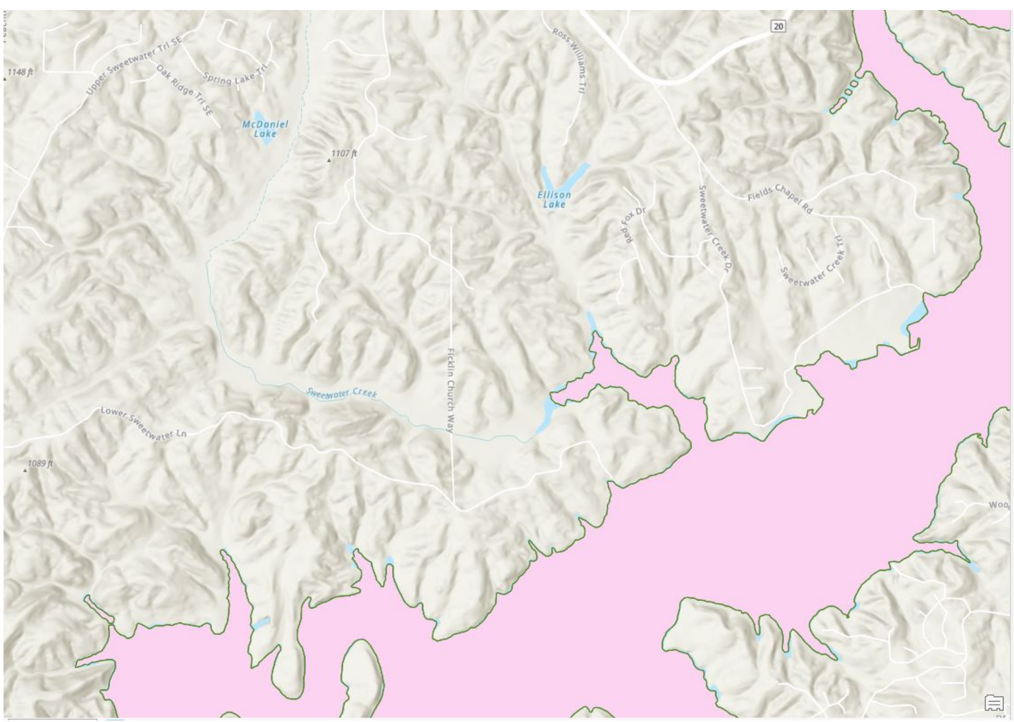


Figure 26: Sweetwater Creek at its confluence with Lake Allatoona the change in elevation from 840 to 841 is shown in purple

Effects determination on the Cherokee Darter (T) that may occur within Sweetwater Creek are provided below.

Cherokee Darter- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in Sweetwater Creek.

Hickory Log Creek

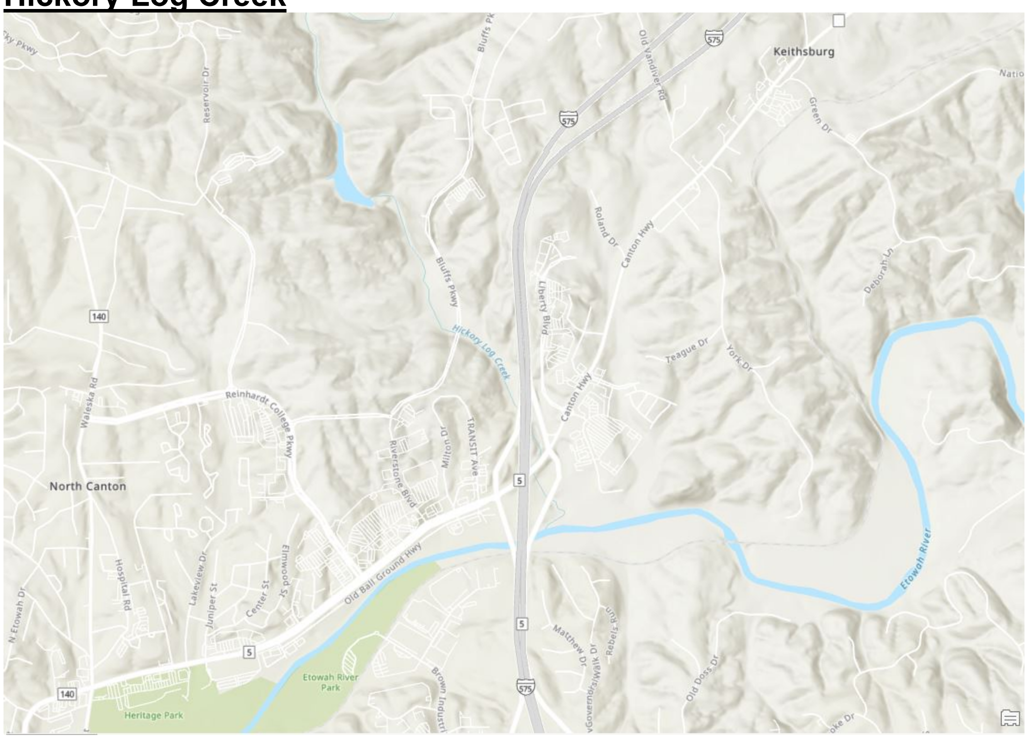


Figure 27: Hickory Log Creek at its confluence with the Etowah River the change in elevation from 840 to 841 is shown in purple

*Effects determination on listed species (*Amber Darter (E), Cherokee Darter (T), and Frecklebelly Madtom (proposed T)*) that may occur within Hickory Log Creek are provided below.*

<u>*Amber Darter*</u>*- The amber darter is endemic to the Coosa River basin, upon listing it was only found in the Conasauga River. It has recently been rediscovered in both the mainstem Etowah River upstream of Lake Allatoona and its tributaries including Shoal Creek and Sharp Mountain Creek (USFWS, 2014).*

Amber darters occurred in relatively low densities in stream riffles that generally supported large populations of other species of small benthic fish. Individuals usually were observed over cobble, gravel, or sand, and occasionally moved under small cobbles or river weed for short (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Amber Darter in Hickory Log Creek.

<u>*Cherokee Darter*</u>*- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.*

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in Hickory Log Creek.

<u>*Frecklebelly Madtom (proposed)*</u>*- The freckelbelly madtom is found in small populations in the Mobile River Basin. Current range includes the upper Tombigbee River, Etowah River, and Conasauaga River system (NatureServe, 2020).*

The species is found in small to large rivers with clean, flowing water. It occurs in the Ridge and Valley physiographic province in the Conasauga River and Piedmont Upland physiographic provinces in the Etowah River.

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the frecklebelly madtom.

Jug Creek and unnamed tributaries

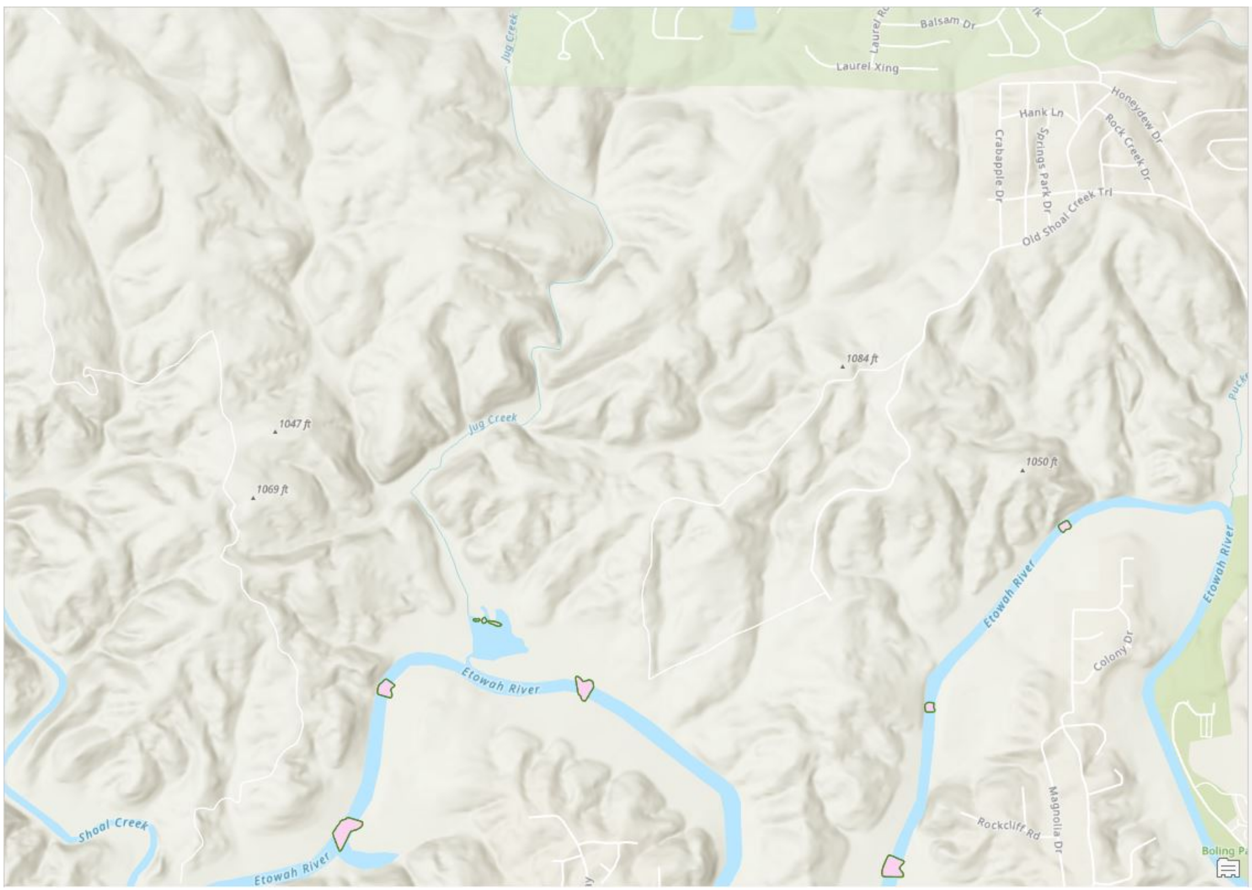


Figure 28:Unnamed tributaries at their confluence with the Etowah River the change in elevation from 840 to 841 is shown in purple

*Effects determination on listed species (*Amber Darter (E), Cherokee Darter (T), and Frecklebelly Madtom (proposed T) Proposed Critical Habitat) *that may occur within Jug Creek and the upstream unamend tributaries of the Etowah River are provided below.*

<u>Amber Darter</u>- The amber darter is endemic to the Coosa River basin, upon listing it was only found in the Conasauga River. It has recently been rediscovered in both the mainstem Etowah River upstream of Lake Allatoona and its tributaries including Shoal Creek and Sharp Mountain Creek (USFWS, 2014).

Amber darters occurred in relatively low densities in stream riffles that generally supported large populations of other species of small benthic fish. Individuals usually were observed over cobble, gravel, or sand, and occasionally moved under small cobbles or river weed for short (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Amber Darter in the mainstem Etowah River, Jug Creek or their tributaries.

<u>Cherokee Darter</u>- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1-foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in the mainstem Etowah River, Jug Creek or their tributaries.

<u>Frecklebelly Madtom (proposed)</u>- The freckelbelly madtom is found in small populations in the Mobile River Basin. Current range includes the upper Tombigbee River, Etowah River, and Conasauaga River system (NatureServe, 2020).

The species is found in small to large rivers with clean, flowing water. It occurs in the

Ridge and Valley physiographic province in the Conasauga River and Piedmont Upland physiographic provinces in the Etowah River.

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the frecklebelly madtom in the mainstem Etowah River, Jug Creek or their tributaries.

.

<u>Illinois Creek</u>

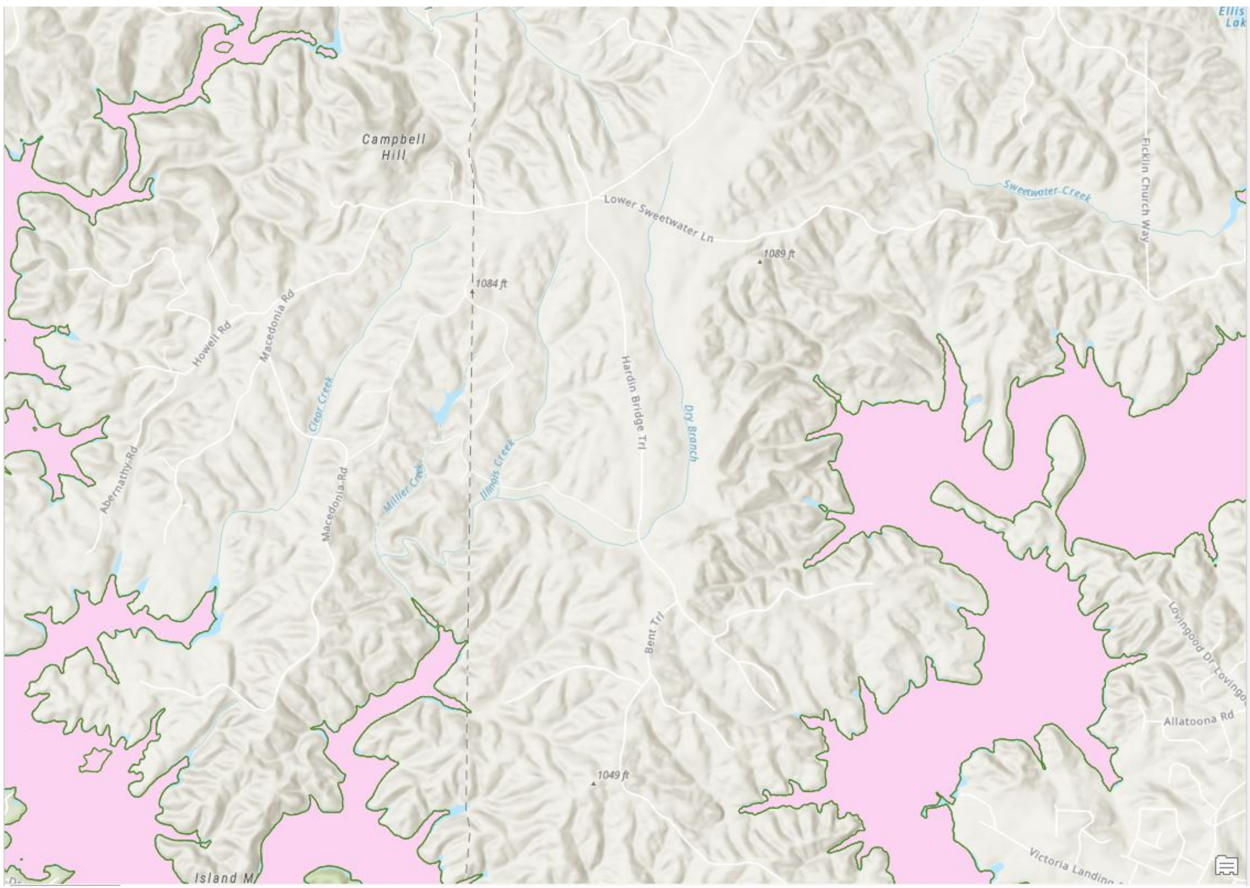


Figure 29: Illinois Creek at its confluence with Lake Allatoona the change in elevation from 840 to 841 is shown in purple

*Effects determination on listed species (*Cherokee Darter (T), Northern Long-Eared Bat (T)) *that may occur within Illinois Creek are provided below.*

<u>Cherokee Darter</u>*- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian*

clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in Illinois Creek.

<u>Northern Long-Eared Bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the northern long-eared bat (pg 16 of the BA), the bat may be present in the Illinois Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in Illinois Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Indiana bat within Illinois Creek.

Kellogg Creek

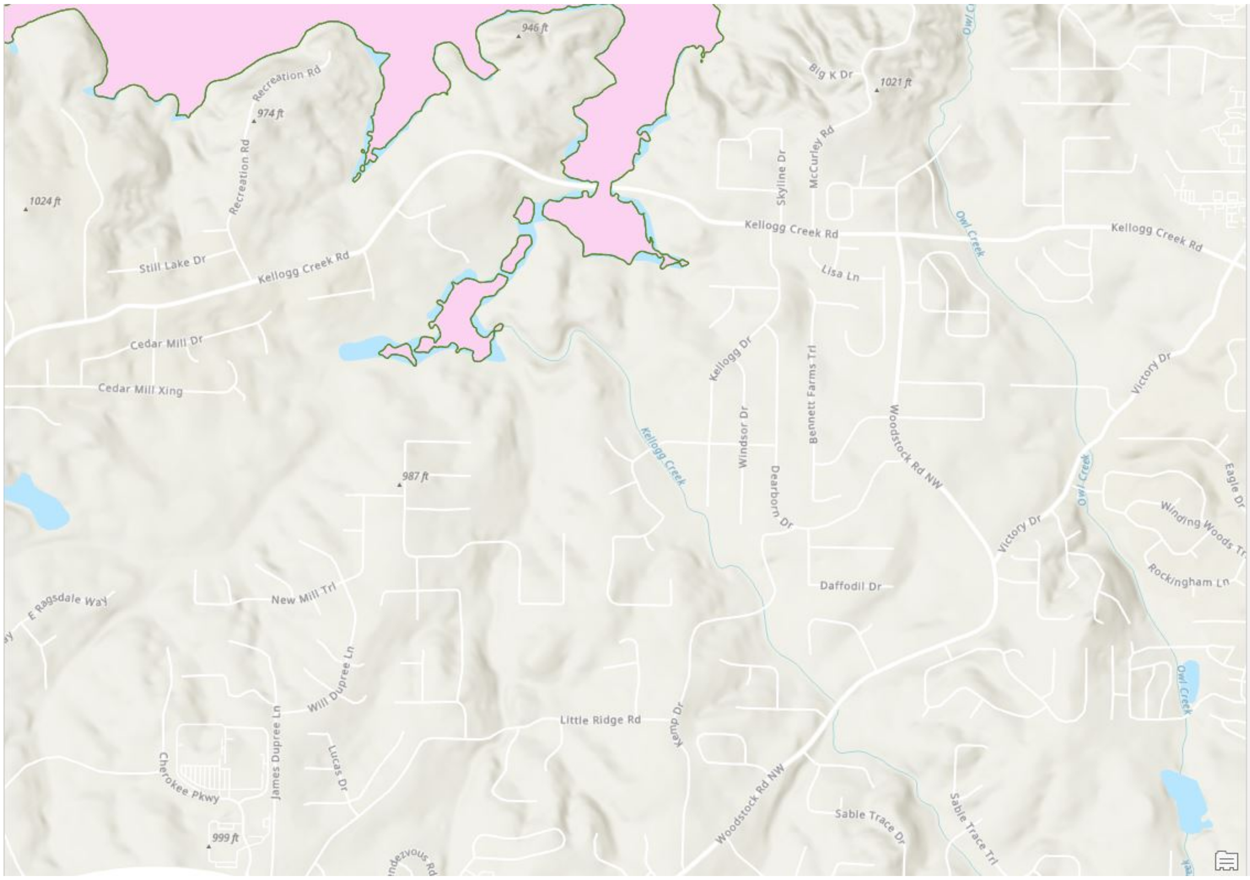


Figure 30: Kellogg Creek at its confluence with Lake Allatoona the change in elevation from 840 to 841 is shown in purple

*Effects determination on listed species (*Cherokee Darter (T) and Northern Long-eared Bat (T)) *that may occur within Kellogg Creek are provided below.*

<u>Cherokee Darter</u>- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current *operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in Kellogg Creek.*

<u>Northern long-eared bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the northern long-eared bat (pg 16 of the BA), the bat may be present in the Kellogg Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in Kellogg Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Indiana bat within Kellogg Creek.

<u>unnamed tributary (34.116245, -84.617808)</u>

Figure 31: unnamed tributary (34.116245, -84.617808) at its confluence with Lake Allatoona the changes between 840 and 841 are shown in purple

Effects determination on the Cherokee Darter (T) and Northern Long-Eared Bat (T) that may occur within unnamed tributary (34.116245, -84.617808) are provided below.

<u>Cherokee Darter</u>- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water

Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in the unnamed tributary.

<u>Northern long-eared bat-</u> Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the northern long-eared bat (pg 16 of the BA), the bat may be present in the Lake Allatoona area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in Lake Allatoona that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Northern Long-Eared bat within the unnamed tributary.

Rose Creek

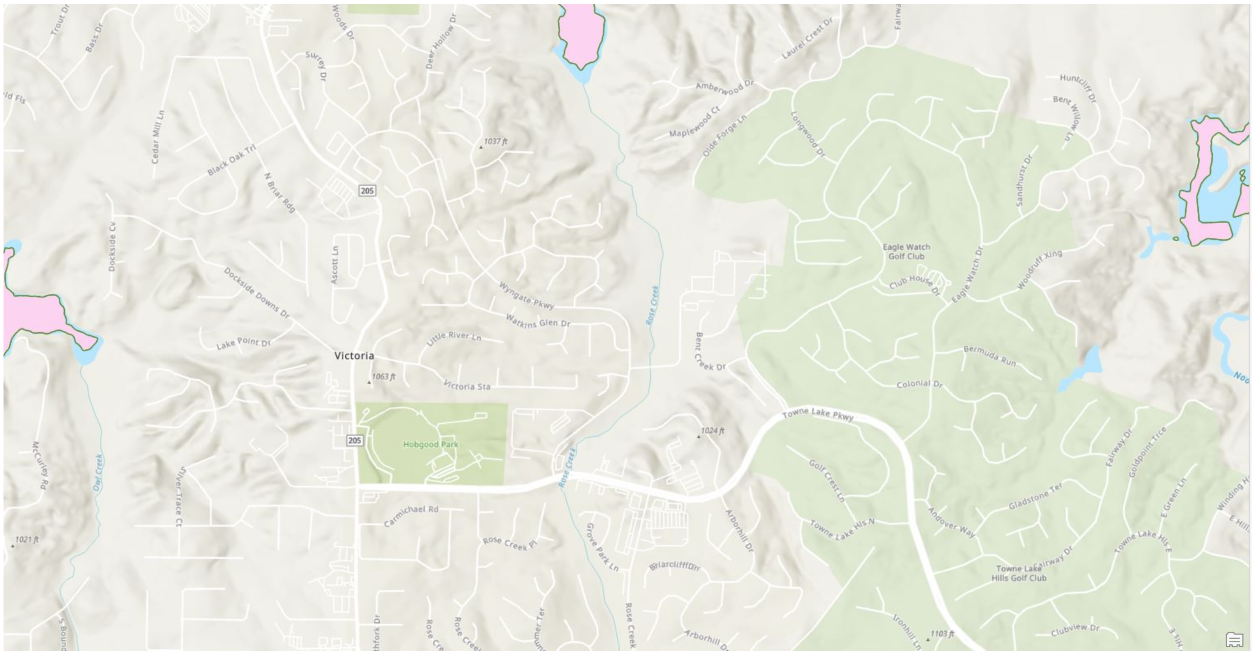


Figure 32: Rose Creek at its confluence with Lake Allatoona the changes between 840 and 841 are shown in purple

Effects determination on the Cherokee Darter (T) *that may occur within Rose Creek are provided below.*

<u>*Cherokee Darter*</u>*- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.*

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in Rose Creek.

Shoal Creek

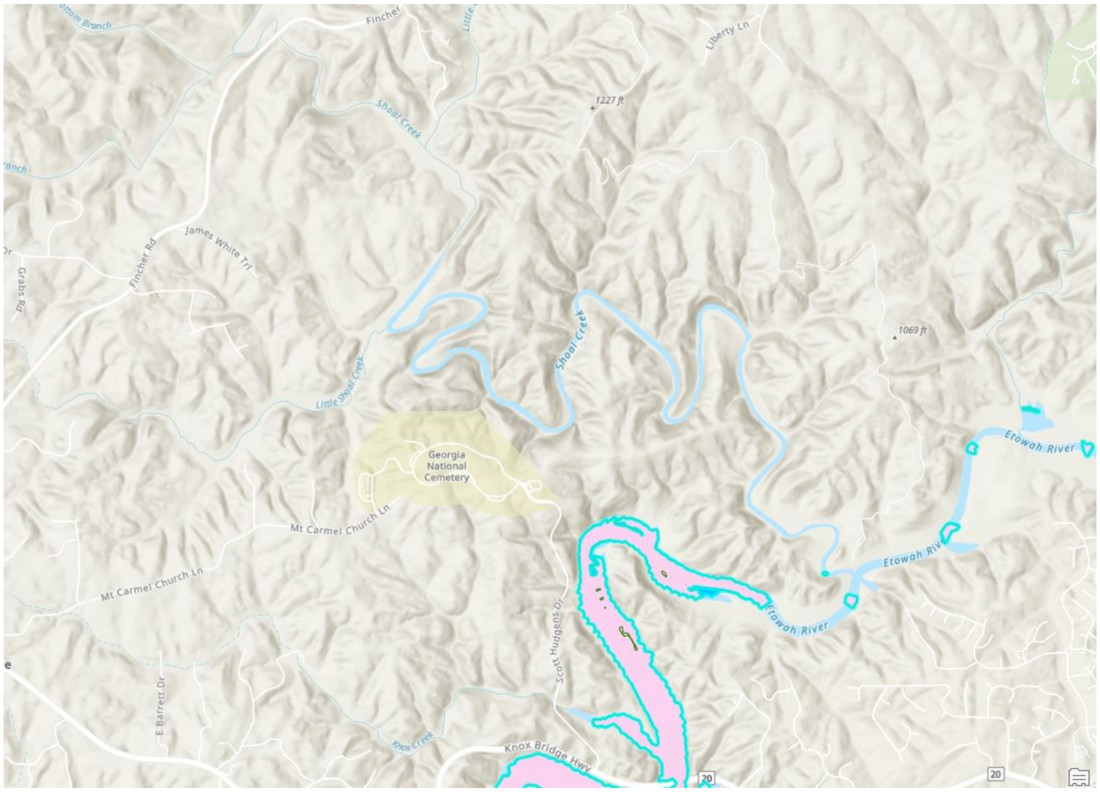


Figure 33: Shoal Creek at its confluence with the Etowah River the changes between 840 and 841 are shown in purple

Effects determination on the Amber Darter (E) *that may occur within Shoal Creek are provided below.*

Amber Darter- The amber darter is endemic to the Coosa River basin, upon listing it was only found in the Conasauga River. It has recently been rediscovered in both the mainstem Etowah River upstream of Lake Allatoona and its tributaries including Shoal Creek and Sharp Mountain Creek (USFWS, 2014).

Amber darters occurred in relatively low densities in stream riffles that generally supported large populations of other species of small benthic fish. Individuals usually were observed over cobble, gravel, or sand, and occasionally moved under small cobbles or river weed for short (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may *affect, but are not likely to adversely affect the Amber Darter in Shoal Creek.*

<u>Stamp Creek</u>

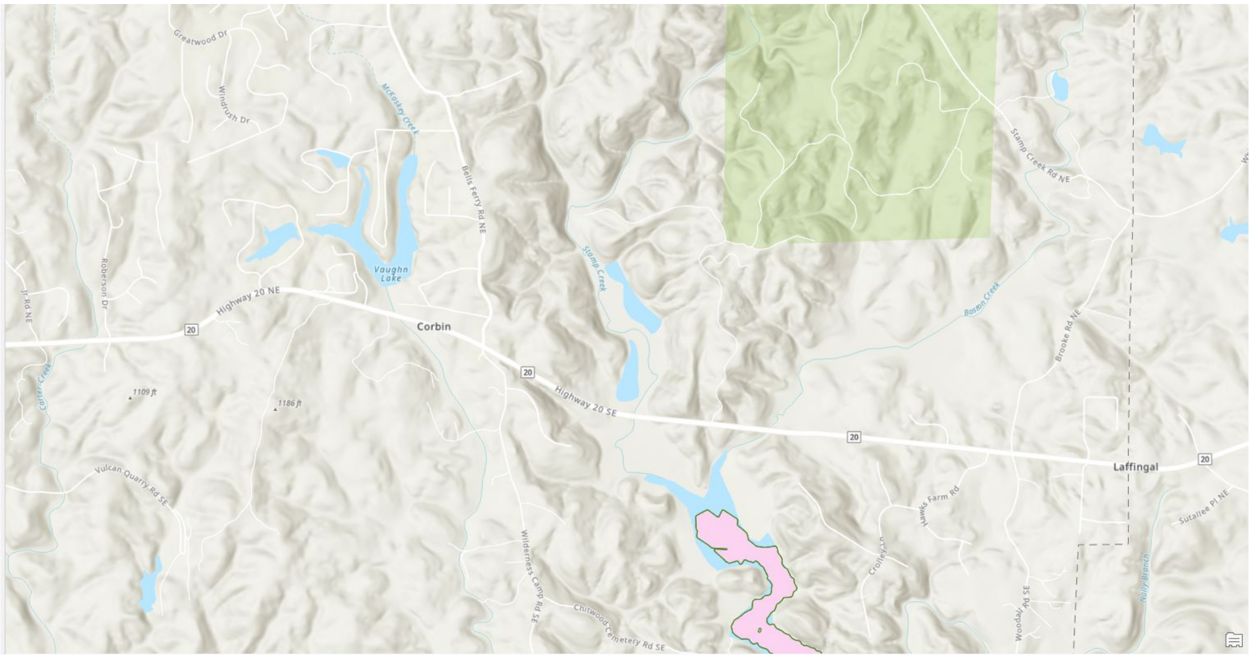


Figure 34: Stamp Creek at its confluence with Lake Allatoona the changes between 840 and 841 are shown in purple

Effects determination on listed species (Cherokee Darter (T), Etowah Darter (E), Northern long-eared bat (T), and White Fringeless Orchid (T)) that may occur within Stamp Creek are provided below.

<u>Cherokee Darter-</u> The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may *affect, but are not likely to adversely affect the Cherokee Darter in Stamp Creek.*

<u>Etowah Darter</u>- The Etowah darter has a stable population on the Etowah mainstem between Amicaola and Sharp Mountain Creek, and in Shoal Creek (Dawson County), Amicalola Creek, Long Swamp Creek, and Raccoon Creek.

Little is known about the life history of the Etowah Darter. It is assumed that it feeds upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Etowah Darter.

<u>Northern long-eared bat</u>- Given the foraging and habitat requirements, including hibernacula and maternity roost requirements of the northern long-eared bat (pg 16 of the BA), the bat may be present in the Stamp Creek area and would have some dependency on the water resources in that area. However, the bat is unlikely to be measurably affected by the very slight changes in flow, flood event elevation, associated duration of elevation changes, and water quality conditions in Stamp Creek that may result from the proposed action. While it is conceivable that the bat could be affected by the proposed action, the likelihood that the species would be adversely affected by the proposed action is negligible. Therefore, the proposed action may affect, but is not likely to adversely affect the Northern Long-Eared bat within Stamp Creek.

<u>White Fringeless Orchid</u>- The white fringeless orchid is a perennial herb that can be found in wet, flat, boggy areas at the head of streams or seepage slopes. As of the early 1990's, 30 occurrences were noted; these occurrences were distributed among 20 counties in five southeastern states (which includes Alabama and Georgia). Currently, the species is noted as being extant at 58 occurrences distributed among 31 counties in the five states (USFWS 2016b).

The white fringeless orchid reproduces via cross-pollination, it has a self-compatible breeding system in which individual plants can produce seeds using its own pollen (USFWS 2016b). The orchid depends on a symbiotic relationship with mycorrhizal fungi for carbon; the relationship enhances seed germination and development (USFWS 2016b).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current *operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the White Fringeless Orchid in Stamp Creek.*

Allatoona Creek

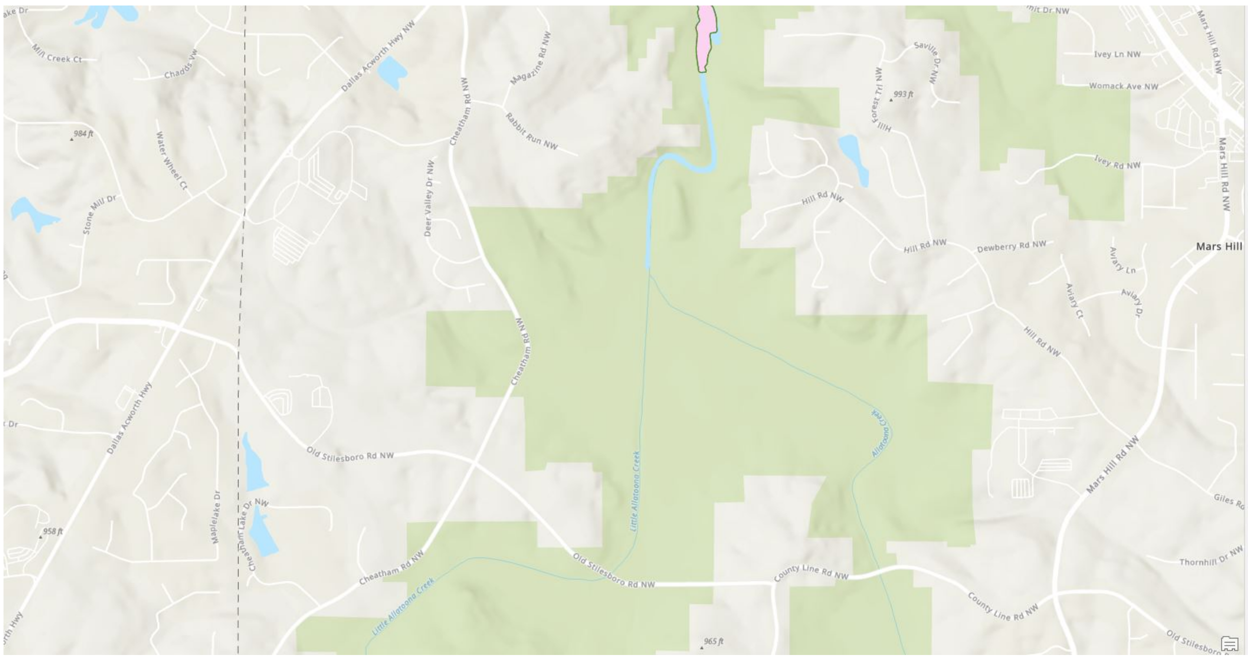


Figure 35: Allatoona Creek at its confluence with Lake Allatoona the changes between 840 and 841 are shown in purple

Effects determination on the Cherokee Darter (T) *that may occur within Allatoona Creek are provided below.*

<u>Cherokee Darter</u>- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in Allatoona Creek.

<u>unnamed tributary (34.042625, -84.7038220)</u>

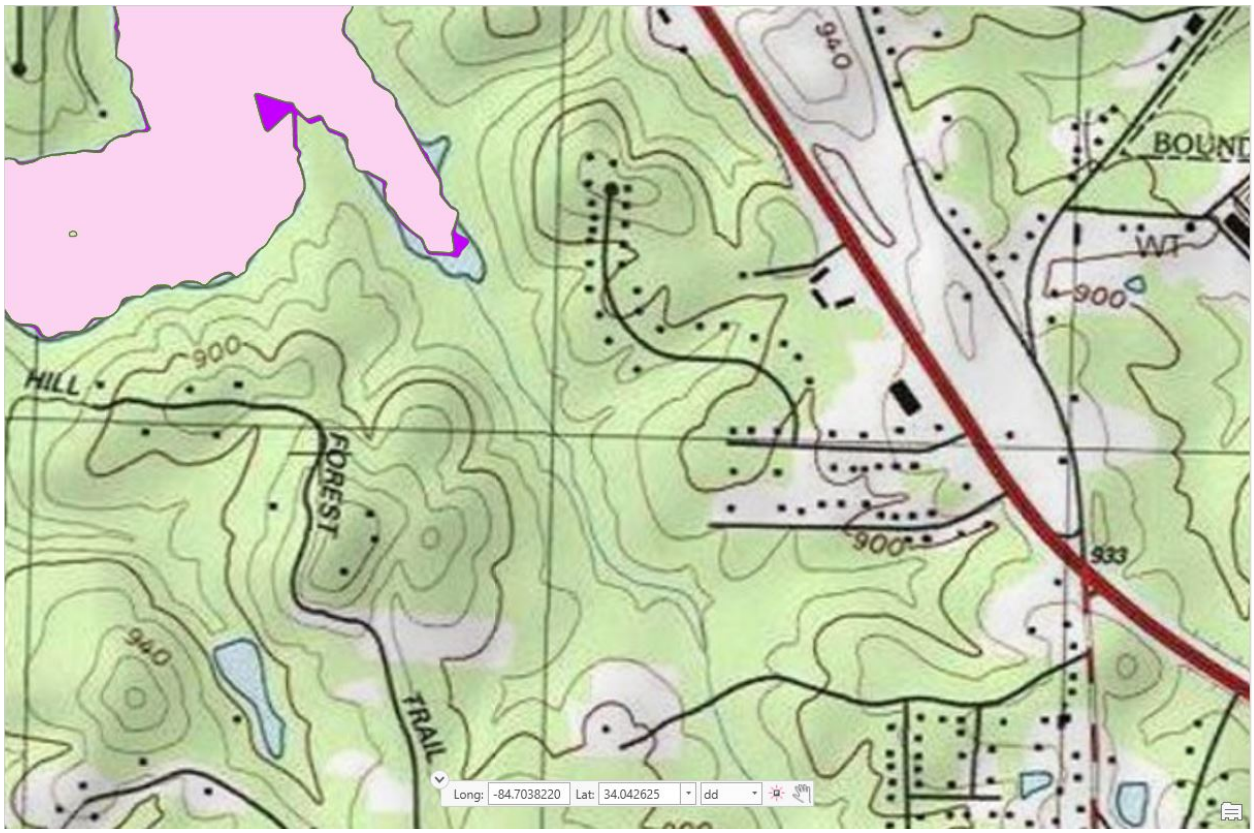


Figure 36: unnamed tributary (34.042625, -84.7038220)) at its confluence with Lake Allatoona the changes between 840 and 841 are shown in purple

Effects determination on Cherokee darter that may occur within unnamed tributary (34.042625, -84.7038220) are provided below.

<u>Cherokee Darter</u>- The Cherokee darter has recently been stressed by habitat loss from the construction of Hickory Log Creek Reservoir by Cobb County Marietta Water Authority and the City of Canton, siltation associated with clearcutting and riparian clearing as part of new development land use, and increased runoff from new roads and infrastructure.

The darter is found in the Etowah River system. It has been found in many of the tributaries of Lake Allatoona. The Cherokee darter spawns during the spring from March *to June, utilizing small depressions in gravel, cobble, or woody debris in runs, slow riffles and pool tails for egg deposition. Cherokee darters presumably prey upon midge and black fly larvae and other small aquatic invertebrates (USFWS, 2014).*

The changes in the operations at Lake Allatoona are minor with a one-foot rise in the guide curve during the summer months and a 1.5-foot rise in the winter guide curve. While the guide curve is being raised 1 foot in the summer it is common under current operations during flood operations for the pool at Lake Allatoona to exceed 850 feet. Even under normal operation conditions during particularly wet summers the pool at Lake Allatoona often exceeds 841 ft. As such the proposed changes in operations may affect, but are not likely to adversely affect the Cherokee Darter in the unnamed tributary.

Oostanaula River

The difference between the proposed operation and the current operations is only 0.01 feet under the design storm on the lower Oostanaula River.

Figure 37: Oostanaula River at its confluence with Little Dry Creek, change in design flood inundation are shown in purple.

The following protected species are within the area: Finelined Pocketbook (T), Alabama moccasinshell (T), Coosa moccasinshell (E), Interrupted rocksnail (E), Ovate clubshell (E), Southern acornshell (E), Southern clubshell (E), Southern pigtoe (E), Triangular *kidneyshell (E), and Upland combshell (E). Effects determination on listed species that may occur within the Oostanaula River are provided below.*

<u>Finelined Pocketbook-</u> The Finelined Pocketbook is found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). Robust populations of the mussel are noted to be within the Tallapoosa River and upper Coosa River Basin (USFWS 2019). The mussel is believed to be widely distributed in the Coosa and Tallapoosa River tributaries; the species continues to survive in the Coosa River and its tributaries, which include: Terrapin Creek, Yellowleaf Creek, Kelly Creek, Choccolocco Creek (and its tributary Cheaha Creek), and Hatchet Creek and Little River (USFWS 2019). New tributary populations that have been documented after the mussel's listing include: Big Canoe Creek, Chestnut Creek, and Little River (USFWS 2019). Overall, the mussel's population is believed to be improving and widespread, even with most populations being relatively small and localized (USFWS 2019).

Three suitable host fish were identified in Haag, Warren and Shillingsford 1997, spotted bass (Micropterus punctulatus), largemouth bass (Micropterus salmoides), and redeye bass (Micropterus coosae). Habitat information is lacking on this species. Historically, it was found in large rivers to small creek habitats (USFWS, 2000). It has been found associated with swift flowing riffles and gravel-cobble substrates in the Conasauga River. Recently, it has been found in stable sand and in gravel in small streams above the Fall Line (USFWS, 2000).

The difference between the proposed operation and the current operations is only 0.01 ft under the design storm. Therefore, the proposed changes in operations may affect, but are not likely to adversely affect the finelined pocketbook.

<u>Alabama moccasinshell</u>- The Alabama moccasinshell has stable populations in the Sipsey Fork, Buttahatchee River, and the Sipsey River and small localized populations throughout the Mobile River Basin. The Alabama moccasinshell inhabits sand, gravel, and cobble shoals with moderate to strong currents. The difference between the proposed operation and the current operations is only 0.01 feet under the design storm. Therefore the proposed changes in operations may affect, but are not likely to adversely affect the Alabama moccasinshell.

<u>Coosa Moccasinshell</u>- As cited in the 2019 5-Year Review the total distribution of the Coosa moccasinshell is less than 8 stream miles of the Conasauga River and Holly Creek combined (Johnson 2012a). The frequency of collection of Coosa moccasinshell has declined in both tributaries where it is known to survive (Johnson and Evans 2000, P. Johnson, pers. comm. 2018). The species was found at 3 sites out of 31 localities surveyed on the Conasauga River, and at 2 of 7 localities searched on Holly Creek during a 2005 survey effort in and adjacent to the Cherokee and Chattahoochee National Forests (Johnson et al. 2005). Evidence of limited recruitment was observed in the Conasauga River in 2005, but recent recruitment has not been observed in Holly Creek (MRBMRC 2010)

The Coosa Moccasinshell inhabits sand/ gravel/cobble shoals with moderate to strong currents in small to medium sized streams. Coosa moccasinshells are usually burrowed completely in the stream bottom.

The difference between the proposed operation and the current operations is only 0.01 feet under the design storm. Therefore the proposed changes in operations may affect, but are not likely to adversely affect the Coosa moccasinshell.

<u>Interrupted Rocksnail</u>- The interrupted rocksnail historically occurred in the Coosa River in Alabama and Georgia. Based on the USFWS's 2020 5-year review the interrupted rocksnail does not occupy any waterbodies in Alabama despite attempts for reintroduction below Jordan Dam and in the Weiss Bypass.

The interrupted rocksnail lives in shoals, riffle, and rock outcroppings. The snail lives attached to bedrock, boulders, coble, and gravel and are sedentary moving only in response to water level changes. The snail lives at water depths less than 50 centimeters (cm) (20 inches (in)), and in water currents less than 40 cm/second (sec) (16 in/sec). Eggs are deposited in the same habitat. Fecundity increases with age and size. The interrupted rocksnail feeds on biofilms and periphyton attached to its habitat substrate (USFWS, 2020).

The difference between the proposed operation the and current operations is only 0.01 feet under the design storm. Therefore the proposed changes in operations may affect, but are not likely to adversely affect the interrupted rocksnail.

<u>Ovate Clubshell</u>- The Ovate Clubshell is found in riffles, runs, and shoals of small creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel occurred in the Tombigbee and Black Warrior, Alabama, Cahaba, and Coosa rivers and their tributaries within Mississippi and Alabama; however, the Coosa River and its tributaries are not listed as current locations for known surviving populations (USFWS 2019). Overall, the mussel is noted to be currently stable, with tributary populations being discovered in several Tombigbee River, Cahaba River, and Alabama River tributaries (USFWS 2019). Historically in the Coosa Basin the Ovate Clubshell was only found in the Etowah and Conasagua Rivers, not the Weiss Bypass/Terrapin Creek area (Williams and Hughes, 1998).

The Ovate Clubshell has only been found recently in the Tombigbee River, Cahaba River, and the Alabama River and is not found in the Terrapin Creek Basin. As such changes in operations may affect but are not likely to adversely affect the habitat, reproduction, or feeding of any suitable glochidia host fish or the Ovate Clubshell.

The difference between the proposed operation and the current operations is only 0.01 feet under the design storm. Therefore the proposed changes in operations may affect, but are not likely to adversely affect the Ovate Clubshell .

Southern Acornshell- If the Southern Acornshell is still extant, there are likely fewer than five occurrences, but in all likelihood, this species is extinct. The most recent records were from tributaries of the Coosa River (above Weiss Dam in Alabama) in the early 1970s, and the Cahaba in the 1930s (USFWS, 2004). The Cahaba River specimen is questionable, at best (Williams et al., 2008). The most recent documentation of museum specimens were taken in 1973 from the Conasauga River, Georgia, and Little Canoe Creek on the Etowah and St. Clair County line, Alabama (Williams et al., 2008). Potentially suitable habitat can still be found in several rivers and streams of the upper Coosa River drainage, but it has not been found in the Cahaba River drainage in several decades. Life history and host fish are unknown (USFWS, 2003).

The difference between the proposed operation and the current operations is only 0.01 feet under the design storm. Therefore the proposed changes in operations may affect, but are not likely to adversely affect the southern acornshell.

Southern Clubshell- The Southern Clubshell found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates which are orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

The difference between the proposed operation and the current operations is only 0.01 feet under the design storm. Therefore the proposed changes in operations may affect, but are not likely to adversely affect the southern clubshell.

Southern Pigtoe- The Southern Pigtoe is found in riffles, runs, and shoals of medium creeks to large rivers, with sand and gravel substrate (USFWS 2019). Historically, the mussel's range includes the Coosa River and tributaries in Alabama, Georgia, and Tennessee; currently, the mussel is found in tributaries which include: Big Canoe Creek, Terrapin Creek, Yellowleaf Creek, Hatchet Creek, and Cheaha Creek (USFWS 2019).

Since its listing, the more recently tributary populations of the mussel were discovered in Terrapin, Yellowleaf, and Hatchet creeks (USFWS 2019). All populations of the mussel are noted to be small and localized, with the most robust population found in Shoal Creek (USFWS 2019).

The difference between the proposed operation and the current operations is only 0.01 feet under the design storm. Therefore the proposed changes in operations may affect, but are not likely to adversely affect the southern pigtoe.

<u>Triangular Kidneyshell</u>*- According to USFWS's 2019 5-year review the triangular kidneyshell is stable and hasn't lost any populations since listing. A robust population exists in the Cahaba River. The Sipsey Fork population has stabilized after loss to the 2000 drought.*

Several darters have been identified as good glochidial host. It inhabits sand/gravel/ cobble shoals with moderate to strong currents in small to medium sized streams/rivers within the Mobile River Basin. Suitable habitats and water quality, free of excessive sedimentation and other pollutants, are required for a stable population.

The difference between the proposed operation and the current operations is only 0.01 feet under the design storm. Therefore the proposed changes in operations may affect, but are not likely to adversely affect the triangular kindneyshell.

<u>Upland Combshell</u>*- The upland combshell was historically known from the Black Warrior and Cahaba River drainages in Alabama, and the Coosa River drainage in Alabama, Georgia, and Tennessee. It was last collected in the Coosa River drainage in 1988. The last collection in the Cahaba River drainage was in 1973, and the most recent collection in the Black Warrior River drainage was in the early 1900's. Hurd (1974) cited one record in Tennessee in the Conasauga River but did not actually collect the species during surveys (USFWS, 1993; 1997; 2004; Mirarchi et al., 2004). In the Coosa River basin in Georgia, it is known historically from the Coosa, Etowah, and Oostanaula River drainages but has not been collected live recently (Williams and Hughes, 2001).*

It has been located in shoals in rivers and large streams, above the fall line, on stable substrates in moderate to swift currents (USFWS, 1997; 2000).

The difference between the proposed operation and the current operations is only 0.01 feet under the design storm. Therefore the proposed changes in operations may affect, but are not likely to adversely affect the upland combshell.

<u>unnamed tributary (34.205496, -85.230227)</u>

The confluence of unnamed tributary (34.205496, -85.230227) on the Coosa River sees only a 0.01 foot difference in water surface elevation under a design storm.

Figure 38: unnamed tributary (34.205496, -85.230227) at its confluence with the Etowah River, changes in the design flood inundation are shown in purple

Effects determination on listed species that may occur within unnamed tributary (34.205496, -85.230227) are provided below for the following species: Georgia Rockcress (T), Large-flowered Skullcap (T), Southern Clubshell (E), and Tennessee Yellow-eyed Grass (E).

Georgia Rockcress- Georgia rockcress is known from the Lower Gulf Coastal Plain, Upper Gulf Coastal Plain, Red Hills, Black Belt, Piedmont, and the Ridge and Valley Physiographic Provinces, generally occurring within regions underlain or otherwise influenced by sandstone, granite, and limestone. This species occurs on soils that are circumneutral to slightly basic (or buffered) and is primarily associated with high bluffs along major river courses, with drymesic to mesic soils of open, rocky, woodland and forested slopes, including shallow soil accumulations on rocky bluffs, ecotones of sloping rock outcrops, and sandy loam along eroding riverbanks.

The Georgia rockcress inhabits the bluffs along the Etowah River, not within the floodplain, therefore the proposed action may affect, but is not likely to adversely affect the Georgia rockcress.

Large-flowered Skullcap- Large-flowered skullcap (federally listed as threatened) is a terrestrial species that inhabits moist hardwood and hardwood-pine forests with few *shrubs. The range of this species includes the Ridge and Valley physiographic province of northwest Georgia and southeast Tennessee. Populations are concentrated on Lookout and Signal mountains in Tennessee and in Floyd County, GA. In Georgia, 53 populations are known, including 12 on conservation land (GADNR, 2008a).*

The large-flowered skullcaps inhabits upland hardwood and pine forests, as such the 0.01 foot difference in the proposed action and current operations may affect, but is not likely to adversely affect the large-flowered skullcap.

<u>Southern Clubshell</u>- The Southern Clubshell found in sand, gravel, or cobble shoals with moderate to strong currents in small to medium streams and rivers (USFWS 2019). The mussel is noted to be relatively common to abundant and more wide-spread since its time of listing, with robust populations found in Conasauga River, Sipsey River, Coosa River (Weiss bypass), Big Canoe Creek, Cahaba River, Bogue Chitto Creek, Bull Mountain Creek, and Buttahatchee River (USFWS 2019). The overall population is noted as improving, with an overall increase in distribution, range, geography, and population demographics increasing the mussel's ability to adapt to change and withstand stochastic or catastrophic events (USFWS 2019).

Usually found in highly oxygenated streams with sand and gravel substrate in shoals of large rivers to small streams; may be found in sand and gravel in the center of the stream or in sand along the margins of the stream (Doug Shelton, pers. obs. 1995; USFWS, 2000). Gravid females with mature glochidia have been collected in June and July. Glochidia are released in well-formed conglutinates orange or white in coloration. Fish hosts include Cyprinella venusta, Cyprinella callista, and Cyprinella trichroistia (USFWS, 2003).

The 0.01-foot difference from the proposed action and current operations may affect, but is not likely to adversely affect the Southern Clubshell.

<u>Tennessee Yellow-Eyed Grass</u>- The Tennessee yellow-eyed grass is a rare perennial monocot found in forested wetland, herbaceous wetland, riparian, and upland grassland/herbaceous habitat types. Seedlings of this plant need relatively well-lit moist soil to establish and grow to a mature plant (USFWS 2014c). At the time of listing, the Tennessee yellow-eyed grass was known from seven sites (five in Tennessee, one in Georgia, and one in Alabama). Since its listing, 16 additional populations of the species has been discovered, bringing the total extant populations per state to six in both Alabama and Georgia and seven in Tennessee (USFWS 2014c). Overall, the USFWS notes the status of the species as stable in their most recent 5-year review (USFWS 2014c).

The Tennessee yellow-eyed grass is noted to be a poor competitor, which quickly succumbs to natural ecological succession without periodic disturbances (USFWS 2014c).

The 0.01-foot difference from the proposed action and current operations may affect, but is not likely to adversely affect the Tennessee yellow-eyed gras

References

Boschung, H. T., and R. L. Mayden. 2004. Fishes of Alabama. Smithsonian Institution Press, Washington, D.C. 960 pp.

Boyd, R. S. (2015). Alabama Canebrake Pitcher Plant. Encyclopedia of Alabama. Auburn University Retrieved from <http://encyclopediaofalabama.org/article/h-3639>.

Clematis socialis Alabama Leatherflower. (2020). Retrieved September 29, 2020, from https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.137478/Clematis_socialis

Cyprinella caerulea Blue Shiner. (n.d.). Retrieved September 28, 2020, from https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.106038/Cyprinella_caerulea

Douglas, B. 2008. Harperella (Ptilimnium nodosum) 5-Year Review: Summary and Evaluation. Draft document for comment. U.S. Fish and Wildlife Service, West Virginia Field Office. Elkins, West Virginia. August 2008.

Haag, W.R., M.L. Warren, and M. Shillingsford. 1997. Identification of host fishes for Lampsiis altilis and Villosa vibex. Triannual Unionid Report, 12: 13.

Hurd, J.C. 1974. Systematics and zoogeography of the Unionacean mollusks of the Coosa River drainage of Alabama, Georgia, and Tennessee. University Microfilms International, Ann Arbor, Michigan. Auburn University. Ph.D. dissertation. 240 pp., 10 tables, 6 fig., + 63 maps.

Marshallia mohrii Mohr's Barbara's-buttons. (2020). Retrieved September 28, 2020, from https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.134344/Marshallia_mohrii

Ptilimnium nodosum Harperella. (n.d.). Retrieved September 28, 2020, from https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.161024/Ptilimnium_nodosum

Sarracenia oreophila Green Pitcherplant. (2020). Retrieved September 28, 2020, from https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.141421/Sarracenia_oreophila

U.S Fish and Wildlife Service. (2020, April 25). Kral's Water-Plantain. Retrieved September 30, 2020, from https://ecos.fws.gov/docs/five_year_review/doc6506.pdf

U.S. Fish and Wildlife Service (USFWS). (2009). Gray Bat (Myotis grisescens) 5-Year Review: Summary and Evaluation. Midwest Region Columbia, Missouri Ecological Services Field Office, Columbia, Missouri.

U.S. Fish and Wildlife Service (USFWS). 1992. Threatened status for two fish, the goldline darter Percina aurolineata and blue shiner Cyprinella caerulea. Federal Register 57(78):14786-14790.

U.S. Fish and Wildlife Service (USFWS). 1993. Endangered status for eight freshwater mussels and threatened status for three freshwater mussels in the Mobil River drainage. Final rule. Federal Register, 58(60): 14330-14340.

U.S. Fish and Wildlife Service (USFWS). 2000. Recovery plan for the Mobile River basin aquatic ecosystem. U.S. Fish and Wildlife Service, Southeast Region, Atlanta, Georgia. 128 pp.

U.S. Fish and Wildlife Service (USFWS). 2000. Recovery plan for the Mobile River basin aquatic ecosystem. U.S. Fish and Wildlife Service, Southeast Region, Atlanta, Georgia. 128 pp.

U.S. Fish and Wildlife Service (USFWS). 2000. Recovery plan for the Mobile River basin aquatic ecosystem. U.S. Fish and Wildlife Service, Southeast Region, Atlanta, Georgia. 128 pp.

U.S. Fish and Wildlife Service (USFWS). 2003. Endangered and Threatened Widlife and plants; proposed designation of critical habitat for three threatened mussels and eight endangered mussels in the Mobile River basin; proposed rule. Federal Register, 68(58): 14752-14832.

U.S. Fish and Wildlife Service (USFWS). 2003. Endangered and Threatened Widlife and plants; proposed designation of critical habitat for three threatened mussels and eight endangered mussels in the Mobile River basin; proposed rule. Federal Register, 68(58): 14752-14832.

U.S. Fish and Wildlife Service (USFWS). 2003. Endangered and Threatened Widlife and plants; proposed designation of critical habitat for three threatened mussels and eight endangered mussels in the Mobile River basin; proposed rule. Federal Register, 68(58): 14752-14832.

U.S. Fish and Wildlife Service (USFWS). 2004. Endangered and Threatened Widlife and plants; designation of critical habitat for three threatened mussels and eight endangered mussels in the Mobile River basin; final rule. Federal Register, 69(126): 40083-40171.

U.S. Fish and Wildlife Service (USFWS). 2007. Draft five-year review for Kral's Water-Plaintain (Sagittaria secundifolia). Alabama Ecological Services Field Office, Daphne, AL. 9 pp.

USFWS. (2014). Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Georgia Rockcress.

USFWS. (2012). Alabama Canebrake Pitcher-Plant (Sarracenia rubra ssp. alabamensis) 5-Year Review: Summary and Evaluation. Southeast Region Mississippi Ecological Services Field Office, Jackson, Mississippi.

USFWS. (2014). Five-Year Review: Summary and Evaluation: Etowah Darter, Cherokee Darter, Amber Darter.

USFWS. (2014a). Blue Shiner (Cyprinella caerulea) 5-Year Review: Summary and Evaluation. Southeast Region Mississippi Ecological Services Field Office, Jackson, Mississippi.

USFWS. (2014b). Recovery Plan for Georgia pigtoe mussel, Interrupted rocksnail, and Rough hornsnail. Southeast Region, Atlanta, Georgia.

USFWS. (2016). Cylindrical Lioplax, Flat Pebblesnail, Plicate Rocksnail, Painted Rocksnail, Round Rocksnail, Lacy Elimia 5-Year Review: Summary and Evaluation. Southeast Region Alabama Ecological Services Field Office, Daphne, Alabama.

USFWS. (2019a). Finelined Pocketbook, Orangenacre Mucket, Alabama Moccasinshell, Coosa Moccasinshell, Southern Clubshell, Dark Pigtoe, Southern Pigtoe, Ovate Clubshell, Triangular Kidneyshell 5-Year Review: Summary and Evaluation. South Atlantic – Gulf Region (Region 2) Alabama Ecological Services Field Office, Daphne, Alabama.

USFWS. (2019b). Tulotoma Snail 5-Year Review: Summary and Evaluation. South Atlantic – Gulf Region Alabama Ecological Services Field Office, Daphne, Alabama.

USFWS. (2020). Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Trispot Darter

USFWS. (2020). Five- Year Review: Summary and Evaluation: Interrupted Rocksnail

Williams, J.D. and M.H. Hughes. 1998. Freshwater mussels of selected reaches of the main channel rivers in the Coosa drainage of Georgia. U.S. Geological report to U.S. Army Corps of Engineers, Mobile District, Alabama. 21 pp.

Williams, J.D., A.E. Bogan, and J.T. Garner. 2008. Freshwater Mussels of Alabama & the Mobile Basin in Georgia, Mississippi & Tennessee. University of Alabama Press: Tuscaloosa, Alabama. 908 pp.

Final Species Effect Determination			
Scientific name	***Common name***	***Federal status***	***Determination***
Myotis grisescens	*Gray Bat*	*E*	*MA-NLAA*
Myotis sodalis	*Indiana Bat*	*E*	*MA-NLAA*
Myotis septentrionalis	*Northern Long-Eared Bat*	*T*	*MA-NLAA*
Picoides borealis	*Red-Cockaded Woodpecker*	*E*	*MA-NLAA*
Mycteria americana	*Wood Stork*	*T*	*MA-NLAA*
Clemmys muhlenbergii	*Bog Turtle*	*SAT*	*NE*
Sternotherus depressus	*Flattened Musk Turtle*	*T*	*NE*
Necturus alabamensis	*Black Warrior (=sipsey Fork) Waterdog*	*E*	*NE*
Percina antesella	*Amber Darter*	*E*	*MA-NLAA*
Cyprinella caerulea	*Blue Shiner*	*T*	*MA-NLAA*
Notropis cahabae	*Cahaba Shiner*	*E*	*NE*
Etheostoma scotti	*Cherokee Darter*	*T*	*MA-NLAA*
Percina jenkinsi	*Conasauga Logperch*	*E*	*NE*
Etheostoma etowahae	Etowah Darter	*E*	*MA-NLAA*
Percina aurolineata	*Goldline Darter*	*T*	*NE*
Cottus paulus	*Pygmy Sculpin*	*T*	*NE*
Etheostoma phytophilum	*Rush Darter*	*E*	*NE*
Percina tanasi	*Snail Darter*	*T*	*NE*
Etheostoma trisella	*Trispot Darter*	*T*	*MA-NLAA*
Etheostoma chermocki	*Vermilion Darter*	*E*	*NE*
Medionidus acutissimus	Alabama Moccasinshell	*T*	*MA-NLAA*
Medionidus parvulus	Coosa Moccasinshell	*E*	*MA-NLAA*
Villosa trabalis	*Cumberland Bean*	*E*	*NE*
Pleurobema furvum	*Dark Pigtoe*	*E*	*NE*

Lampsilis altilis	*Fine-lined Pocketbook*	*T*	*MA-NLAA*
Pleurobema hanleyianum	Georgia Pigtoe	*E*	*MA-NLAA*
Lampsilis perovalis	*Orangenacre Mucket*	*T*	*NE*
Pleurobema perovatum	Ovate Clubshell	*E*	*MA-NLAA*
Epioblasma othcaloogensis	Southern Acornshell	*E*	*MA-NLAA*
Pleurobema decisum	Southern Clubshell	*E*	*MA-NLAA*
Pleurobema georgianum	Southern Pigtoe	*E*	*MA-NLAA*
Ptychobranchus greenii	Triangular Kidneyshell	*E*	*MA-NLAA*
Epioblasma metastriata	Upland Combshell	*E*	*MA-NLAA*
Lioplax cyclostomaformis	*Cylindrical Lioplax (snail)*	*E*	*MA-NLAA*
Leptoxis foremani	*Interrupted (=georgia) Rocksnail*	*E*	*MA-NLAA*
Elimia crenatella	*Lacy Elimia (snail)*	*T*	*MA-NLAA*
Leptoxis taeniata	Painted Rocksnail	*T*	*MA-NLAA*
Leptoxis plicata	*Plicate Rocksnail*	*E*	*NE*
Pleurocera foremani	Rough Hornsnail	*E*	*MA-NLAA*
Tulotoma magnifica	Tulotoma Snail	*T*	*MA-NLAA*
Sarracenia rubra ssp. alabamensis	*Alabama Canebrake Pitcher-Plant*	*E*	*MA-NLAA*
Clematis socialis	*Alabama Leather Flower*	*E*	*MA-NLAA*
Spigelia gentianoides	*Gentian Pinkroot*	*E*	*NE*
Arabis georgiana	*Georgia Rockcress*	*T*	*MA-NLAA*
Sarracenia oreophila	*Green Pitcher-Plant*	*E*	*MA-NLAA*
Ptilimnium nodosum	*Harperella*	*E*	*MA-NLAA*
Sagittaria secundifolia	*Kral's Water-Plantain*	*T*	*MA-NLAA*
Scutellaria montana	*Large-Flowered Skullcap*	*T*	*MA-NLAA*
Rhus michauxii	*Michaux's Sumac*	*E*	*NE*
Marshallia mohrii	*Mohr's Barbara's Buttons*	*T*	*MA-NLAA*
Isotria medeoloides	*Small Whorled Pogonia*	*T*	*NE*
Helonias bullata	*Swamp Pink*	*T*	*NE*
Pityopsis ruthii	*Ruth's Golden Aster*	*E*	*NE*

Xyris tennesseensis	*Tennessee Yellow-Eyed Grass*	*E*	*MA-NLAA*
Spiraea virginiana	*Virginia Spiraea*	*T*	*NE*
Platanthera integrilabia	White Fringeless Orchid	*T*	*MA-NLAA*
Helianthus verticillatus	*Whorled Sunflower*	*E*	*MA-NLAA*

E- Endangered
T- Threatened
SAT- Similarity of Appearance Threatened

NE- No Effect
MA-NLAA – May affect, not likely to adversely affect
MA-LAA- May affect, likely to adversely affect

SPECIES EFFCTS BY TRIBUTARY

TRIBUTARY	Species	Determination
MUD CREEK-SPRING CREEK	Grey Bat (E)	MA- NLAA
MUD CREEK-SPRING CREEK	Indiana Bat (E)	MA- NLAA
MUD CREEK-SPRING CREEK	Northern Long-Eared Bat (T)	MA- NLAA
MUD CREEK-SPRING CREEK	Southern Clubshell (E)	MA- NLAA
MUD CREEK-SPRING CREEK	Alabama Leather Flower (E)	MA- NLAA
MUD CREEK-SPRING CREEK	Green Pitcher Plant (E)	MA- NLAA
MUD CREEK-SPRING CREEK	Harperella (E)	MA- NLAA
MUD CREEK-SPRING CREEK	Kral's Water Plantain (T)	MA- NLAA
MUD CREEK-SPRING CREEK	Mohr's Barbara's Buttons (T)	MA- NLAA
LOWER LITTLE RIVER	Gray Bat (E)	MA- NLAA
LOWER LITTLE RIVER	Indiana Bat (E)	MA- NLAA
LOWER LITTLE RIVER	Northern Long-Eared Bat (T)-	MA- NLAA
LOWER LITTLE RIVER	Southern Clubshell (E)	MA- NLAA
LOWER LITTLE RIVER	Blue Shiner (T)	MA- NLAA
LOWER LITTLE RIVER	Green Pitcher Plant (E)	MA- NLAA
LOWER LITTLE RIVER	Harperella (E)	MA- NLAA
LOWER LITTLE RIVER	Kral's Water Plantain (T)	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Gray Bat (E)	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Indiana Bat (E)	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Northern Long-Eared Bat (T),	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Finelined Pocketbook (T)	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Ovate Clubshell (E)	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Southern Clubshell (E)	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Southern Pigtoe (E)	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Upland Combshell (E)	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Trispot Darter (T)	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Alabama Leather Flower (E)	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Green Pitcher Plant (E)	MA- NLAA
BALLPLAY CREEK-COOSA RIVER	Mohr's Barbara's Buttons (T)	MA- NLAA

WALNUT CREEK	Indiana Bat	MA- NLAA
WALNUT CREEK	Red-cockaded Woodpecker (E)	MA- NLAA
WALNUT CREEK	Wood Stork (T)	MA- NLAA
WALNUT CREEK	Rough Hornsnail (E)	MA- NLAA
WALNUT CREEK	Southern Clubshell (E)	MA- NLAA
WALNUT CREEK	Alabama Canebrake Pitcher Plant (E)	MA- NLAA
CARGLE CREEK	Indiana Bat (E)	MA- NLAA
CARGLE CREEK	Red-cockaded Woodpecker (E)	MA- NLAA
CARGLE CREEK	Wood Stork (T)	MA- NLAA
CARGLE CREEK	Rough Hornsnail (E)	MA- NLAA
CARGLE CREEK	Southern Clubshell (E)	MA- NLAA
CARGLE CREEK	Alabama Canebrake Pitcher Plant (E)	MA- NLAA
WEOGUFKA CREEK	Indiana Bat (E)	MA- NLAA
WEOGUFKA CREEK	Rough Hornsnail (E)	MA- NLAA
WEOGUFKA CREEK	Tulotoma Snail (T)	MA- NLAA
WEOGUFKA CREEK	Finelined Pocketbook (T)	MA- NLAA
WEOGUFKA CREEK	Ovate Clubshell (E)	MA- NLAA
WEOGUFKA CREEK	Southern Clubshell (E)	MA- NLAA
WEOGUFKA CREEK	Southern Pigtoe (E)	MA- NLAA
WEOGUFKA CREEK	Blue Shiner (T)	MA- NLAA
WEOGUFKA CREEK	White Fringeless Orchid (T)	MA- NLAA
CHESTNUT CREEK	Wood Stork (T)	MA- NLAA
CHESTNUT CREEK	Finelined Pocketbook (T)	MA- NLAA
CHESTNUT CREEK	Southern Clubshell (E)	MA- NLAA
CHESTNUT CREEK	Alabama Canebrake Pitcher Plant (E)	MA- NLAA
WEOKA CREEK	Wood Stork (T)	MA- NLAA

WEOKA CREEK	Tulotoma Snail (T)	MA- NLAA
WEOKA CREEK	Southern Clubshell (E)	MA- NLAA
LOWER TERRAPIN CREEK	Gray Bat (E)	MA- NLAA
LOWER TERRAPIN CREEK	Indiana Bat (E)	MA- NLAA
LOWER TERRAPIN CREEK	Northern Long-Eared Bat (T)	MA- NLAA
LOWER TERRAPIN CREEK	Coosa Moccasinshell (E)	MA- NLAA
LOWER TERRAPIN CREEK	Finelined Pocketbook (T)	MA- NLAA
LOWER TERRAPIN CREEK	Georgia Pigtoe (E)	MA- NLAA
LOWER TERRAPIN CREEK	Ovate Clubshell (E)	MA- NLAA
LOWER TERRAPIN CREEK	Southern Acornshell (E)	MA- NLAA
LOWER TERRAPIN CREEK	Southern Clubshell (E)	MA- NLAA
LOWER TERRAPIN CREEK	Southern Pigtoe (E)	MA- NLAA
LOWER TERRAPIN CREEK	Triangular Kidneyshell (E)	MA- NLAA
LOWER TERRAPIN CREEK	Upland Combshell (E)	MA- NLAA
LOWER TERRAPIN CREEK	Alabama Leather Flower (E)	MA- NLAA
LOWER TERRAPIN CREEK	Green Pitcher Plant (E)	MA- NLAA
LOWER TERRAPIN CREEK	Mohr's Barbara's Buttons (T)	MA- NLAA
WEISS BYPASS	Gray Bat (E)	MA- NLAA
WEISS BYPASS	Indiana Bat (E)	MA- NLAA
WEISS BYPASS	Northern Long-Eared Bat (T)	MA- NLAA
WEISS BYPASS	Southern Pigtoe (E)	MA- NLAA
WEISS BYPASS	Coosa Moccasinshell (E)	MA- NLAA
WEISS BYPASS	Finelined Pocketbook (T)	MA- NLAA
WEISS BYPASS	Georgia Pigtoe (E)	MA- NLAA
WEISS BYPASS	Ovate Clubshell (E)	MA- NLAA
WEISS BYPASS	Southern Clubshell (E)	MA- NLAA
WEISS BYPASS	Southern Pigtoe (E)	MA- NLAA
WEISS BYPASS	Triangular Kidneyshell (E)	MA- NLAA
WEISS BYPASS	Interrupted Rocksnail (E)	MA- NLAA
LITTLE CANOE CREEK	Coosa Moccasinshell (E)	MA- NLAA

LITTLE CANOE CREEK	Finelined Pocketbook (T)	MA- NLAA
LITTLE CANOE CREEK	Ovate Clubshell (E)	MA- NLAA
LITTLE CANOE CREEK	Southern Clubshell (E)	MA- NLAA
LITTLE CANOE CREEK	Southern Pigtoe (E)	MA- NLAA
LITTLE CANOE CREEK	Triangular Kidneyshell (E)	MA- NLAA
BIG CANOE CREEK-COOSA RIVER	Gray Bat (E),	MA- NLAA
BIG CANOE CREEK-COOSA RIVER	Indiana Bat (E),	MA- NLAA
BIG CANOE CREEK-COOSA RIVER	Northern Long-Eared Bat (T),	MA- NLAA
BIG CANOE CREEK-COOSA RIVER	Southern Clubshell (E),	MA- NLAA
BIG CANOE CREEK-COOSA RIVER	Alabama Leather Flower (E),	MA- NLAA
BIG CANOE CREEK-COOSA RIVER	Green Pitcher Plant (E)	MA- NLAA
BIG CANOE CREEK	Finelined Pocketbook (T)	MA- NLAA
BIG CANOE CREEK	Ovate Clubshell (E)	MA- NLAA
BIG CANOE CREEK	Southern Clubshell (E)	MA- NLAA
BIG CANOE CREEK	Southern Pigtoe (E)	MA- NLAA
BIG CANOE CREEK	Triangular Kidneyshell (E)	MA- NLAA
BIG CANOE CREEK (LOWER)	Finelined Pocketbook (T),	MA- NLAA
BIG CANOE CREEK (LOWER)	Coosa Moccasinshell (E),	MA- NLAA
BIG CANOE CREEK (LOWER)	Ovate Clubshell (E),	MA- NLAA
BIG CANOE CREEK (LOWER)	Southern Clubshell (E),	MA- NLAA
BIG CANOE CREEK (LOWER)	Southern Pigtoe (E),	MA- NLAA
BIG CANOE CREEK (LOWER)	Triangular Kidneyshell (E);	MA- NLAA

OHATCHEE CREEK-TALLASSEEHATCHEE CREEK	Gray Bat (E),	MA- NLAA
OHATCHEE CREEK-TALLASSEEHATCHEE CREEK	Indiana Bat (E),	MA- NLAA
OHATCHEE CREEK-TALLASSEEHATCHEE CREEK	Northern Long-Eared Bat (T),	MA- NLAA
OHATCHEE CREEK-TALLASSEEHATCHEE CREEK	Painted Rocksnail (T),	MA- NLAA
OHATCHEE CREEK-TALLASSEEHATCHEE CREEK	Southern Clubshell (E),	MA- NLAA
OHATCHEE CREEK-TALLASSEEHATCHEE CREEK	Mohr's Barbara's Buttons (T),	MA- NLAA
OHATCHEE CREEK-TALLASSEEHATCHEE CREEK	Tennessee Yellow-Eyed Grass (E),	MA- NLAA
OHATCHEE CREEK-TALLASSEEHATCHEE CREEK	White Fringeless Orchid (T)	MA- NLAA
CHOCCOLOCCO CREEK (LOWER)	Blue Shiner (T),	MA- NLAA
CHOCCOLOCCO CREEK (LOWER)	Cylindrical Lioplax (E),	MA- NLAA
CHOCCOLOCCO CREEK (LOWER)	Painted Rocksnail (T),	MA- NLAA
CHOCCOLOCCO CREEK (LOWER)	Tulotoma Snail (T),	MA- NLAA
CHOCCOLOCCO CREEK (LOWER)	Finelined Pocketbook (T),	MA- NLAA
CHOCCOLOCCO CREEK (LOWER)	Southern Clubshell (E)	MA- NLAA
CHOCCOLOCCO CREEK (LOWER)	Southern Pigtoe (E);	MA- NLAA
CHOCCOLOCCO CREEK	Blue Shiner (T),	MA- NLAA
CHOCCOLOCCO CREEK	Painted Rocksnail (T),	MA- NLAA
CHOCCOLOCCO CREEK	Finelined Pocketbook (T)	MA- NLAA
CHOCCOLOCCO CREEK	Southern Clubshell (E)	MA- NLAA
CHOCCOLOCCO CREEK	Southern Pigtoe (E);	MA- NLAA
CHEAHA CREEK (LOWER)	Lacy Elimia (T),	MA- NLAA
CHEAHA CREEK (LOWER)	Coosa Moccasinshell (E),	MA- NLAA

CHEAHA CREEK (LOWER)	Finelined Pocketbook (T),	MA- NLAA
CHEAHA CREEK (LOWER)	Southern Clubshell (E),	MA- NLAA
CHEAHA CREEK (LOWER)	Southern Pigtoe (E),	
CHEAHA CREEK (LOWER)	Triangular Kidneyshell (E)	MA- NLAA
KELLY CREEK (LOWER)	Tulotoma Snail (T)	MA- NLAA
KELLY CREEK (LOWER)	Finelined Pocketbook (T),	MA- NLAA
KELLY CREEK (LOWER)	Coosa Moccasinshell (E),	MA- NLAA
KELLY CREEK (LOWER)	Ovate Clubshell (E),	MA- NLAA
KELLY CREEK (LOWER)	Southern Clubshell (E),	MA- NLAA
KELLY CREEK (LOWER)	Southern Pigtoe (E),	MA- NLAA
KELLY CREEK (LOWER)	Triangular Kidneyshell (E);	MA- NLAA
YELLOWLEAF CREEK	Cylindrical Lioplax (E)	MA- NLAA
YELLOWLEAF CREEK	Rough Hornsnail (E)	MA- NLAA
YELLOWLEAF CREEK	Tulotoma Snail (T)	MA- NLAA
YELLOWLEAF CREEK	Coosa Moccasinshell (E)	MA- NLAA
YELLOWLEAF CREEK	Finelined Pocketbook (T)	MA- NLAA
YELLOWLEAF CREEK	Southern Clubshell (E)	MA- NLAA
YELLOWLEAF CREEK	Southern Pigtoe (E)	MA- NLAA
YELLOWLEAF CREEK	Triangular Kidneyshell (E)	MA- NLAA
LOWER HATCHET CREEK	Indiana Bat (E)	MA- NLAA
LOWER HATCHET CREEK	Red-cockaded Woodpecker (E)	MA- NLAA
LOWER HATCHET CREEK	Tulotoma Snail (T)	MA- NLAA
LOWER HATCHET CREEK	Coosa Moccasinshell (E)	MA- NLAA
LOWER HATCHET CREEK	Finelined Pocketbook (T)	MA- NLAA
LOWER HATCHET CREEK	Georgia Pigtoe (E)	MA- NLAA
LOWER HATCHET CREEK	Ovate Clubshell (E)	MA- NLAA
LOWER HATCHET CREEK	Southern Clubshell (E)	MA- NLAA
LOWER HATCHET CREEK	Southern Pigtoe (E)	MA- NLAA
LOWER HATCHET CREEK	Triangular Kidneyshell (E)	MA- NLAA
LOWER HATCHET CREEK	Kral's Water Plantain (T)	MA- NLAA

LOWER HATCHET CREEK	White Fringeless Orchid (T)	MA- NLAA
MIDDLE HATCHET CREEK	Indiana Bat (E)	MA- NLAA
MIDDLE HATCHET CREEK	Tulotoma Snail (T)	MA- NLAA
MIDDLE HATCHET CREEK	Coosa Moccasinshell (E)	MA- NLAA
MIDDLE HATCHET CREEK	Finelined Pocketbook (T)	MA- NLAA
MIDDLE HATCHET CREEK	Georgia Pigtoe (E)	MA- NLAA
MIDDLE HATCHET CREEK	Ovate Clubshell (E)	MA- NLAA
MIDDLE HATCHET CREEK	Southern Clubshell (E)	MA- NLAA
MIDDLE HATCHET CREEK	Southern Pigtoe (E)	MA- NLAA
MIDDLE HATCHET CREEK	Triangular Kidneyshell (E)	MA- NLAA
MIDDLE HATCHET CREEK	Kral's Water Plantain (T)	MA- NLAA
MIDDLE HATCHET CREEK	White Fringeless Orchid (T)	MA- NLAA
BUTLER CREEK	Cherokee Darter (T)	MA- NLAA
CLARK CREEK	Cherokee Darter (T)	MA- NLAA
ETOWAH RIVER-LAKE ALLATOONA	Cherokee Darter (T)	MA- NLAA
KNOX CREEK,	Cherokee Darter (T)	MA- NLAA
DOWNING CREEK,	Cherokee Darter (T)	MA- NLAA
UNNAMED TRIBUTARIES OF THE ETOWAH MAINSTEM (LAT, LON; 34.19367, -84.54881; 34.18568, -84.55276) USING DOWNING CREEK	Cherokee Darter (T)	MA- NLAA
SWEETWATER CREEK	Cherokee Darter (T)	MA- NLAA

HICKORY LOG CREEK	Amber Darter (E),	MA- NLAA
HICKORY LOG CREEK	Cherokee Darter (T)	
HICKORY LOG CREEK	Frecklebelly Madtom (proposed T)	MA- NLAA
JUG CREEK-ETOWAH RIVER	Amber Darter (E),	MA- NLAA
JUG CREEK-ETOWAH RIVER	Cherokee Darter (T),	MA- NLAA
JUG CREEK-ETOWAH RIVER	Proposed CH for Frecklebelly Madtom (proposed T)	MA- NLAA
UNNAMED TRIBUTARIES OF THE ETOWAH MAINSTEM AND RESERVOIR (LAT, LON; 34.23112, -84.540136)	Amber Darter (E),	MA- NLAA
UNNAMED TRIBUTARIES OF THE ETOWAH MAINSTEM AND RESERVOIR (LAT, LON; 34.23112, -84.540136)	Cherokee Darter (T),	MA- NLAA
UNNAMED TRIBUTARIES OF THE ETOWAH MAINSTEM AND RESERVOIR (LAT, LON; 34.23112, -84.540136)	Proposed CH for Frecklebelly Madtom (proposed T)	MA- NLAA
LAKE ALLATOONA	Cherokee Darter (T)	MA- NLAA
LAKE ALLATOONA	Northern Myotis (T)	MA- NLAA
ILLINOIS CREEK	Cherokee Darter (T)	MA- NLAA
ILLINOIS CREEK	Northern Myotis (T)	MA- NLAA
KELLOGG CREEK	Cherokee Darter (T)	MA- NLAA
KELLOGG CREEK	Northern Myotis (T)	MA- NLAA
UNNAMED TRIBUTARY (34.116245, -84.617808)	Cherokee Darter (T)	MA- NLAA

UNNAMED TRIBUTARY (34.116245, -84.617808)	Northern Myotis (T)	MA- NLAA
ROSE CREEK (LITTLE RIVER-ALLATOONA)	Cherokee Darter (T)	MA- NLAA
LOWER SHOAL CREEK	Amber Darter (E)	MA- NLAA
STAMP CREEK	Cherokee Darter (T)	MA- NLAA
STAMP CREEK	Etowah Darter (E)	MA- NLAA
STAMP CREEK	Northern Myotis (T)	MA- NLAA
STAMP CREEK	White Fringeless Orchid	MA- NLAA
ALLATOONA CREEK	Cherokee Darter (T)	MA- NLAA
UNNAMED TRIBUTARY (34.042625, -84.7038220)	Cherokee Darter (T)	MA- NLAA
OOSTANAULA RIVER	CH Finelined Pocketbook (T)	MA- NLAA
OOSTANAULA RIVER	CH Alabama moccasinshell (T)	MA- NLAA
OOSTANAULA RIVER	CH Coosa moccasinshell (E)	MA- NLAA
OOSTANAULA RIVER	CH Interrupted rocksnail (E)	MA- NLAA
OOSTANAULA RIVER	CH Ovate clubshell (E)	MA- NLAA
OOSTANAULA RIVER	Southern acornshell (E)	MA- NLAA
OOSTANAULA RIVER	Southern clubshell (E)	MA- NLAA
OOSTANAULA RIVER	Southern pigtoe (E)	MA- NLAA
OOSTANAULA RIVER	Triangular kidneyshell (E)	MA- NLAA
OOSTANAULA RIVER	Upland combshell (E)	MA- NLAA
UNNAMED TRIBUTARY (34.205496, -85.230227) WEBB CREEK-COOSA RIVER	Georgia Rockcress (T; within critical habitat)	MA- NLAA

UNNAMED TRIBUTARY (34.205496, -85.230227) WEBB CREEK-COOSA RIVER	Large-flowered Skullcap (T)	MA- NLAA
UNNAMED TRIBUTARY (34.205496, -85.230227) WEBB CREEK-COOSA RIVER	Southern Clubshell (E)	MA- NLAA
UNNAMED TRIBUTARY (34.205496, -85.230227) WEBB CREEK-COOSA RIVER	Tennessee Yellow-eyed Grass (E)	MA- NLAA

NE- NO EFFECT
MA-NLAA – MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT
MA-LAA- MAY AFFECT, LIKELY TO ADVERSELY AFFECT

Critical Habitat Effects Determination		
Critical Habitat	**Species**	**Determination**
Unit 1: Mud Creek Cherokee County, AL	whorled sunflower	not likely to adversely modify or destroy
Unit GP 2: Terrapin Creek and Coosa River Cherokee County, AL	Georgia pigtoe	not likely to adversely modify or destroy
Unit GP 3: Hatchet Creek Coosa and Clay Counties, AL	Georgia pigtoe	not likely to adversely modify or destroy
Unit IR 1: Coosa River Cherokee County, AL	interrupted rocksnail	not likely to adversely modify or destroy
Unit IR 2: Oostanaula River Gordon and Floyd Counties, GA	interrupted rocksnail	not likely to adversely modify or destroy
Unit IR 3: Lower Coosa River Elmore County, AL	interrupted rocksnail	not likely to adversely modify or destroy
Unit RH 1: Lower Coosa River Elmore County, AL	rough hornsnail	not likely to adversely modify or destroy
Unit RH 2: Yellowleaf Creek Shelby County, AL	rough hornsnail	not likely to adversely modify or destroy
Unit 12: Fort Toulouse State Park Elmore County, AL	Georgia rockcress	not likely to adversely modify or destroy
Unit 15: Blacks Bluff Preserve Floyd County, GA	Georgia rockcress	not likely to adversely modify or destroy
Unit 16:	Georgia rockcress	not likely to adversely modify or destroy

Whitmore Bluff Floyd County, GA		
Unit 18: Coosa River (old River channel) and tributary Cherokee, Calhoun Cleburne Counties, AL	southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	not likely to adversely modify or destroy
Unit 19: Hatchet Creek Coosa, Clay Counties, AL	southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	not likely to adversely modify or destroy
Unit 21: Kelly Creek and tributary Shelby, St. Clair Counties, AL	southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	not likely to adversely modify or destroy
Unit 23: Yellowleaf Creek and tributary Shelby County, AL	triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	not likely to adversely modify or destroy
Unit 24: Big Canoe Creek St. Clair County, AL	southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	not likely to adversely modify or destroy
Unit 25: Oostanaula River/Coosawattee River/Conasauga River/Holly Creek	southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Alabama	not likely to adversely modify or destroy

Floyd, Gordon, Whitfield, Murray Counties, GA and Bradley and Polk Counties, TN	moccasinshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	
Unit 26: Lower Coosa River Elmore County, AL	southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Alabama moccasinshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	not likely to adversely modify or destroy

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1208-B Main Street
Daphne, Alabama 36526

NOV 0 6 2020

IN REPLY REFER TO:
2020-I-0277

Jennifer L. Jacobson
Chief, Planning and Environmental Division
U.S. Army Corps of Engineers, Mobile District
P.O. Box 2288
Mobile, AL 36628-0001

Dear Ms. Jacobson:

This letter responds to your amended Biological Assessment (BA), received on May 11, 2020, and BA addendum received on October 14, 2020 (received via email October 5, 2020), and your request for concurrence that all effects of the Tentatively Selected Plan (TSP), Allatoona Lake Water Supply Storage Reallocation Study and Updates to Weiss and Logan Martin Reservoirs Water Control Manuals, will have either "no effect" or "may affect, but not likely to adversely affect" endangered or threatened species and critical habitat. We have reviewed the information and provide the following comments in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. § 1531 et seq.).

Consultation History

December 11, 2019: Biological Assessment (BA) received from USACE.

January 9 – April 2, 2020: Calls and emails among U.S. Army Corps of Engineers (USACE), Alabama and Georgia U.S. Fish and Wildlife Service (Service), and Tetra Tech to discuss the need to include additional species and designated critical habitat in their analysis and determinations.

May 11, 2020: Amended BA received from USACE.

July 9, 2020: Response sent to Corps requesting additional information on Description and justification on the Region of Influence (ROI) selected for the Tentatively Selected Plan (TSP), Analysis of how discretion of water balance at Carters Dam and Carters Reregulation Dam will be impacted by the Allatoona Lake storage reallocation, changes in hydropower operations at Allatoona Dam due to the TSP, changes in pool elevation and reservoir footprint at Allatoona Lake due to the TSP, and impacts analysis on threatened and endangered species locations within the ROI, specifically in the tributaries.

PHONE: 251-441-5181 FAX: 251-441-6222

July 15, 2020: Teleconference between USACE and the Service (Alabama and Georgia Field Offices) to discuss Service's request for additional information, specifically if there are expected changes are Carters operations and general species locations that are outside of designated critical habitat. An action item for the Service was to provide a list of tributaries where further analysis is requested.

July 29, 2020: Via email, the Service provided USACE a species list by 12 digit HUC for those tributaries which the Service requested more evaluation.

October 14, 2020: USACE provided a BA Addendum received on (received via email October 5, 2020) addressing the Service's additional information request.
November 2, 2020: Via email, the Service received an updated effects determination table for the BA from the USACE compiling the Amended BA and BA Addendum determinations.

Proposed Action

It is our understanding that the Proposed Action, or TSP, is identified as Alternative 11 in the Draft FR/SEIS. The TSP involves Allatoona Lake storage reallocation to enable withdrawals up to 94 million gallons per day (mgd) from a combination of flood storage and conservation storage, using USACE current storage accounting methodology, and modified flood operations at the Alabama Power Company (APC) Weiss and Logan Martin projects. The Region of Influence (ROI) from this action generally, includes the Etowah River at its confluence with Hickory Log Creek at Canton, Georgia, downstream to its confluence with the Oostanaula River at Rome, Georgia, including the USACE's Allatoona Dam and Lake; and downstream in the Coosa River to its confluence with the Tallapoosa River near Montgomery, Alabama, including all of its tributaries. An overview of the proposed changes to water supply storage at Allatoona Lake and proposed changes to flood operations at APC Weiss and Logan Martin projects and details on effects regarding water quantity (such as lake levels) and water quality are provided in BA. You have stated that any current conservation measures that are being used in the system (fish spawning practices at Allatoona Dam and Lake, measures to promote fish passage through Claiborne Lock and Dam, etc.) are expected to continue, but will not affect protected species in the ROI with respect to the proposed action.

Threatened and Endangered Species and Critical Habitat

You have made the following determinations for listed species and critical habitat:

Final Species Effect Determination

Scientific name	Common name	Federal status	Determination
Myotis grisescens	Gray Bat	E	MA-NLAA
Myotis sodalis	Indiana Bat	E	MA-NLAA
Myotis septentrionalis	Northern Long-Eared Bat	T	MA-NLAA
Picoides borealis	Red-Cockaded Woodpecker	E	MA-NLAA

Mycteria americana	Wood Stork	T	MA-NLAA
Clemmys muhlenbergii	Bog Turtle	SAT	NE
Sternotherus depressus	Flattened Musk Turtle	T	NE
Necturus alabamensis	Black Warrior (=sipsey Fork) Waterdog	E	NE
Percina antesella	Amber Darter	E	MA-NLAA
Cyprinella caerulea	Blue Shiner	T	MA-NLAA
Notropis cahabae	Cahaba Shiner	E	NE
Etheostoma scotti	Cherokee Darter	T	MA-NLAA
Percina jenkinsi	Conasauga Logperch	E	NE
Etheostoma etowahae	Etowah Darter	E	MA-NLAA
Percina aurolineata	Goldline Darter	T	NE
Cottus paulus	Pygmy Sculpin	T	NE
Etheostoma phytophilum	Rush Darter	E	NE
Percina tanasi	Snail Darter	T	NE
Etheostoma trisella	Trispot Darter	T	MA-NLAA
Etheostoma chermocki	Vermilion Darter	E	NE
Medionidus acutissimus	Alabama Moccasinshell	T	MA-NLAA
Medionidus parvulus	Coosa Moccasinshell	E	MA-NLAA
Villosa trabalis	Cumberland Bean	E	NE
Pleurobema furvum	Dark Pigtoe	E	NE
Lampsilis altilis	Fine-lined Pocketbook	T	MA-NLAA
Pleurobema hanleyianum	Georgia Pigtoe	E	MA-NLAA
Lampsilis perovalis	Orangenacre Mucket	T	NE
Pleurobema perovatum	Ovate Clubshell	E	MA-NLAA
Epioblasma othcaloogensis	Southern Acornshell	E	MA-NLAA
Pleurobema decisum	Southern Clubshell	E	MA-NLAA
Pleurobema georgianum	Southern Pigtoe	E	MA-NLAA
Ptychobranchus greenii	Triangular Kidneyshell	E	MA-NLAA
Epioblasma metastriata	Upland Combshell	E	MA-NLAA
Lioplax cyclostomaformis	Cylindrical Lioplax (snail)	E	MA-NLAA
Leptoxis foremani	Interrupted (=georgia) Rocksnail	E	MA-NLAA
Elimia crenatella	Lacy Elimia (snail)	T	MA-NLAA
Leptoxis taeniata	Painted Rocksnail	T	MA-NLAA
Leptoxis plicata	Plicate Rocksnail	E	NE

Pleurocera foremani	Rough Hornsnail	E	MA-NLAA
Tulotoma magnifica	Tulotoma Snail	T	MA-NLAA
Sarracenia rubra ssp. alabamensis	Alabama Canebrake Pitcher-Plant	E	MA-NLAA
Clematis socialis	Alabama Leather Flower	E	MA-NLAA
Spigelia gentianoides	Gentian Pinkroot	E	NE
Arabis georgiana	Georgia Rockcress	T	MA-NLAA
Sarracenia oreophila	Green Pitcher-Plant	E	MA-NLAA
Ptilimnium nodosum	Harperella	E	MA-NLAA
Sagittaria secundifolia	Kral's Water-Plantain	T	MA-NLAA
Scutellaria montana	Large-Flowered Skullcap	T	MA-NLAA
Rhus michauxii	Michaux's Sumac	E	NE
Marshallia mohrii	Mohr's Barbara's Buttons	T	MA-NLAA
Isotria medeoloides	Small Whorled Pogonia	T	NE
Helonias bullata	Swamp Pink	T	NE
Pityopsis ruthii	Ruth's Golden Aster	E	NE
Xyris tennesseensis	Tennessee Yellow-Eyed Grass	E	MA-NLAA
Spiraea virginiana	Virginia Spiraea	T	NE
Platanthera integrilabia	White Fringeless Orchid	T	MA-NLAA
Helianthus verticillatus	Whorled Sunflower	E	MA-NLAA

E- Endangered
T- Threatened
SAT- Similarity of Appearance Threatened
NE- No Effect
MA-NLAA – May affect, not likely to adversely affect
MA-LAA- May affect, likely to adversely affect

Table 1. Final species determinations provided by USACE.

Critical Habitat Effects Determination		
Critical Habitat	**Species**	**Determination**
Unit 1: Mud Creek	whorled sunflower	not likely to adversely modify or destroy

Cherokee County, AL (79 FR 50989)		
Unit GP 2: Terrapin Creek and Coosa River Cherokee County, AL (75 FR 67512)	Georgia pigtoe	not likely to adversely modify or destroy
Unit GP 3: Hatchet Creek Coosa and Clay Counties, AL (75 FR 67512)	Georgia pigtoe	not likely to adversely modify or destroy
Unit IR 1: Coosa River Cherokee County, AL (75 FR 67512)	interrupted rocksnail	not likely to adversely modify or destroy
Unit IR 2: Oostanaula River Gordon and Floyd Counties, GA (75 FR 67512)	interrupted rocksnail	not likely to adversely modify or destroy
Unit IR 3: Lower Coosa River Elmore County, AL (75 FR 67512)	interrupted rocksnail	not likely to adversely modify or destroy
Unit RH 1: Lower Coosa River Elmore County, AL (75 FR 67512)	rough hornsnail	not likely to adversely modify or destroy
Unit RH 2:	rough hornsnail	not likely to adversely modify or destroy

Yellowleaf Creek Shelby County, AL (75 FR 67512)		
Unit 12: Fort Toulouse State Park Elmore County, AL (79 FR 54635)	Georgia rockcress	not likely to adversely modify or destroy
Unit 15: Blacks Bluff Preserve Floyd County, GA (79 FR 54635)	Georgia rockcress	not likely to adversely modify or destroy
Unit 16: Whitmore Bluff Floyd County, GA (79 FR 54635)	Georgia rockcress	not likely to adversely modify or destroy
Unit 18: Coosa River (old River channel) and tributary Cherokee, Calhoun Cleburne Counties, AL (69 FR 40084)	southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	not likely to adversely modify or destroy
Unit 19: Hatchet Creek Coosa, Clay Counties, AL (69 FR 40084)	southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	not likely to adversely modify or destroy
Unit 21:	southern acornshell, ovate clubshell, southern clubshell,	not likely to adversely modify or destroy

Kelly Creek and tributary Shelby, St. Clair Counties, AL (69 FR 40084)	upland combshell, triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	
Unit 23: Yellowleaf Creek and tributary Shelby County, AL (69 FR 40084)	triangular kidneyshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	not likely to adversely modify or destroy
Unit 24: Big Canoe Creek St. Clair County, AL (69 FR 40084)	southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular	not likely to adversely modify or destroy
Unit 25: Oostanaula River/Coosawattee River/Conasauga River/Holly Creek Floyd, Gordon, Whitfield, Murray Counties, GA and Bradley and Polk Counties, TN (69 FR 40084)	southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Alabama moccasinshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	not likely to adversely modify or destroy
Unit 26: Lower Coosa River Elmore County, AL (69 FR 40084)	southern acornshell, ovate clubshell, southern clubshell, upland combshell, triangular kidneyshell, Alabama moccasinshell, Coosa moccasinshell, southern pigtoe, fine-lined pocketbook	not likely to adversely modify or destroy

Table 2. Final critical habitat determinations provided by USACE.

You have provided additional information on the description and justification on the ROI selected for the TSP, analysis of how discretion of water balance at Carters Dam and Carters Reregulation Dam will be impacted by the Allatoona Lake storage reallocation, changes in hydropower operations at Allatoona Dam due to the TSP, changes in pool elevation and reservoir footprint at Allatoona Lake due to the TSP, and an impacts analysis on threatened and endangered species locations within the ROI, specifically in the tributaries.

Etowah and Oostanaula Rivers

The Service has evaluated the proposed changes (TSP) in Allatoona Lake, and the Etowah and Oostanaula rivers. In Allatoona Lake the TSP would not cause any new areas of the lake or its tributaries to be inundated nor would it cause any previously inundated sites to become dry. Because the proposed changes are occurring entirely within the active footprint of the reservoir, impacts to listed species habitat and/or proposed Critical Habitat surrounding the reservoir are unlikely. Due the changes being negligible to marginal and within the variation of flows under the NAA in the Etowah River below Allatoona Dam, impacts to listed species habitat that occurs in tributaries to the Etowah River downstream of Lake Allatoona are unlikely. The TSP would likely result in negligible changes to flow conditions compared to the NAA. Backwater effects in the Oostanaula that could potentially increase flooding were also negligible. Due to the negligible changes in flow conditions and backwater effects in the Oostanaula, impacts to listed species habitat and/or designated Critical Habitat in the Oostanaula are unlikely.

Coosa River and its Tributaries

We evaluated the TSP's changes to flows in the Coosa River and its tributaries the potential impact to species and designated critical habitat. There are little to no changes anticipated in the mainstem of the Coosa River or its tributaries. However, the 5-year flood annual exceedance event model indicates a 0.94-ft increase in elevation for Choccolocco Creek and the duration model indicates an 8-hr increase in the amount of time that would be impacted by the 5-year annual flood exceedance event under the Proposed Action comparted to the No Action Alternative (NAA). Cylindrical lioplax, painted rocksnail, and tulotoma snail are known to occur in lower portions of Chocccolocco Creek. If this duration exceeds 12 hours, we recommend reinitiating consultation to reevaluate the Proposed Action effects determination on these snail species. We request a monitoring program that would monitor river stage be developed and implemented with the Service at 33.559372, -86.119959 upstream to 33.551109, -86.106667 to evaluate the changes to Choccolocco Creek due to the TSP.

We have reviewed our information and the submitted Proposed Action (TSP) description and evaluation of project effects provided by the BA effects analysis and BA addendum information on the flood annual exceedance event differences predicted for the 5-yr model and the 100-yr model, duration of elevation changes from each modeled flood event, and the effects to water quality changes anticipated to occur within the ROI. The Service concurs that the Proposed Action may affect, but is not likely to adversely affect the species or designated critical habitat addressed above. Our concurrence applies to the entire Action Area (ROI) as described by USACE (Section 4.0 of the BA).

No further endangered species consultation will be required for this project unless: 1) the identified action is subsequently modified in a manner that causes an effect on a listed species or on proposed or designated critical habitat; 2) new information reveals the identified action may affect federally protected species or designated critical habitat in a manner or to an extent not previously considered; or 3) a new species is listed or a critical habitat is designated under the Endangered Species Act that may be affected by the identified action.

We appreciate the coordination on this project. If you have any questions, please contact Alabama Ecological Services Field Office staff biologist Jennifer Grunewald at (205) 247-3726 or Georgia Ecological Services Field Office staff biologists Martha Zapata and Scott Glassmeyer at (706) 613-9493.

Sincerely,

WILLIAM PEARSON Digitally signed by WILLIAM PEARSON Date: 2020.11.06 07:41:19 -06'00'

William J. Pearson
Field Supervisor
Alabama Ecological Services Field Office

cc: Georgia Ecological Services Field Office, attention Martha Zapata and Scott Glassmeyer

Page intentionally blank

Attachment 6. Other Agency Correspondence

Page intentionally blank

-----Original Message-----
From: Pearson, Bill [mailto:bill_pearson@fws.gov]
Sent: Monday, May 20, 2019 4:42 PM
To: Jacobson, Jennifer L CIV USARMY CESAM (US) <Jennifer.L.Jacobson@usace.army.mil>
Cc: Grunewald, Jennifer <jennifer_grunewald@fws.gov>
Subject: Re: [Non-DoD Source] Re: [EXTERNAL] ACT FWCA Request

Thank you Jenny.

William J. Pearson
Field Supervisor
Alabama Ecological Services Field Office

U.S. Fish and Wildlife Service
1208-B Main Street
Daphne, Alabama 36526
Phone: 251.441.5870
Mobile: 251.586.1348
Fax: 251.441.6222
Email: bill_pearson@fws.gov <mailto:bill_pearson@fws.gov>

On Mon, May 20, 2019 at 2:56 PM Jacobson, Jennifer L CIV USARMY CESAM (US) <Jennifer.L.Jacobson@usace.army.mil <mailto:Jennifer.L.Jacobson@usace.army.mil> > wrote:

Good Afternoon Bill & Jennifer,

I am sending this email to formally document our discussion regarding the U.S. Army Corps of Engineers, Mobile District not requiring a Fish and Wildlife Coordination Act Report (FWCAR) for the Allatoona Water Supply Storage Reallocation Study & Weiss and Logan Martin Water Control Manuals Updates on the Alabama-Coosa-Tallapoosa River Basin. After further discussion with counsel, it was determined that a FWCAR was not necessary or appropriate for the current project. We do appreciate your agency's willingness to assist in this study effort. Pursuant to Section 7(a)2 of the Endangered Species Act, we will coordinate with your agency on those protected species under your purview. Should you have any questions, please feel free to contact me.

Jenny Jacobson
Chief, Environment & Resources Branch
Planning & Environmental Division
109 St. Joseph Street

Mobile, Alabama 36602
Email - Jennifer.L.Jacobson@usace.army.mil <mailto:Jennifer.L.Jacobson@usace.army.mil>
Office Phone - 251/690-2724
Fax Line - 251/690-2727
Cellular - 251/472-7589

-----Original Message-----
From: Pearson, Bill [mailto:bill_pearson@fws.gov <mailto:bill_pearson@fws.gov>]
Sent: Friday, October 12, 2018 3:55 PM
To: Jacobson, Jennifer L CIV USARMY CESAM (US) <Jennifer.L.Jacobson@usace.army.mil <mailto:Jennifer.L.Jacobson@usace.army.mil> >
Subject: Re: [Non-DoD Source] Re: [EXTERNAL] ACT FWCA Request

Ok, let's talk Tuesday about this. I need to get back to my chain of command. Thanks!

____

William J. Pearson
Field Supervisor
Alabama Ecological Services Field Office

U.S. Fish and Wildlife Service
1208-B Main Street
Daphne, Alabama 36526
Phone: 251.441.5870
Mobile: 251.586.1348
Fax: 251.441.6222
Email: bill_pearson@fws.gov <mailto:bill_pearson@fws.gov> <mailto:bill_pearson@fws.gov <mailto:bill_pearson@fws.gov> >

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

On Fri, Oct 12, 2018 at 8:41 PM Jacobson, Jennifer L CIV USARMY CESAM (US) <Jennifer.L.Jacobson@usace.army.mil <mailto:Jennifer.L.Jacobson@usace.army.mil> <mailto:Jennifer.L.Jacobson@usace.army.mil <mailto:Jennifer.L.Jacobson@usace.army.mil> > > wrote:

Hi Bill
No apologies needed. I am on leave today and Monday but will be in the office on Tuesday.

____

From: Pearson, Bill <bill_pearson@fws.gov <mailto:bill_pearson@fws.gov> <mailto:bill_pearson@fws.gov <mailto:bill_pearson@fws.gov> > >
Date: October 12, 2018 at 9:01:32 AM CDT
To: Jacobson, Jennifer L CIV USARMY CESAM (US) <Jennifer.L.Jacobson@usace.army.mil <mailto:Jennifer.L.Jacobson@usace.army.mil> <mailto:Jennifer.L.Jacobson@usace.army.mil <mailto:Jennifer.L.Jacobson@usace.army.mil> > >
Subject: [Non-DoD Source] Re: [EXTERNAL] ACT FWCA Request

Hi Jenny,

Sorry I'm so late in responding. Do you have some time in the next few days to talk about this? I feel like I need a better understanding of what's expected of us.

Thanks.

Bill

____

William J. Pearson
Field Supervisor
Alabama Ecological Services Field Office

U.S. Fish and Wildlife Service
1208-B Main Street
Daphne, Alabama 36526
Phone: 251.441.5870
Mobile: 251.586.1348
Fax: 251.441.6222
Email: bill_pearson@fws.gov <mailto:bill_pearson@fws.gov> <mailto:bill_pearson@fws.gov <mailto:bill_pearson@fws.gov> >

On Mon, Jul 23, 2018 at 2:53 PM Jacobson, Jennifer L CIV USARMY CESAM (US) <Jennifer.L.Jacobson@usace.army.mil <mailto:Jennifer.L.Jacobson@usace.army.mil> <mailto:Jennifer.L.Jacobson@usace.army.mil <mailto:Jennifer.L.Jacobson@usace.army.mil> > > wrote:

Good afternoon Bill -

Please see the attached electronic letter that was mailed today. As we discussed, this request concerns Mobile District's intent to prepare a SEIS for the ACT effort. Should you have any questions please feel free to contact me.

Jenny Jacobson
Chief, Environment & Resources Branch
Planning & Environmental Division
109 St. Joseph Street
Mobile, Alabama 36602
Email - Jennifer.L.Jacobson@usace.army.mil <mailto:Jennifer.L.Jacobson@usace.army.mil> <mailto:Jennifer.L.Jacobson@usace.army.mil <mailto:Jennifer.L.Jacobson@usace.army.mil> >
Office Phone - 251/690-2724
Fax Line - 251/690-2727
Cellular - 251/472-7589