

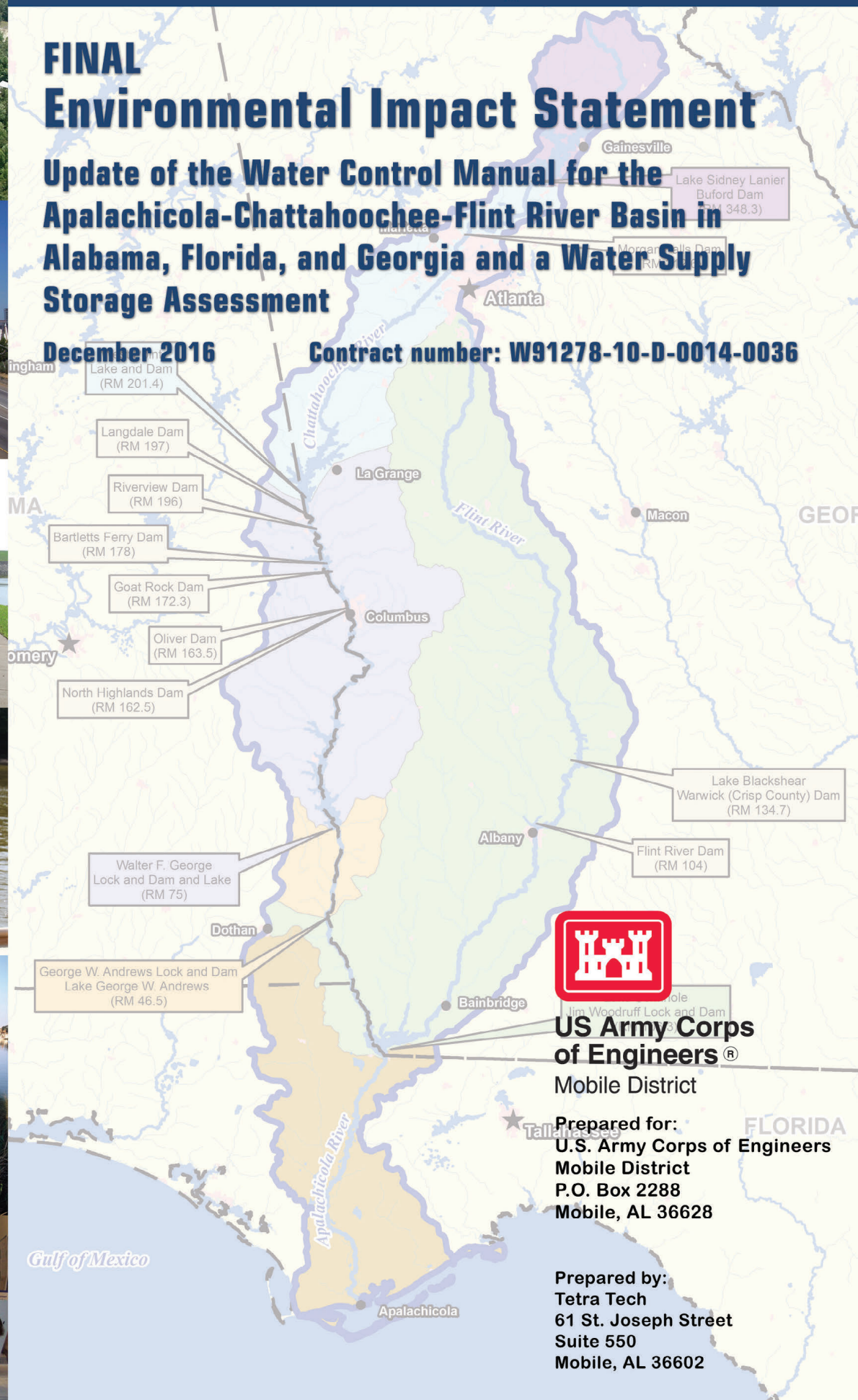


# FINAL Environmental Impact Statement

## Update of the Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin in Alabama, Florida, and Georgia and a Water Supply Storage Assessment

December 2016

Contract number: W91278-10-D-0014-0036



**US Army Corps  
of Engineers®**

Mobile District

Prepared for:  
U.S. Army Corps of Engineers  
Mobile District  
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Prepared by:  
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### Submit Comments and Stay Informed

Thank you for submitting your comments on the US Army Corps of Engineers Apalachicola-Chattahoochee-Flint Master Water Control Manual (WCM) Draft Environmental Impact Statement (EIS) and Water Supply Storage Assessment (WSSA).

You can receive notice the final EIS is available through the mailing list.

If you have not yet joined the mailing list please indicate that you would like to be added below.

If you would like more information on the ACF River Basin or the EIS process please check the main ACF Master Water Control Manual Update page:

<http://www.sam.usace.army.mil/Missions/PlanningEnvironmental/ACFMasterWaterControlManualUpdate>.

First name	Bill		
Last name	Brooksher		
Organization name			
Address			
City			
County			
State			
ZIP Code			
Phone			
E-mail			
Add to mailing list	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	✓
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail		

A. In December 2015, the State of Georgia submitted information regarding the water supply needs for Metro Atlanta. The GAEPD letter dated January 29, 2016, stated that Hall County's certification of need for water supply from Glades Reservoir has been rescinded. Accordingly, USACE has revised the water supply options presented in the final EIS to exclude Glades Reservoir as a reasonably foreseeable action with regard to water supply. While Glades Reservoir was carried over in the final EIS to show continuity, no alternatives except the previous PAA in the draft EIS include Glades.

B. Subsequent to this comment, the comment period was extended from 60 days to 105 days (ending on January 15, 2016).



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**From:** Bill Brooksher  
**Sent:** Wednesday, October 21, 2015 3:40 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] ACF HEC-ResSim Model Supporting Documentation (by email request)

A

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I would be interested in having the supporting documentation that involve the Glades Reservoir. I am astounded that Glades was included in the preferred alternative when the Glades draft EIS is not even out yet, and has relied on outdated population and need projections. Every bit of Glades water would be in Lanier in a matter of minutes. The toe of the dam will actually be in the lake and the Chattahoochee pumping is just upstream out of corps reach. This thing make no sense at all.

B

Thank you,

Bill Brooksher

#### Response to ACF001b – Bill Brooksher

- A. USACE, Savannah District Regulatory Division is responsible for the detailed evaluation of the proposed Glades Reservoir section 404 permit application. Consequently, most of the supporting documentation would be available from the Savannah District. Any modeling data developed by the Mobile District staff to evaluate potential Glades Reservoir operations in the context of the Master WCM update process are available upon specific Freedom of Information Act re-quest to the Mobile District office.
- B. In the State of Georgia's 2013 water supply request to USACE, the state clearly supported the proposed Glades Reservoir and considered it to be an integral part of its long-range plan. Consequently, USACE considered the project to be reasonably foreseeable for purposes of evaluating the state's request for reallocation of storage from Lake Lanier, contingent on a final decision on the permit application for the reservoir project by USACE, Savannah District. Subsequently, in accordance with the GAEPD letter dated January 29, 2016, Hall County's certification of need for water supply from Glades Reservoir has been rescinded. Accordingly, USACE has revised the water supply options presented in the final EIS to exclude Glades Reservoir as a reasonably foreseeable action with regard to water supply. While Glades Reservoir was carried over in the final EIS to show continuity, no alternatives except the previous PAA in the draft EIS include Glades.

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**From:** Bill Brooksher  
**Sent:** Thursday, January 28, 2016 5:56 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Comment on AFC Water Control Manual draft EIS  
**Attachments:** pdf678.pdf

To the Commander, U.S. Army Corps of Engineers, Mobile District:

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As a native Gainesville/Hall County resident, taxpayer, and water customer, I have for some time been strongly opposed to Hall County's efforts to build the Glades Reservoir project, and I was astounded to see Glades included in the Preferred Action Alternative (PAA) of the draft Water Control Manual. Further reading of the draft WCM made it clear that you folks had very little knowledge about Glades as described in the 404 application now being considered. I can understand the need to study the impact of a proposed reservoir in that stage of development, but why in the world would you include Glades in the PAA, especially without also determining an alternative PAA should Glades not be approved.

A

Any meaningful communication with the Corps Savannah District would have surely informed you of the many shortcomings and flaws in the 404 application and made you aware of its stated purpose and operational scenario. I've got to think those folks in Savannah were pretty shocked to see what's been presented in this draft EIS.

A little research on the history of Glades would have revealed that it began as a taxpayer funded scheme to build an amenity lake for a private developer. The agreement with the developer included the County's commitment to condemn neighbors' properties for the amenity lake. An amenity agreement with the developer, with 2ft maximum draw downs for 90 percent of the year, would have prevented any significant use for drinking water. Parts of the amenity agreement survive today (see attached pdf). Glades clearly should not have been included in the PAA prior to a 404 permitting decision. The Mobile District should at least thoroughly review the 404 application, draft EIS and all comments submitted by Feb 15 prior to proceeding with the WCM.

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I think it was equally wrong to take some State of Georgia notion about the Glades Reservoir, obviously different from the present application, and give it such importance in your PAA. There have been rumors, but no details provided by the State as to what they have in mind for Glades. Flow augmentation for downstream of Buford Dam? The Corps controls releases, and every drop of water (plus what was loss to Glades evaporation) would have been in Lanier anyway. Glades makes no sense.

B

The same applies to Glades use for drinking water. It makes no sense to build a dam that will actually sit in Lanier waters when they are at the levels we've recently seen. The Corp should consider the cost of constructing and operating Glades vs letting the water naturally flow to Lanier, a reservoir already approved for water supply. Local taxpayers and water customers have much to lose by a decision that will force us to rely on a Glades Reservoir for water.

I am strongly opposed to the Corps subtracting 40mgd from a total Lanier reallocation number and assigning that 40mgd to Glades for use by Gainesville/Hall County. The City of Gainesville has affirmed their preference for Lake Lanier withdrawals a number of times in the past. Hopefully they will communicate this again to the Corps. I feel that the PAA places Gainesville in a position of having to support construction of Glades if a time comes when we need even a small increase in allocation that could easily have come from Lanier.

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**The WCM and the Glades 404 application did not consider the most recent population and water demand projections.** These alone should be cause for denial of the 404 application and drastic revisions to the

A. In the State of Georgia's 2013 water supply request to USACE, the state clearly supported the proposed Glades Reservoir and considered it to be an integral part of its long-range plan. Consequently, USACE considered the project to be reasonably foreseeable for purposes of evaluating the state's request for reallocation of storage from Lake Lanier, contingent on a final decision on the permit application for the reservoir project by USACE, Savannah District. Subsequently, in accordance with the GAEPD letter dated January 29, 2016, Hall County's certification of need for water supply from Glades Reservoir has been rescinded. Accordingly, USACE has revised the water supply options presented in the final EIS to exclude Glades Reservoir as a reasonably foreseeable action with regard to water supply. While Glades Reservoir was carried over in the final EIS to show continuity, no alternatives except the previous PAA in the draft EIS include Glades.

B. In the State of Georgia's 2013 water supply request to USACE, the state clearly supported the proposed Glades Reservoir and considered it to be an integral part of its long-range plan. Consequently, USACE considered the project to be reasonably foreseeable for purposes of evaluating the state's request for reallocation of storage from Lake Lanier, contingent on a final decision on the permit application for the reservoir project by USACE, Savannah District. Subsequently, in accordance with the GAEPD letter dated January 29, 2016, Hall County's certification of need for water supply from Glades Reservoir has been rescinded. Accordingly, USACE has revised the water supply options presented in the final EIS to exclude Glades Reservoir as a reasonably foreseeable action with regard to water supply.



proposed WCM. Its a fitting irony that numbers for the Governor's Office of Planning & Budget (OPB) should be end of what is often referred to as "the Governor's lake".

C

As in the 404 application, I believe the Corps has based their modeling for the WCM on Glades having a maximum draw down, leaving 20% total volume as dead storage. The Corp needs to be aware that Hall County's agreement with the developer, renewed as recently as a few months back calls for a 30% dead storage. Hall County continues to renew this agreement each year despite have submitted a 404 application in violation of the agreement, obviously withholding that detail from the other party. The Corps should revise the modeling based on 30% dead storage. See attached pdf.

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I also have concerns about the State of Georgia's desire to reduce the flows in the river downstream of Buford Dam. For a number of reasons flows should be at least 750cfs all year as in past.

D

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Finally, the Corps needs to evaluate the impacts of raising Lake Lanier. There has been much talk and support for a two foot increase in the storage pool. That would equal about 3 Glades Reservoirs, considering only 70% of it storage capacity will be usable under the current agreement to limit withdrawal to leave the 30% dead storage. Even a one foot Lanier increase would help. I suspect the bulk of the expense of raising the lake will be the cost will be the study itself. It's worth noting that Hall County, on advice of consultants with much to gain, refused a request from other Lake Lanier area governments to join them in requesting a study be done on raising the lake. Having emptied Hall County taxpayers' pockets of close to \$2 million just for Glades already, that consultant continues to milk us for a monthly retainer fee, and I'm sure he anxiously hope you'll be providing some fuel for his gravy train.

E

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Robbing water from Lake Lanier, a water supply reservoir, by taking it from the river so it can flow through Glades and then to Lanier anyway, just doesn't make any sense, and will actually result in a loss of water. I can't believe the Corps will let it happen. Best wishes as you complete the task at hand, and thank you for considering my comments.

Bill Brooksher

#### Response to ACF001c – Bill Brooksher

- C. As a result of the State of Georgia's revised long-range population and water demand projections, the GAEPD, by letter dated January 29, 2016, rescinded Hall County's certification of need for water supply from Glades Reservoir. Accordingly, USACE has revised the water supply options presented in the final EIS to exclude Glades Reservoir as a reasonably foreseeable action with regard to water supply. The final EIS also uses the most recent population and water demand projections available.
- D. GAEPD requested that the minimum flow at Peachtree Creek be reduced to 650 cfs during drought periods. In response to that request, USACE investigated reducing the minimum flow value to 650 cfs from November through April. USACE conducted an environmental assessment in 2008 and concluded that reducing the minimum flow requirement at Peachtree Creek to 650 cfs during that period would not have significant adverse effects on water quality. Over the past decade, USACE has reduced the minimum flow seasonally at Peachtree Creek several times. Monitoring data is available from GAEPD during those periods. The State of Georgia has the responsibility for establishing and regulating water quality standards and should conduct any further analysis that might be required. NEPA requires that USACE capture the impacts to the human environment of any change from the NAA. USACE captured any impacts from the change to a season-varying flow at Peachtree Creek. Modeling in support of the final EIS illustrates the impacts that change would have and confirms that the impacts of reducing flows at Peachtree Creek to 650 cfs from November through April would not have significant adverse effects on water quality.
- E. As stated in section 4.1.1, the Master WCM update is being conducted to determine how the federal projects in the ACF Basin should be operated for their authorized purposes, in light of current conditions and applicable laws. Raising the top of the conservation pool at Lake Lanier would require reallocating storage from the flood control pool and would adversely affect level of flood risk management provided by the project. One of the screening criteria described in draft EIS section 1.4.4 was to maintain at least the current level of flood risk management. Accordingly, raising the conservation pool at Lake Lanier by 2 ft would not meet this criterion and was not carried forward. In accordance with the GAEPD letter dated January 29, 2016, Hall County's certification of need for water supply from Glades Reservoir has been rescinded. Accordingly, USACE has revised the water supply options presented in the final EIS to exclude Glades Reservoir as a reasonably foreseeable action with regard to water supply.

Response to ACF001c – Bill Brooksher

No response required

**A RESOLUTION****A RESOLUTION TO EXERCISE THE OPTION FOR  
THE PURCHASE OF REAL PROPERTY OWNED BY  
MAYR-MELNHOF HOLDING, A.G. d/b/a Glades  
Woodland Farms AND GLADES LAND AND CATTLE  
CORPORATION.**

**WHEREAS**, the Board of Commissioners of Hall County, Georgia, as the lawfully designated governing authority of Hall County, Georgia, entered into an Option Agreement for the Sale and Purchase of Real Property with Mayr-Melnhof Holding, A.G., a Liechtenstein corporation doing business as Glades Woodland Farms and Glades Land and Cattle Corporation on October 12, 2000. A copy of said Option Agreement is attached hereto as Exhibit "A" and made a part hereof; and

**WHEREAS**, prior to the parties entering into the Option Agreement, a Memorandum of Understanding was executed by the parties on April 14, 2000, which definitively set forth the parties rights and obligations under the Option Agreement; and

**WHEREAS**, the Board of Commissioners of Hall County, Georgia desires, to exercise the Option Agreement which will constitute a binding Contract for Purchase and Sale for the real property as described in said Option; and

**WHEREAS**, the exercise of the Option Agreement is consistent with the terms and provisions of said Agreement; and

**WHEREAS**, all parties to the Option Agreement are ready, willing and able to exercise said Option.



**EXHIBIT "A"**

**NOW, THEREFORE, BE IT RESOLVED** by the Board of Commissioners of Hall County as follows:

**-1-**

The Chairman of the Board of Commissioners of Hall County is hereby authorized and directed to execute all documents necessary to exercise the the Option Agreement for the Sale and Purchase of Real Property executed on October 12, 2000, between Mayr-Melnhof Holding, A.G., a Liechtenstein corporation doing business as Glades Woodland Farms and Glades Land and Cattle Corporation and Hall County, Georgia, so as to constitute a binding Contract for Purchase and Sale of real property described in the Option Agreement.

This Resolution is hereby adopted this 14th day June 2001, the public health, safety, and general welfare demanding it.

**HALL COUNTY BOARD OF COMMISSIONERS**

By [Signature]  
Chairman  
[Signature]  
Commissioner  
[Signature]  
Commissioner  
[Signature]  
Commissioner  
[Signature]  
Commissioner  
[Signature]  
Commissioner

**ATTEST:**

[Signature]  
Michelle Smallwood

Clerk

F:\CASES\DIANE\COUNTY\RES-2001\GLADES OPTION-RES.wpd  
6/2001

**OPTION AGREEMENT****FOR THE SALE AND PURCHASE OF REAL PROPERTY**

THIS AGREEMENT, made and entered into this 17th day of October, 2000, by and between MAYR-MELNHOF HOLDING, A.G., a Liechtenstein corporation doing business as Glades Woodland Farms and GLADES LAND AND CATTLE CORPORATION, a Georgia Corporation, whose mailing address is c/o 405 Gaines School Road, Athens, Georgia 30605 (hereinafter collectively referred to as "Glades") and HALL COUNTY, GEORGIA, a body politic existing under the laws of the State of Georgia, whose mailing address is 116 Spring Street, Gainesville, Georgia 30501 (hereinafter referred to as "Hall County").

WHEREAS, Glades owns approximately 7,000 acres located in Hall County, Georgia ("Glades Land"); and

WHEREAS, Glades and Hall County have identified the need and general location of a reservoir project to be located upon a portion of the Glades Lands (hereinafter the "Reservoir"); and

WHEREAS, the parties adopted a mission statement which recognizes the united cooperative effort to study, permit and construct a reservoir and to develop a long-term operation and management policy for the Reservoir for the maximum benefit of the private community and governmental sector; and

WHEREAS, over the past several years the parties have invested substantial financial and human resources in the study and planning of the Reservoir and have concluded that the Reservoir, as an amenity as well as a water source, is mutually beneficial to both Glades and Hall County; and

WHEREAS, on April 14, 2000, Glades and Hall County entered into that certain Memorandum of Understanding which sets forth the major business terms relative to the Reservoir ("Memorandum of Understanding") and the purpose of this Agreement, together with that certain Lease-Management Agreement as described herein, is to more definitively set forth the parties rights and obligations as expressed in the Memorandum of Understanding.

**WITNESSETH**

FOR AND IN CONSIDERATION of the sum of **TEN AND NO/100 Dollars (\$10.00)** (the "Option Payment"), and in settlement of all claims arising by virtue of that certain Condemnation Action styled 97-CV-2394B, and other good and valuable consideration in hand paid to Glades, receipt and sufficiency of which are hereby acknowledged by Glades, Glades does hereby grant and convey to Hall County for the term hereof an exclusive and irrevocable option (the "Hall County Option") to purchase upon the terms and conditions hereinafter set forth that

certain tract or parcel of land located in Hall County, Georgia, being described as the property which constitutes the Reservoir at a normal pool elevation of 1,180 MSL (containing approximately 733 acres, more or less) and the property necessary to construct and operate the dam site, and associated spill ways, at normal pool elevation of 1,180 MSL. Further, the Reservoir shall also including the property that constitutes a flood zone (the "Flood Zone") above the 1,180 normal pool elevation, the exact dimensions to be determined by engineering. Hall County and Glades anticipate that the Flood Zone shall be that certain property lying between the elevations of 1,180 MSL and 1,183 MSL. Subject to Hall County's flood rights, as established in the Lease-Management Agreement, within the Flood Zone, Glades shall reserve a perpetual exclusive easement over the Flood Zone for general development purposes recognizing however that certain types of permanent structures such as buildings may be prohibited or regulated within the Flood Zone. The estimated total acreage contained within the Reservoir including the Flood Zone is approximately 805 acres, more or less, together with the property necessary for the construction and operation of a future "Pump Storage Site", all as being more particularly described on Exhibit "A" attached hereto and made a part hereof (hereafter collectively referred to as the "Property"). LESS AND EXCEPT HOWEVER, all timber, trees, shrubbery, and other wood products located on the Property. Glades shall, at Hall County's expense, have the Reservoir and all other property necessary for the operation of the Reservoir (such as the dam site, Flood Zone, Off-Site Property (as hereinafter defined), the Below Dam Site Property (as hereinafter defined), access roads, the Pump Storage Site, etc., collectively the "Reservoir Site") surveyed by a Georgia Registered Surveyor, the surveyor and Survey being subject to the reasonable approval of both parties (the "Survey"). The Survey shall also identify the acreage below the dam site which shall be subject to certain flood and spillway easements in favor of Hall County (the "Below Dam Site Property"); provided however that Glades continued ownership of the Below Dam Site Property permits the Glades to utilize such property for any and all uses and purposes that do not unreasonably interfere or impede Hall County's flood rights thereon. The Survey shall also identify the location and amount of property necessary for a future "Pump Storage Facility" (the property that constitutes the Pump Storage Facility is hereinafter the "Pump Storage Site"). The Pump Storage Site shall also include an easement, not to exceed twenty (20) feet in width, from the Pump Storage Facility to the Reservoir and from the Pump Storage Facility to the Chatahoochee River or Lake Lanier, as the case may be. The Pump Storage Site shall also include an access easement from Relocated Glades Farm Road to the Pump Storage Facility. In the event Glades develops the property in the vicinity of the Pump Storage Facility, Hall County agrees that any easements appurtenant to the Pump Storage Site may be relocated by Glades in order to lie within certain road rights of way constructed by Glades in such development. After the Survey shall have been completed, Exhibit "A" hereto shall automatically be amended to conform to the legal description based on the Survey, and, thereafter, said new legal description shall be the legal description of the Property for all purposes relating to this Agreement, and no written amendment shall be necessary.

1. **TERM AND EXERCISE OF OPTION.** The term of the Hall County Option shall commence upon the date of full execution of this Agreement and can be exercised by Hall County commencing on January 15, 2001 and shall terminate July 1, 2001; if the Hall County Option is exercised by Hall County as provided herein, thereafter this Agreement shall constitute a binding Contract For Purchase and Sale without the need of any further agreement between the parties. If

Hall County fails to exercise the Hall County Option, then Glades shall have the sole and exclusive right and option from July 2, 2001 to September 1, 2001, to require Hall County to purchase the Property upon such terms and conditions as described herein (the "Glades Option"). If the Glades Option is exercised by Glades as provided herein, thereafter this Agreement shall constitute a binding Contract For Purchase and Sale without the need of any further agreement between the parties. If Glades fails to exercise the Glades Option as provided herein, thereafter this Agreement shall automatically become null and void and the parties shall have no further rights or obligations to one another.

2. **PURCHASE PRICE.** If the Hall County Option or the Glades Option is exercised as provided herein, the purchase price for all the Property within the Reservoir Site, shall be the sum of Five Thousand Three Hundred Sixty-Five and No/100 (\$5,365.00) Dollars per acre. The total purchase price shall be determined by multiplying the price per acre by the total number of acres to the nearest 1/1000th thereof as determined by the Survey (the "Purchase Price"). The Purchase Price shall be paid in cash or immediately collectable funds at closing.

3. **WARRANTIES OF TITLE.** Hall County shall have until March 1, 2001 in which to examine title to the Property and to furnish Glades with a written statement of objections to the title to the Property (hereinafter referred to as an "Objection"), if any, other than (i) licenses and easements, if any, for public utilities and flood easements in favor of the Corp of Engineers; (ii) any and all matters disclosed on the Survey except for those that would materially adversely affect the operation and maintenance of the Reservoir, (iii) matters contained in the Lease-Management Agreement, and (iv) liens for ad valorem taxes not yet due and payable; (hereinafter referred to as the "Permitted Exceptions"). Such written statement shall be accompanied by a copy of the Hall County's title report disclosing such objections to title. In the event Glades is notified of an Objection, Glades agrees that it shall in good faith, promptly cure any such Objection which it can reasonably cure at a reasonable cost on or before the Closing Date, as that term is hereinafter defined, provided, however, that Glades shall not be required to satisfy and discharge any mortgage encumbering the Property until the Closing Date. In the event Glades fails or refuses to cure any Objection prior to the Closing Date, Hall County may, at its option, either (i) terminate this Agreement and be entitled to a full refund of the Option Payment, (ii) extend the time for closing to permit Glades to cure such Objection, or (iii) accept title to the Property subject to such Objection. Glades and Hall County agree that the issue of marketability of the title to the real property covered by this Agreement shall be determined in accordance with Georgia law as supplemented by title standards of the State Bar of Georgia. Any objection which comes within the scope of any such title standard may be cured by Glades delivering to Hall County on or before the Closing Date, the affidavits or other title papers or documents, if any, required under the applicable title standards to cure such Objection to the satisfaction of the title insurance company. In any event, it is specifically understood and agreed that the title to be conveyed hereunder shall be title which Lawyers Title Insurance Corporation will insure under its standard owner's policy, at its regular premium therefor, subject only to the usual policy exceptions and the permitted exceptions herein defined.

4. **DAMAGE TO PROPERTY AND CONDEMNATION.** There is no substantial value in the improvements on the Property and Glades shall have no obligation to restore any damage to



or destruction of any improvements. Should the Property or any portion thereof be condemned or appropriated by public authority, be taken by proceedings in eminent domain or notice thereof be served on Glades prior to the time the sale is consummated, then at the option of Hall County:

(a) This Agreement shall be declared null and void and Hall County shall be entitled to immediate refund of any Option Payments paid hereunder; or

(b) Hall County may consummate the sale and receive such condemnation award. This election is to be exercised within ten (10) days after Hall County has been notified in writing by Glades of the amount of the condemnation award, if any. Glades will receive on the condemnation.

5. INSPECTION. After the effective date hereof Hall County shall have the right to go on the Property personally or through agents, employees and contractors to inspect, examine and survey same and otherwise do all that may be necessary to determine the boundaries of the Property and to verify the accuracy of the warranties of Glades with respect to the condition of the Property. To the extent permitted by law, Hall County shall hold Glades harmless for any and all costs, expenses, liabilities and damages resulting from the performance by Hall County or its representatives of such tests, inspections or examination.

6. NOTICES. Unless otherwise provided herein, all notices and demands herein required shall be in writing and shall be sent by either (a) United States Certified Mail, return receipt requested, postage prepaid, or (b) national overnight delivery service with return receipt, delivery charge prepaid, or (c) by facsimile transmission with confirmation report. Notices sent by United States Certified Mail as set forth above shall be effective three (3) days after the same is deposited with the United States Postal Service, postage prepaid. Notices sent by national overnight courier service shall be effective one (1) day after depositing the same with courier service, delivery fee prepaid, marked for next day delivery. Notices sent by facsimile shall be effective as of the date of receipt shown on the confirmation report.

AS TO GLADES: Mayr-Melnhof Holding, A.G.  
c/o Carl R. Nichols  
Nichols Land & Investment  
405 Gaines School Road  
Athens, Ga 30605

COPY TO: G. Marcus Hodge  
Fortson, Bentley & Griffin, P.A.  
440 College Avenue North, Suite 220  
Athens, Ga 30601

AS TO HALL COUNTY: Hall County  
Attn: Jim Shuler, County Administrator  
118 Spring Street  
Gainesville, Georgia 30501

COPY TO:

William H. Blalock, Jr.  
Stewart, Melvin & Frost  
200 Main Street, 6<sup>th</sup> Floor  
Gainesville, Ga 30501

If the time period by which any right, option or election provided under this Agreement must be exercised, or by which any act required hereunder must be performed, or by which the closing must be held, expires on a Saturday, Sunday or legal holiday, then such time period shall be automatically extended through the close of business on the next regular business day or, in the case of the closing, to the same time and place on the next regular business day, which is not a Saturday, Sunday or legal holiday.

7. EXECUTION OF DOCUMENTS. At the closing each party shall execute all deeds, affidavits, closing statements and other pertinent documents necessary to consummate the purchase and sale as contemplated under the terms of this Agreement.

8. NONMERGER. This Agreement shall not be merged into the documents executed at the closing, but shall survive the closing, and the provisions hereof shall remain in full force and effect.

9. TIME OF ESSENCE. With respect to all the terms and conditions of this Agreement, time is of the essence.

10. ENTIRE AGREEMENT. This Agreement constitutes the entire agreement between the parties hereto and no representations, inducements, promises or agreements, oral or otherwise, not embodied herein, shall be of any force or effect, unless same be in writing, signed by both Hall County and Glades and attached hereto.

11. BINDING EFFECT. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto, their respective heirs, assigns, personal representatives or successors in interest.

12. GENDER AND WORD CONSTRUCTION. The masculine, feminine or neuter, wherever used herein, shall be deemed to represent the masculine, feminine or neuter, whichever is appropriate; and the singular or plural forms of words, wherever used herein, shall be deemed to represent the form, singular or plural, which is appropriate.

13. CAPTIONS. The captions and headings throughout this Agreement are for convenience and reference only. The words contained therein shall in no way be deemed or held to define, limit, describe, explain, modify or amplify, or add to the interpretation, construction or meaning of any of the provisions or the scope or intent of this Agreement, nor in any way affect this Agreement.

14. EXHIBITS. Each and every exhibit referred to or otherwise mentioned in this Agreement is attached to this Agreement and is and shall be construed to be made a part of this Agreement by such reference or other mention at each point at which such reference or other

mention occurs, in the same manner and with the same effect as if each exhibit were set forth in full and at length every time it is referred to or otherwise mentioned.

15. COUNTERPARTS. This Agreement may be executed in several counterparts, each of which shall constitute an original and all of which together shall constitute one and the same instrument.

16. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of Georgia.

17. DATE OF AGREEMENT. For purposes of this Agreement, the date of this Agreement shall be deemed to be the latter of the dates of execution of this Agreement by Glades and Hall County, such date being opposite the signatures of Hall County and Glades. Such date shall be inserted in the preamble on page one (1) of this Agreement.

18. COMMISSION. Commission to be paid in connection with this transaction has been negotiated between Glades and Nichols Land & Investment Co. (hereinafter "Broker") and shall be paid pursuant to a separate brokerage commission agreement between Glades and Broker. Glades and Hall County hereby represent each to the other that they have not disclosed this Agreement or subject matter hereof to any real estate broker, agent or salesman other than the Broker, so as to create any legal claim or right for a real estate commission or compensation with respect to the negotiation of this Agreement or conveyance of the Property. In the event that a broker makes a claim for commission against either one of the parties, that party shall hold harmless the other party from any cost involved in defending against said claim.

Broker has acted as agent in this transaction for Glades and Broker has not acted as agent for Hall County.

19. ASSIGNMENT. Glades and Hall County agree that neither party can assign all or any portion of its right, title and interest in this Agreement to a third party without the consent of the other party. However, the parties acknowledge that Hall County anticipates assigning its interest in this Agreement to the Gainesville and Hall County Development Authority, or some other authority acceptable to both parties, which assignment is hereby consented to by Glades. Notwithstanding anything contained herein to the contrary, Hall County shall not assign portions of this Agreement that relate to obligations or agreements that cannot legally be binding upon or performed by any entity other than Hall County. Provided further however, the parties acknowledge that Glades anticipates assigning its interest in this Agreement to an existing or newly formed entity controlled or owned by Glades, which assignment is hereby consented to by Hall County.

20. SCRIVENER OF AGREEMENT. Should any provision of this Agreement require judicial interpretation, it is agreed that the Court interpreting or construing the same shall not apply a presumption that the terms hereof shall be more strictly construed against one party by reason of the rule of construction that a document is to be construed more strictly against the party who itself or through its agent prepared the same. It being agreed that the agents of all parties have participated in the preparation hereof.

## 21. GLADES' COVENANTS, WARRANTIES AND REPRESENTATIONS

Glades hereby covenants, warrants and represents to Hall County the following:

(a) That Glades, or a successor entity owned and controlled by Glades, is and will continue to be, through and including the time of closing hereunder, the lawful owner of full and marketable fee simple title to the Property, subject to the Permitted Exceptions;

(b) That Glades has not entered into any other contract, option or other agreement with any other party concerning the sale of all or any portion of the Property, and that Glades will not enter into any such contract, option agreement or other agreement through and including the time of closing contemplated hereunder;

(c) With the exception of the pending condemnation action in favor of Hall County, that Glades has not received any notice of any pending or threatened condemnation or similar proceeding affecting the Property or any portion thereof, nor is the Glades aware that any such action is presently contemplated;

(d) That, other than customary hunting leases, there are no leases or tenancies affecting all or any portion of the Property;

(e) That to the best of Glades' current knowledge and belief, no hazardous wastes, as defined by any Federal, state or local laws or regulations, are now or have ever been manufactured or stored on the Property and the Property is not in violation of, and is not subject to, any pending or threatened proceedings or investigations relating to any Federal, state or local environmental or health laws or regulations applicable to the Property;

(f) That the party executing and delivering this Agreement on behalf of Glades has full power and authority to enter into this Agreement;

(g) That to the best of Glades's current knowledge and belief, there are no landfills, dumps, or underground storage tanks located on the Property.

## 22. HALL COUNTY COVENANTS, WARRANTIES AND REPRESENTATIONS

Hall County is a politic body existing under the laws of the State of Georgia and this Agreement and all other contracts, documents and instruments executed and delivered by Hall County in connection with or pursuant to this Agreement are legal, valid and binding obligations of Hall County effective and enforceable in accordance with their respective terms and have been duly authorized by all necessary actions; and this Agreement and the execution and delivery of this Agreement and the performance hereof do not contravene, result in a breach of, constitute a default hereunder, or conflict with, any agreement, indenture, or other instrument to which Hall County is a part or by which it is bound, any judgment, decree or order or award of any court, governmental body, or any law or rule or regulation applicable to Hall County.

23. SHORT FORM OPTION TO PURCHASE. Upon the request of either party, Hall County and Glades shall execute a Short Form Option to Purchase for recording, which shall contain such form and substance as either party shall reasonably request.

24. DELIVERIES AT CLOSING. On the Closing Date, the Closing shall occur as follows, subject to satisfaction of all the terms and conditions of this Agreement.

(a) Glades shall convey to Hall County good and marketable fee simple title to the Property, by limited warranty deed duly executed and in recordable form, without exception for any title objections other than the Permitted Exceptions and such objections as are waived by Hall County pursuant to Section 3 hereof.

(b) Glades shall deliver to Hall County an affidavit in form sufficient to enable Hall County to have deleted from its policy of title insurance any exception for unfilled mechanics' and materialmen's liens. Such affidavit shall also include representations that there are no legal proceedings against Glades which could affect Glades's title to the Property or the right or power of Glades to convey to Hall County the Property in accordance with this Agreement.

(c) Glades shall deliver to Hall County all other documentation as may be reasonably required by the attorney for Hall County or its title insurer to carry out the terms, covenants, conditions and intent of this Agreement.

(d) A certificate evidencing the reaffirmation of the truth and accuracies of Glades's covenants, warranties and representations set forth in this Agreement.

(e) Glades and Hall County shall each deliver to the other evidence of their respective authority to execute and deliver this Agreement and any other documents required hereunder.

(f) Broker shall execute and deliver a Broker's Lien Waiver which includes, without limitation, (i) an acknowledgment by Broker of the receipt of the entire balance due to Broker for all services rendered by Broker relating to the Property, and (ii) a waiver by Broker of any claim or lien which Broker may have against Hall County, Glades or the Property by reason of the transaction contemplated by this Agreement.

(g) Hall County and Glades shall execute and deliver, as applicable, such other documents, certificates, instruments and the like, as may be required under this Agreement or reasonably acceptable to the executing party and reasonably necessary or helpful to carry out their respective obligations under this Agreement with respect to the closing.

(h) Upon Glades's delivery at the Closing of the deeds, affidavits, and other documents described above, Hall County shall pay the Purchase Price to Glades, as provided in Section 2 hereof.

25. Remedies. If the sale and purchase of the Property as contemplated by this Agreement is not consummated on account of Glades default hereunder, the Option Payment shall be returned to Hall County on demand, without prejudice to any other rights or remedies of Hall County hereunder, at law or in equity, including the right to seek specific performance of this

Agreement. If the sale and purchase of the Property as contemplated by this Agreement is not consummated on account of Hall County's default hereunder, Glades may pursue all rights and remedies available at law or in equity, including the right to seek specific performance of this Agreement.

26. SPECIAL STIPULATIONS. If conflicting with any other provisions contained herein, the following special stipulations shall control:

(a) Adjustments. All unpaid assessments as of the Closing shall be paid by Glades. All ad valorem property taxes affecting the Property for the calendar year of the closing shall be prorated between Hall County and Glades, as of the Closing. In the event that the bill for ad valorem taxes is not available at the time of the Closing, the proration shall be based upon either the tax bill for the immediately preceding year or the current millage rate and evaluation, if available. In the event that upon the availability of tax information for the calendar year of the Closing if this proration has resulted in a malapportionment of ad valorem taxes, Glades and Hall County agree to make an adjustment between themselves with any deficiency being paid on demand by the other party. This agreement to adjust shall survive the Closing.

(b) Closing. Closing shall occur within forty-five (45) days from the date of the exercise of the Hall County Option or within forty-five (45) days from the exercise of the Glades Option if Hall County fails to exercise the Hall County Option (the "Closing Date"); provided however, that in any event closing shall not occur prior to April 1, 2001. The closing shall be at such exact time and place as mutually agreed upon by the parties. If the parties fail to agree to such time and place, the closing shall occur at 10:00 a.m. on the forty-fifth (45th) day following Hall County's exercise of the Hall County Option or Glades exercise of the Glades Option, as the case may be, in Hall County's attorneys law offices of Stewart, Melvin & Frost, 200 Main Street, 6<sup>th</sup> Floor, Gainesville, Georgia 30503.

(c) Closing Costs. Hall County shall pay (i) all fees and expenses of Hall County's attorneys, (ii) all costs of title insurance, title examination, and recording fees, (iii) all fees and expenses for any inspections, or analyses of the Property undertaken by Hall County, including the Survey, and (iv) all other costs incurred by Hall County. Glades shall pay (i) for the preparation of the limited warranty deed and transfer tax imposed thereon, if any, (ii) all fees and expenses of Glades's attorneys, (iii) all expenses incurred in curing any title defects, and the recording costs of any curative documents or any cancellation fees of existing mortgages, and (iv) all other costs incurred by Glades.

(d) Lease-Management Agreement. This Agreement is contingent upon the successful execution of a Lease-Management Agreement (the "Lease-Management Agreement") between Glades and Gainesville and Hall County Development Authority. (or some other mutually acceptable authority) to be executed within a reasonable period of time following the execution of this Agreement; however, in any event the Lease-Management Agreement shall be executed prior to December 31, 2000. The Lease-Management Agreement shall incorporate the various terms and conditions embodied within the Memorandum of Understanding which are not otherwise specified in this Agreement.

(c) Relocation of Glades Farm Road. If the Reservoir is constructed by either Hall County or the Glades as provided in the Lease-Management Agreement, it is acknowledged that the existing Glades Farm Road will need to be relocated upon other property owned by the Glades and others (the "Relocated Glades Farm Road"). The location of the Relocated Glades Farm Road will be determined by Hall County with the advice and assistance of Glades and with the ultimate approval of Georgia Department of Transportation; provided however, in any event Hall County and Glades agree and acknowledge that the general location of the Relocated Glades Farm Road will run over the top of the dam. Any portions of the old right-of-way of the existing Glades Farm Road that is not impounded within the Reservoir Site shall be abandoned by Hall County in accordance with O.C.G.A. Section 32-7-4, wherein portions of the right-of-way to be abandoned will be offered to the Glades under the above statute in exchange for an equal amount of necessary right of way for the Relocated Glades Farm Road. Any additional right-of-way needed by Hall County that exceeds the amount that has been exchanged between Glades and Hall County, shall be purchased by Hall County at the then prevailing fair market value price. In the event that the Glades constructs the dam within the Glades Permitting Option Term as described in the Lease-Management Agreement, Hall County, at its sole cost and expense, shall construct the Relocated Glades Farm Road concurrently with the Glades construction of the dam site, using its best efforts to complete construction within one (1) year of completion of the dam. During and after Hall County's construction of the Relocated Glades Farm Road, Glades shall have the option, but not the obligation, to install and maintain private and semi-public utilities within the right of way of Relocated Glades Farm Road.

(f) Off Site Property. Hall County shall acquire, at its expense, all other property and rights owned by third parties other than Glades, which property is necessary for the effective ownership, operation and maintenance of the Reservoir ("Off Site Property"). The parties herein acknowledge that Hall County shall not survey or acquire the Off Site Property until after the Closing Date contemplated in this Agreement. Hall County agrees to encumber, for the benefit of Glades, the Off Site Property with all easements, restrictions and the like contemplated within this Agreement and the Lease-Management Agreement. Specifically, the Off Site Property shall have no physical or legal access to the Reservoir.

(g) Restrictions and Zoning. With the Reservoir being the centerpiece, Glades has made the commitment to reasonably formulate a first-class master-planned concept for the development of the surrounding property. The master development plan will be prepared by Glades with the full participation of Hall County. Provided that the same does not materially adversely affect the Reservoir, Hall County will grant to the Glades any easements over the Reservoir Site that are reasonably necessary to implement the master development plan. Such easements shall include, without limitation, access and utility easements to islands within the Reservoir. Hall County shall further participate in the planning and development of all infrastructure needs both within and outside of the Glades development. Hall County will use its best efforts to aggressively bring infrastructure, such as sewer and water, to the Glades area prior to the construction of the Reservoir. Hall County will seek the input and advice of Glades in determining the location and time of need relative to such infrastructure. The master plan will contain certain restrictions which will enforce the preservation of the master-plan mixed-use concept and gives notice to the landowners relative to Hall County's rights under this Agreement.

Hall County agrees to give favorable consideration to the extent allowed by law to the utilization of the property constituting the Reservoir Site in any land use or area calculations provided by the Glades and utilized in determining "open space and density requirements" under the Master Development Plan as that plan may be the subject of a rezoning application or other zoning considerations under the Hall County Zoning Resolution and Land Development regulations as now exists or may be hereafter amended. Realizing that the present Hall County Commission cannot bind its successors with regard to the exercise of independent legislative or judicial discretion, it is the express desire of the present Hall County Commission to urge the inclusion of the Reservoir Site in any open space requirements which may at some future date be considered by subsequent Hall County zoning authorities. In furtherance of the parties intent, at Closing, Hall County shall grant to the Glades an open space easement (the "Open Space Easement") over the Reservoir Site. The sole and exclusive purpose of the Open Space Easement is to insure that the Reservoir Site is utilized in any land use calculations in determining "Open Space and Density Requirements" under the Master Development Plan and pertinent zoning and land development regulations. In any event, the Open Space Easement shall not adversely impair, hinder, alter, or diminish any right or obligation of Hall County, the Glades, or both, under this Agreement or the Lease-Management Agreement. Once approved, the present Hall County Commission urges that the Master Plan be adopted as a part of the Hall County Comprehensive Land Use Plan in order to insure the permitted planned growth of the Glades community for the ensuing long term.

(h) Dismissal of Pending Condemnation Action. At Closing, Hall County shall dismiss with prejudice that certain pending Condemnation Action styled as Civil Action File #97-CV-2394B. Hall County and Glades shall execute any and all documents necessary to release from one another all claims and demands arising from said Condemnation Action. Further, at Closing, Hall County shall cancel and terminate that certain Right of First Refusal dated November 24, 1997 recorded in Deed Book 3028, page 218, Hall County, Georgia Records, as extended.

(i) Multiple Ownership of the Property. The Property consists of tracts owned by Glades Land and Cattle Corporation and Mayr-Melnhof Holding, A.G. individually and not by the Glades collectively. At the request of both parties, the parties have executed this Agreement as one option agreement rather than separate option agreements. The obligation of Hall County to close the sale and purchase contemplated in this Agreement is subject to Hall County's acquisition of title, free and clear of all title defects except for the Permitted Title Exceptions, to the entirety of the Property.

(j) Timber Ownership. At Closing, Glades shall retain and reserve ownership of all timber located on the Property and Glades shall have the right to manage the Property and harvest all timber located thereon at any time prior to the construction of the Reservoir as described in the Lease-Management Agreement. If construction of the Reservoir is conducted by Hall County as described in the Lease-Management Agreement, Glades will cooperate with Hall County in scheduling timber harvests in such a manner as to not impede the Reservoir and dam construction.

(k) Inundation Zone Development. Hall County and Glades agree that the dam to be constructed for the Reservoir shall be built according to specifications that permit the dam to be designated as a Category One Dam. The parties acknowledge that portions of the property below the Below Dam Site Property may be designated as "Inundation Zones" as a result of a possible



catastrophic failure of the dam. Subject to applicable federal and state law, Glades anticipates developing all or portions of the property that lies within the Inundation Zones. Hall County agrees that it shall not institute any restrictions that are more stringent or restrictive than current or future federal and state law relative to the use and development of Inundation Zones.

(l) **Right to Repurchase.** The Property and any and all rights and interests appurtenant thereto are subject to the Right to Repurchase (as defined herein) held by Glades its successors and assigns, on the following terms and conditions (which the deed by which title to the Property is conveyed to Hall County at Closing will incorporate):

(i) Glades has reserved and does hereby reserve unto itself, its successors and assigns, and Hall County does hereby grant and convey to Glades, its successors and assigns, the right and option, but not the obligation, to repurchase the Property from Hall County, or its successors, assigns or successors-in-title (the "Right to Repurchase"), for the Repurchase Price (as hereinafter defined) and on the terms and conditions contained in this Section if Glades fails to exercise the Glades Permitting Option (as defined in the Lease-Management Agreement) during the Glades Permitting Option Term (as defined in the Lease-Management Agreement) and thereafter Hall County determines that the Property is no longer needed by Hall County for Reservoir purposes. The Right to Repurchase shall in all respects be subject to the terms and provisions of O.C.G.A. Section 36-9-3(g). The Right to Repurchase set forth in this Section shall automatically cease and terminate upon the construction of the Reservoir without any further action on any part of the parties hereto; provided, however, Glades shall, upon request of Hall County, execute a termination agreement in recordable form terminating the Right to Repurchase and shall deliver the same to Hall County;

(ii) If Glades exercises the Right to Repurchase in accordance with this Section, then the closing will occur in the law offices of Fortson, Bentley & Griffin, 440 College Avenue North, Suite 220, Athens, Georgia 30601, at 10:00 a.m. on that date which is sixty (60) days after the delivery to Hall County of exercise notice, or such earlier date upon which Hall County and Glades agree;

(iii) At the closing held in accordance with this Section, Hall County shall execute and deliver to Glades: (a) a limited warranty deed conveying title to the Property to Glades, its successors and assigns, subject only to the Permitted Exceptions and such other matters established against title after the closing date with the express written consent of Glades (except financing liens established at or after closing by Hall County which Hall County shall discharge prior to or at the time of the reconveyance); (b) an affidavit of a duly authorized officer of Hall County that (i) there are no boundary disputes affecting the Property, (ii) the Property is free and clear of all defects in title other than Permitted Exceptions or matters approved by Glades, if any, (iii) no improvements or repairs have been made on the Property within ninety-five (95) days prior to such closing, or if such improvements or repairs have been made, that all costs with respect thereto have been paid in full, (iv) there are no pending suits, proceedings, judgments or liens or executions against Hall County or its lessees which affect title to the Property, (v) there are no persons or other parties in possession of the Property who have a right or claim to possession, (vi) such other documents, certificates, instruments and the like, as may be required pursuant to this Agreement or reasonably necessary or helpful to carry out the respective obligations under this Agreement with respect to the closing.

(iv) In the event that Glades elects to exercise the Right to Repurchase in accordance with this Section, the purchase price of the Property (the "Repurchase Price") is the Purchase Price paid by Hall County to Glades under this Agreement plus interest bearing at the interest rate of four and one-half percent (4 ½%) per annum, which interest shall begin accruing on the original closing date and shall end upon the date of the closing of the repurchase by Glades as described in this Section. The Repurchase Price shall be paid by Glades to Hall County in cash or other funds available for immediate credit and Hall County shall pay the transfer tax, if any, imposed on the deed and all other closing costs shall be paid by Glades except that each party shall pay their own respective attorneys fees. Real Estate taxes, if any, will be prorated as of the closing of the repurchase of the Property. The Lease-Management Agreement shall be terminated between the parties effective the date of closing.

(v) If Hall County fails to reconvey the Property in accordance with this Section, then Glades is entitled to exercise any and all remedies at law or in equity, including, without limitation, the right to specifically enforce the conveyance of the Property to Glades.

(m) **Little Glades Farm Lake.** Glades has expressed an interest in studying the feasibility of constructing a second dam to be located across the western portion of the Reservoir, thereby creating two (2) separate lakes. The smaller lake (hereinafter "Little Glades Farm Lake") would inundate property at an elevation slightly higher than the 1,180 elevation of the larger lake and would contain approximately 100 acres of land. At the 1,180 elevation, the property that constitutes Little Glades Farm Lake contains 97.8403 acres designated as Parcel #2 on the Survey with a flood zone that contains 8.590 acres designated as Flowage Easement #3 on the Survey. Hall County agrees to accommodate Glades relative to the feasibility study of Little Glades Farm Lake subject to the following terms and conditions:

(i) All costs and expenses incurred in the feasibility study of Little Glades Farm Lake shall be at the sole cost and expense of Glades.

(ii) At the time of Closing as set forth in Section 26(b) herein, the ownership of the property that constitutes Little Glades Farm Lake shall remain in the name of Glades and shall not be purchased by Hall County.

(iii) Subject to the extension described hereinbelow, within five (5) years of the Closing Date set forth in Section 26(b) herein, Glades shall notify Hall County of its decision to construct or not to construct the dam necessary to create Little Glades Farm Lake. If Glades notifies Hall County that it does not intend to construct Little Glades Farm Lake, then Hall County shall purchase from Glades the property and flood zone that constitutes Little Glades Farm Lake which is designated as Parcel #2 (97.8403 acres) and Flowage Easement #3 (8.590 acres) on the Survey. Closing shall occur within 180 days of Glades notice to Hall County of its intention not to construct Little Glades Farm Lake. The purchase price for the property and flood zone that constitutes Little Glades Farm Lake shall be the sum of \$5,365.00 per acre as shown on the Survey plus interest bearing at the rate of four and one-half (4.5%) percent per annum, which interest shall begin accruing on the original Closing Date specified in Section 26(b) herein and shall end upon the date of the closing of the purchase by Hall County as described in this Section. Upon Hall County's acquisition of the property described in this Section, thereafter such property shall be subject to the terms and conditions contained in this Agreement and the

Lease Management Agreement as if it was acquired by Hall County on the original closing date specified in Section 26(b) herein.

(iv) If Glades does not complete its feasibility study relative to the construction of Little Glades Farm Lake within the five (5) year period described hereinabove, then Glades shall have the option to extend such feasibility period for an additional five (5) year term by Glades giving notice to Hall County of its election to extend, which notice must be provided prior to the expiration of the original five (5) year feasibility period (the "Feasibility Extension Period"). During the Feasibility Extension Period, if Glades notifies Hall County that it does not intend to construct Little Glades Farm Lake, then Hall County shall purchase from Glades the property and flood zone that constitutes Little Glades Farm Lake shown as Parcel #2 (97,8403 acres) and Flowage Easement #3 (8,590 acres) as shown on the Survey. The Closing shall occur within 180 days of Glades notice to Hall County of its election not to construct Little Glades Farm Lake. The purchase price for the property and flood zone that constitutes Little Glades Farm Lake shall be the sum of \$5,365.00 per acre as shown on the Survey plus interest bearing at the rate of four and one-half (4.5%) percent per annum, which interest shall begin accruing on the original Closing Date specified in Section 26(b) herein and shall end upon the date of the expiration of the original five (5) year feasibility period as described hereinabove. Upon Hall County's acquisition of the property described in this Section, thereafter such property shall be subject to the terms and conditions contained in this Agreement and the Lease Management Agreement as if it was acquired by Hall County on the original Closing Date specified in Section 26(b) herein.

(v) If during the feasibility period, or Feasibility Extension Period if so exercised, Glades notifies Hall County that Glades intends to construct Little Glades Farm Lake, then Little Glades Farm Lake shall be owned and operated by Glades as a private lake which shall not be subject to the terms and conditions of the Lease Management Agreement. Provided however, Glades shall not operate Little Glades Farm Lake in any manner which would create or cause a material adverse impact or effect on the larger reservoir. The construction of the dam associated with Little Glades Farm Lake shall be at the sole cost and expense of Glades, which construction and permitting thereof shall occur contemporaneous with the construction and permitting of the larger reservoir. All construction and engineering plans of Little Glades Farm Lake shall be subject to Hall County's approval, which approval shall not be unreasonably withheld or delayed. Hall County shall fully cooperate, assist and support Glades with regard to any necessary permits associated with the construction of Little Glades Farm Lake.

(vi) In order to protect and preserve the site of Little Glades Farm Lake, at the time of the original Closing set forth in Section 26(b) herein, Glades shall grant and convey to Hall County a non-exclusive flood easement over the property that constitutes Little Glades Farm Lake.

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals the day and year written.

MAYR-MELNHOF HOLDING, A.G.

DATE: 12<sup>th</sup> Oct. 2000

By: [Signature] (SEAL)  
Clemens Goess-Saurau

As Its: Managing Director

DATE: 12<sup>th</sup> Oct. 2000

GLADES LAND AND CATTLE CORPORATION

By: [Signature] (SEAL)  
Clemens Goess-Saurau

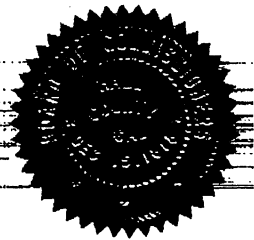
As Its: President

HALL COUNTY

DATE: Oct 12, 2000

BY: [Signature]

As Its: Chairman



## EXHIBIT "A"

ALL those tracts or parcels of land, situate, lying and being in the 12<sup>th</sup> Land District, 810<sup>th</sup>, 1695<sup>th</sup>, and 434<sup>th</sup>, G.M.D., Hall County, Georgia, as being more particularly shown on that certain boundary survey prepared by Post, Buckley, Schuh & Jernigan, Inc. dated September 25, 2000, which plat of survey is incorporated herein by reference thereto; provided however that said survey is subject to final revisions and approval by both Hall County and Glades.

## OPTION AGREEMENT

## FOR THE SALE AND PURCHASE OF REAL PROPERTY

THIS AGREEMENT, made and entered into this 12<sup>th</sup> day of October, 2000, by and between **MAYR-MELNHOF HOLDING, A.G.**, a Liechtenstein corporation doing business as **Glades Woodland Farms and GLADES LAND AND CATTLE CORPORATION**, a Georgia Corporation, whose mailing address is c/o 405 Gaines School Road, Athens, Georgia 30605 (hereinafter collectively referred to as "Glades") and **HALL COUNTY, GEORGIA**, a body politic existing under the laws of the State of Georgia, whose mailing address is 116 Spring Street, Gainesville, Georgia 30501 (hereinafter referred to as "Hall County").

WHEREAS, Glades owns approximately 7,000 acres located in Hall County, Georgia ("Glades Land"); and

WHEREAS, Glades and Hall County have identified the need and general location of a reservoir project to be located upon a portion of the Glades Lands (hereinafter the "Reservoir"); and

WHEREAS, the parties adopted a mission statement which recognizes the united cooperative effort to study, permit and construct a reservoir and to develop a long-term operation and management policy for the Reservoir for the maximum benefit of the private community and governmental sector; and

WHEREAS, over the past several years the parties have invested substantial financial and human resources in the study and planning of the Reservoir and have concluded that the Reservoir, as an amenity as well as a water source, is mutually beneficial to both Glades and Hall County; and

WHEREAS, on April 14, 2000, Glades and Hall County entered into that certain Memorandum of Understanding which sets forth the major business terms relative to the Reservoir ("Memorandum of Understanding") and the purpose of this Agreement, together with that certain Lease-Management Agreement as described herein, is to more definitively set forth the parties rights and obligations as expressed in the Memorandum of Understanding.

## WITNESSETH

FOR AND IN CONSIDERATION of the sum of **TEN AND NO/100 Dollars (\$10.00)** (the "Option Payment"), and in settlement of all claims arising by virtue of that certain Condemnation Action styled 97-CV-2394B, and other good and valuable consideration in hand paid to Glades, receipt and sufficiency of which are hereby acknowledged by Glades, Glades does hereby grant and convey to Hall County for the term hereof an exclusive and irrevocable option (the "Hall County Option") to purchase upon the terms and conditions hereinafter set forth that

certain tract or parcel of land located in Hall County, Georgia, being described as the property which constitutes the Reservoir at a normal pool elevation of 1,180 MSL (containing approximately 733 acres, more or less) and the property necessary to construct and operate the dam site, and associated spill ways, at normal pool elevation of 1,180 MSL. Further, the Reservoir shall also including the property that constitutes a flood zone (the "Flood Zone") above the 1,180 normal pool elevation, the exact dimensions to be determined by engineering. Hall County and Glades anticipate that the Flood Zone shall be that certain property lying between the elevations of 1,180 MSL and 1,183 MSL. Subject to Hall County's flood rights, as established in the Lease-Management Agreement, within the Flood Zone, Glades shall reserve a perpetual exclusive easement over the Flood Zone for general development purposes recognizing however that certain types of permanent structures such as buildings may be prohibited or regulated within the Flood Zone. The estimated total acreage contained within the Reservoir including the Flood Zone is approximately 805 acres, more or less, together with the property necessary for the construction and operation of a future "Pump Storage Site", all as being more particularly described on Exhibit "A" attached hereto and made a part hereof (hereafter collectively referred to as the "Property"). LESS AND EXCEPT HOWEVER, all timber, trees, shrubbery, and other wood products located on the Property. Glades shall, at Hall County's expense, have the Reservoir and all other property necessary for the operation of the Reservoir (such as the dam site, Flood Zone, Off-Site Property (as hereinafter defined), the Below Dam Site Property (as hereinafter defined), access roads, the Pump Storage Site, etc., collectively the "Reservoir Site") surveyed by a Georgia Registered Surveyor, the surveyor and Survey being subject to the reasonable approval of both parties (the "Survey"). The Survey shall also identify the acreage below the dam site which shall be subject to certain flood and spillway easements in favor of Hall County (the "Below Dam Site Property"); provided however that Glades continued ownership of the Below Dam Site Property permits the Glades to utilize such property for any and all uses and purposes that do not unreasonably interfere or impede Hall County's flood rights thereon. The Survey shall also identify the location and amount of property necessary for a future "Pump Storage Facility" (the property that constitutes the Pump Storage Facility is hereinafter the "Pump Storage Site"). The Pump Storage Site shall also include an easement, not to exceed twenty (20') feet in width, from the Pump Storage Facility to the Reservoir and from the Pump Storage Facility to the Chatahoochee River or Lake Lanier, as the case may be. The Pump Storage Site shall also include an access easement from Relocated Glades Farm Road to the Pump Storage Facility. In the event Glades develops the property in the vicinity of the Pump Storage Facility, Hall County agrees that any easements appurtenant to the Pump Storage Site may be relocated by Glades in order to lie within certain road rights of way constructed by Glades in such development. After the Survey shall have been completed, Exhibit "A" hereto shall automatically be amended to conform to the legal description based on the Survey, and, thereafter, said new legal description shall be the legal description of the Property for all purposes relating to this Agreement, and no written amendment shall be necessary.

1. **TERM AND EXERCISE OF OPTION.** The term of the Hall County Option shall commence upon the date of full execution of this Agreement and can be exercised by Hall County commencing on January 15, 2001 and shall terminate July 1, 2001; if the Hall County Option is exercised by Hall County as provided herein, thereafter this Agreement shall constitute a binding Contract For Purchase and Sale without the need of any further agreement between the parties. If

Hall County fails to exercise the Hall County Option, then Glades shall have the sole and exclusive right and option from July 2, 2001 to September 1, 2001, to require Hall County to purchase the Property upon such terms and conditions as described herein (the "Glades Option"). If the Glades Option is exercised by Glades as provided herein, thereafter this Agreement shall constitute a binding Contract For Purchase and Sale without the need of any further agreement between the parties. If Glades fails to exercise the Glades Option as provided herein, thereafter this Agreement shall automatically become null and void and the parties shall have no further rights or obligations to one another.

2. **PURCHASE PRICE.** If the Hall County Option or the Glades Option is exercised as provided herein, the purchase price for all the Property within the Reservoir Site, shall be the sum of Five Thousand Three Hundred Sixty-Five and No/100 (\$5,365.00) Dollars per acre. The total purchase price shall be determined by multiplying the price per acre by the total number of acres to the nearest 1/1000th thereof as determined by the Survey (the "Purchase Price"). The Purchase Price shall be paid in cash or immediately collectable funds at closing.

3. **WARRANTIES OF TITLE.** Hall County shall have until March 1, 2001 in which to examine title to the Property and to furnish Glades with a written statement of objections to the title to the Property (hereinafter referred to as an "Objection"), if any, other than (i) licenses and easements, if any, for public utilities and flood easements in favor of the Corp of Engineers; (ii) any and all matters disclosed on the Survey except for those that would materially adversely affect the operation and maintenance of the Reservoir, (iii) matters contained in the Lease-Management Agreement, and (iv) liens for ad valorem taxes not yet due and payable; (hereinafter referred to as the "Permitted Exceptions"). Such written statement shall be accompanied by a copy of the Hall County's title report disclosing such objections to title. In the event Glades is notified of an Objection, Glades agrees that it shall in good faith, promptly cure any such Objection which it can reasonably cure at a reasonable cost on or before the Closing Date, as that term is hereinafter defined, provided, however, that Glades shall not be required to satisfy and discharge any mortgage encumbering the Property until the Closing Date. In the event Glades fails or refuses to cure any Objection prior to the Closing Date, Hall County may, at its option, either (i) terminate this Agreement and be entitled to a full refund of the Option Payment, (ii) extend the time for closing to permit Glades to cure such Objection, or (iii) accept title to the Property subject to such Objection. Glades and Hall County agree that the issue of marketability of the title to the real property covered by this Agreement shall be determined in accordance with Georgia law as supplemented by title standards of the State Bar of Georgia. Any objection which comes within the scope of any such title standard may be cured by Glades delivering to Hall County on or before the Closing Date, the affidavits or other title papers or documents, if any, required under the applicable title standards to cure such Objection to the satisfaction of the title insurance company. In any event, it is specifically understood and agreed that the title to be conveyed hereunder shall be title which Lawyers Title Insurance Corporation will insure under its standard owner's policy, at its regular premium therefor, subject only to the usual policy exceptions and the permitted exceptions herein defined.

4. **DAMAGE TO PROPERTY AND CONDEMNATION.** There is no substantial value in the improvements on the Property and Glades shall have no obligation to restore any damage to

or destruction of any improvements. Should the Property or any portion thereof be condemned or appropriated by public authority, be taken by proceedings in eminent domain or notice thereof be served on Glades prior to the time the sale is consummated, then at the option of Hall County:

(a) This Agreement shall be declared null and void and Hall County shall be entitled to immediate refund of any Option Payments paid hereunder; or

(b) Hall County may consummate the sale and receive such condemnation award. This election is to be exercised within ten (10) days after Hall County has been notified in writing by Glades of the amount of the condemnation award, if any, Glades will receive on the condemnation.

5. INSPECTION. After the effective date hereof Hall County shall have the right to go on the Property personally or through agents, employees and contractors to inspect, examine and survey same and otherwise do all that may be necessary to determine the boundaries of the Property and to verify the accuracy of the warranties of Glades with respect to the condition of the Property. To the extent permitted by law, Hall County shall hold Glades harmless for any and all costs, expenses, liabilities and damages resulting from the performance by Hall County or its representatives of such tests, inspections or examination.

6. NOTICES. Unless otherwise provided herein, all notices and demands herein required shall be in writing and shall be sent by either (a) United States Certified Mail, return receipt requested, postage prepaid, or (b) national overnight delivery service with return receipt, delivery charge prepaid, or (c) by facsimile transmission with confirmation report. Notices sent by United States Certified Mail as set forth above shall be effective three (3) days after the same is deposited with the United States Postal Service, postage prepaid. Notices sent by national overnight courier service shall be effective one (1) day after depositing the same with courier service, delivery fee prepaid, marked for next day delivery. Notices sent by facsimile shall be effective as of the date of receipt shown on the confirmation report.

AS TO GLADES:

Mayr-Melnhof Holding, A.G.  
c/o Carl R. Nichols  
Nichols Land & Investment  
405 Gaines School Road  
Athens, Ga 30605

COPY TO:

G. Marcus Hodge  
Fortson, Bentley & Griffin, P.A.  
440 College Avenue North, Suite 220  
Athens, Ga 30601

AS TO HALL COUNTY:

Hall County  
Attn: Jim Shuler, County Administrator  
118 Spring Street  
Gainesville, Georgia 30501

COPY TO:

William H. Blalock, Jr.  
Stewart, Melvin & Frost  
200 Main Street, 6<sup>th</sup> Floor  
Gainesville, Ga 30501

If the time period by which any right, option or election provided under this Agreement must be exercised, or by which any act required hereunder must be performed, or by which the closing must be held, expires on a Saturday, Sunday or legal holiday, then such time period shall be automatically extended through the close of business on the next regular business day or, in the case of the closing, to the same time and place on the next regular business day, which is not a Saturday, Sunday or legal holiday.

7. EXECUTION OF DOCUMENTS. At the closing each party shall execute all deeds, affidavits, closing statements and other pertinent documents necessary to consummate the purchase and sale as contemplated under the terms of this Agreement.

8. NONMERGER. This Agreement shall not be merged into the documents executed at the closing, but shall survive the closing, and the provisions hereof shall remain in full force and effect.

9. TIME OF ESSENCE. With respect to all the terms and conditions of this Agreement, time is of the essence.

10. ENTIRE AGREEMENT. This Agreement constitutes the entire agreement between the parties hereto and no representations, inducements, promises or agreements, oral or otherwise, not embodied herein, shall be of any force or effect, unless same be in writing, signed by both Hall County and Glades and attached hereto.

11. BINDING EFFECT. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto, their respective heirs, assigns, personal representatives or successors in interest.

12. GENDER AND WORD CONSTRUCTION. The masculine, feminine or neuter, wherever used herein, shall be deemed to represent the masculine, feminine or neuter, whichever is appropriate; and the singular or plural forms of words, wherever used herein, shall be deemed to represent the form, singular or plural, which is appropriate.

13. CAPTIONS. The captions and headings throughout this Agreement are for convenience and reference only. The words contained therein shall in no way be deemed or held to define, limit, describe, explain, modify or amplify, or add to the interpretation, construction or meaning of any of the provisions or the scope or intent of this Agreement, nor in any way affect this Agreement.

14. EXHIBITS. Each and every exhibit referred to or otherwise mentioned in this Agreement is attached to this Agreement and is and shall be construed to be made a part of this Agreement by such reference or other mention at each point at which such reference or other



mention occurs, in the same manner and with the same effect as if each exhibit were set forth in full and at length every time it is referred to or otherwise mentioned.

15. COUNTERPARTS. This Agreement may be executed in several counterparts, each of which shall constitute an original and all of which together shall constitute one and the same instrument.

16. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of Georgia.

17. DATE OF AGREEMENT. For purposes of this Agreement, the date of this Agreement shall be deemed to be the latter of the dates of execution of this Agreement by Glades and Hall County, such date being opposite the signatures of Hall County and Glades. Such date shall be inserted in the preamble on page one (1) of this Agreement.

18. COMMISSION. Commission to be paid in connection with this transaction has been negotiated between Glades and Nichols Land & Investment Co. (hereinafter "Broker") and shall be paid pursuant to a separate brokerage commission agreement between Glades and Broker. Glades and Hall County hereby represent each to the other that they have not disclosed this Agreement or subject matter hereof to any real estate broker, agent or salesman other than the Broker, so as to create any legal claim or right for a real estate commission or compensation with respect to the negotiation of this Agreement or conveyance of the Property. In the event that a broker makes a claim for commission against either one of the parties, that party shall hold harmless the other party from any cost involved in defending against said claim.

Broker has acted as agent in this transaction for Glades and Broker has not acted as agent for Hall County.

19. ASSIGNMENT. Glades and Hall County agree that neither party can assign all or any portion of its right, title and interest in this Agreement to a third party without the consent of the other party. However, the parties acknowledge that Hall County anticipates assigning its interest in this Agreement to the Gainesville and Hall County Development Authority, or some other authority acceptable to both parties, which assignment is hereby consented to by Glades. Notwithstanding anything contained herein to the contrary, Hall County shall not assign portions of this Agreement that relate to obligations or agreements that cannot legally be binding upon or performed by any entity other than Hall County. Provided further however, the parties acknowledge that Glades anticipates assigning its interest in this Agreement to an existing or newly formed entity controlled or owned by Glades, which assignment is hereby consented to by Hall County.

20. SCRIVENER OF AGREEMENT. Should any provision of this Agreement require judicial interpretation, it is agreed that the Court interpreting or construing the same shall not apply a presumption that the terms hereof shall be more strictly construed against one party by reason of the rule of construction that a document is to be construed more strictly against the party who itself or through its agent prepared the same. It being agreed that the agents of all parties have participated in the preparation hereof.

## 21. GLADES' COVENANTS, WARRANTIES AND REPRESENTATIONS

Glades hereby covenants, warrants and represents to Hall County the following:

(a) That Glades, or a successor entity owned and controlled by Glades, is and will continue to be, through and including the time of closing hereunder, the lawful owner of full and marketable fee simple title to the Property, subject to the Permitted Exceptions;

(b) That Glades has not entered into any other contract, option or other agreement with any other party concerning the sale of all or any portion of the Property, and that Glades will not enter into any such contract, option agreement or other agreement through and including the time of closing contemplated hereunder;

(c) With the exception of the pending condemnation action in favor of Hall County, that Glades has not received any notice of any pending or threatened condemnation or similar proceeding affecting the Property or any portion thereof, nor is the Glades aware that any such action is presently contemplated;

(d) That, other than customary hunting leases, there are no leases or tenancies affecting all or any portion of the Property;

(e) That to the best of Glades' current knowledge and belief, no hazardous wastes, as defined by any Federal, state or local laws or regulations, are now or have ever been manufactured or stored on the Property and the Property is not in violation of, and is not subject to, any pending or threatened proceedings or investigations relating to any Federal, state or local environmental or health laws or regulations applicable to the Property;

(f) That the party executing and delivering this Agreement on behalf of Glades has full power and authority to enter into this Agreement;

(g) That to the best of Glades's current knowledge and belief, there are no landfills, dumps, or underground storage tanks located on the Property.

## 22. HALL COUNTY COVENANTS, WARRANTIES AND REPRESENTATIONS

Hall County is a politic body existing under the laws of the State of Georgia and this Agreement and all other contracts, documents and instruments executed and delivered by Hall County in connection with or pursuant to this Agreement are legal, valid and binding obligations of Hall County effective and enforceable in accordance with their respective terms and have been duly authorized by all necessary actions; and this Agreement and the execution and delivery of this Agreement and the performance hereof do not contravene, result in a breach of, constitute a default hereunder, or conflict with, any agreement, indenture, or other instrument to which Hall County is a part or by which it is bound, any judgment, decree or order or award of any court, governmental body, or any law or rule or regulation applicable to Hall County.

23. **SHORT FORM OPTION TO PURCHASE.** Upon the request of either party, Hall County and Glades shall execute a Short Form Option to Purchase for recording, which shall contain such form and substance as either party shall reasonably request.

24. **DELIVERIES AT CLOSING.** On the Closing Date, the Closing shall occur as follows, subject to satisfaction of all the terms and conditions of this Agreement.

(a) Glades shall convey to Hall County good and marketable fee simple title to the Property, by limited warranty deed duly executed and in recordable form, without exception for any title objections other than the Permitted Exceptions and such objections as are waived by Hall County pursuant to Section 3 hereof.

(b) Glades shall deliver to Hall County an affidavit in form sufficient to enable Hall County to have deleted from its policy of title insurance any exception for unfilled mechanics' and materialmen's liens. Such affidavit shall also include representations that there are no legal proceedings against Glades which could affect Glades's title to the Property or the right or power of Glades to convey to Hall County the Property in accordance with this Agreement.

(c) Glades shall deliver to Hall County all other documentation as may be reasonably required by the attorney for Hall County or its title insurer to carry out the terms, covenants, conditions and intent of this Agreement.

(d) A certificate evidencing the reaffirmation of the truth and accuracies of Glades's covenants, warranties and representations set forth in this Agreement.

(e) Glades and Hall County shall each deliver to the other evidence of their respective authority to execute and deliver this Agreement and any other documents required hereunder.

(f) Broker shall execute and deliver a Broker's Lien Waiver which includes, without limitation, (i) an acknowledgment by Broker of the receipt of the entire balance due to Broker for all services rendered by Broker relating to the Property, and (ii) a waiver by Broker of any claim or lien which Broker may have against Hall County, Glades or the Property by reason of the transaction contemplated by this Agreement.

(g) Hall County and Glades shall execute and deliver, as applicable, such other documents, certificates, instruments and the like, as may be required under this Agreement or reasonably acceptable to the executing party and reasonably necessary or helpful to carry out their respective obligations under this Agreement with respect to the closing.

(h) Upon Glades's delivery at the Closing of the deeds, affidavits, and other documents described above, Hall County shall pay the Purchase Price to Glades, as provided in Section 2 hereof.

25. **Remedies.** If the sale and purchase of the Property as contemplated by this Agreement is not consummated on account of Glades default hereunder, the Option Payment shall be returned to Hall County on demand, without prejudice to any other rights or remedies of Hall County hereunder, at law or in equity, including the right to seek specific performance of this

Agreement. If the sale and purchase of the Property as contemplated by this Agreement is not consummated on account of Hall County's default hereunder, Glades may pursue all rights and remedies available at law or in equity, including the right to seek specific performance of this Agreement.

26. **SPECIAL STIPULATIONS.** If conflicting with any other provisions contained herein, the following special stipulations shall control:

(a) **Adjustments.** All unpaid assessments as of the Closing shall be paid by Glades. All ad valorem property taxes affecting the Property for the calendar year of the closing shall be prorated between Hall County and Glades, as of the Closing. In the event that the bill for ad valorem taxes is not available at the time of the Closing, the proration shall be based upon either the tax bill for the immediately preceding year or the current millage rate and evaluation, if available. In the event that upon the availability of tax information for the calendar year of the Closing if this proration has resulted in a malapportionment of ad valorem taxes, Glades and Hall County agree to make an adjustment between themselves with any deficiency being paid on demand by the other party. This agreement to adjust shall survive the Closing.

(b) **Closing.** Closing shall occur within forty-five (45) days from the date of the exercise of the Hall County Option or within forty-five (45) days from the exercise of the Glades Option if Hall County fails to exercise the Hall County Option (the "Closing Date"); provided however, that in any event closing shall not occur prior to April 1, 2001. The closing shall be at such exact time and place as mutually agreed upon by the parties. If the parties fail to agree to such time and place, the closing shall occur at 10:00 a.m. on the forty-fifth (45th) day following Hall County's exercise of the Hall County Option or Glades exercise of the Glades Option, as the case may be, in Hall County's attorneys law offices of Stewart, Melvin & Frost, 200 Main Street, 6<sup>th</sup> Floor, Gainesville, Georgia 30503.

(c) **Closing Costs.** Hall County shall pay (i) all fees and expenses of Hall County's attorneys, (ii) all costs of title insurance, title examination, and recording fees, (iii) all fees and expenses for any inspections, or analyses of the Property undertaken by Hall County, including the Survey, and (iv) all other costs incurred by Hall County. Glades shall pay (i) for the preparation of the limited warranty deed and transfer tax imposed thereon, if any, (ii) all fees and expenses of Glades's attorneys, (iii) all expenses incurred in curing any title defects, and the recording costs of any curative documents or any cancellation fees of existing mortgages, and (iv) all other costs incurred by Glades.

(d) **Lease-Management Agreement.** This Agreement is contingent upon the successful execution of a Lease-Management Agreement (the "Lease-Management Agreement") between Glades and Gainesville and Hall County Development Authority, (or some other mutually acceptable authority) to be executed within a reasonable period of time following the execution of this Agreement; however, in any event the Lease-Management Agreement shall be executed prior to December 31, 2000. The Lease-Management Agreement shall incorporate the various terms and conditions embodied within the Memorandum of Understanding which are not otherwise specified in this Agreement.

(e) Relocation of Glades Farm Road. If the Reservoir is constructed by either Hall County or the Glades as provided in the Lease-Management Agreement, it is acknowledged that the existing Glades Farm Road will need to be relocated upon other property owned by the Glades and others (the "Relocated Glades Farm Road"). The location of the Relocated Glades Farm Road will be determined by Hall County with the advice and assistance of Glades and with the ultimate approval of Georgia Department of Transportation; provided however, in any event Hall County and Glades agree and acknowledge that the general location of the Relocated Glades Farm Road will run over the top of the dam. Any portions of the old right-of-way of the existing Glades Farm Road that is not impounded within the Reservoir Site shall be abandoned by Hall County in accordance with O.C.G.A. Section 32-7-4, wherein portions of the right-of-way to be abandoned will be offered to the Glades under the above statute in exchange for an equal amount of necessary right of way for the Relocated Glades Farm Road. Any additional right-of-way needed by Hall County that exceeds the amount that has been exchanged between Glades and Hall County, shall be purchased by Hall County at the then prevailing fair market value price. In the event that the Glades constructs the dam within the Glades Permitting Option Term as described in the Lease-Management Agreement, Hall County, at its sole cost and expense, shall construct the Relocated Glades Farm Road concurrently with the Glades construction of the dam site, using its best efforts to complete construction within one (1) year of completion of the dam. During and after Hall County's construction of the Relocated Glades Farm Road, Glades shall have the option, but not the obligation, to install and maintain private and semi-public utilities within the right of way of Relocated Glades Farm Road.

(f) Off Site Property. Hall County shall acquire, at its expense, all other property and rights owned by third parties other than Glades, which property is necessary for the effective ownership, operation and maintenance of the Reservoir ("Off Site Property"). The parties herein acknowledge that Hall County shall not survey or acquire the Off Site Property until after the Closing Date contemplated in this Agreement. Hall County agrees to encumber, for the benefit of Glades, the Off Site Property with all easements, restrictions and the like contemplated within this Agreement and the Lease-Management Agreement. Specifically, the Off Site Property shall have no physical or legal access to the Reservoir.

(g) Restrictions and Zoning. With the Reservoir being the centerpiece, Glades has made the commitment to reasonably formulate a first-class master-planned concept for the development of the surrounding property. The master development plan will be prepared by Glades with the full participation of Hall County. Provided that the same does not materially adversely affect the Reservoir, Hall County will grant to the Glades any easements over the Reservoir Site that are reasonably necessary to implement the master development plan. Such easements shall include, without limitation, access and utility easements to islands within the Reservoir. Hall County shall further participate in the planning and development of all infrastructure needs both within and outside of the Glades development. Hall County will use its best efforts to aggressively bring infrastructure, such as sewer and water, to the Glades area prior to the construction of the Reservoir. Hall County will seek the input and advice of Glades in determining the location and time of need relative to such infrastructure. The master plan will contain certain restrictions which will enforce the preservation of the master-plan mixed-use concept and gives notice to the landowners relative to Hall County's rights under this Agreement.

Hall County agrees to give favorable consideration to the extent allowed by law to the utilization of the property constituting the Reservoir Site in any land use or area calculations provided by the Glades and utilized in determining "open space and density requirements" under the Master Development Plan as that plan may be the subject of a rezoning application or other zoning considerations under the Hall County Zoning Resolution and Land Development regulations as now exists or may be hereafter amended. Realizing that the present Hall County Commission cannot bind its successors with regard to the exercise of independent legislative or judicial discretion, it is the express desire of the present Hall County Commission to urge the inclusion of the Reservoir Site in any open space requirements which may at some future date be considered by subsequent Hall County zoning authorities. In furtherance of the parties intent, at Closing, Hall County shall grant to the Glades an open space easement (the "Open Space Easement") over the Reservoir Site. The sole and exclusive purpose of the Open Space Easement is to insure that the Reservoir Site is utilized in any land use calculations in determining "Open Space and Density Requirements" under the Master Development Plan and pertinent zoning and land development regulations. In any event, the Open Space Easement shall not adversely impair, hinder, alter, or diminish any right or obligation of Hall County, the Glades, or both, under this Agreement or the Lease-Management Agreement. Once approved, the present Hall County Commission urges that the Master Plan be adopted as a part of the Hall County Comprehensive Land Use Plan in order to insure the permitted planned growth of the Glades community for the ensuing long term.

(h) Dismissal of Pending Condemnation Action. At Closing, Hall County shall dismiss with prejudice that certain pending Condemnation Action styled as Civil Action File #97-CV-2394B. Hall County and Glades shall execute any and all documents necessary to release from one another all claims and demands arising from said Condemnation Action. Further, at Closing, Hall County shall cancel and terminate that certain Right of First Refusal dated November 24, 1997 recorded in Deed Book 3028, page 218, Hall County, Georgia Records, as extended.

(i) Multiple Ownership of the Property. The Property consists of tracts owned by Glades Land and Cattle Corporation and Mayr-Melnhof Holding, A.G. individually and not by the Glades collectively. At the request of both parties, the parties have executed this Agreement as one option agreement rather than separate option agreements. The obligation of Hall County to close the sale and purchase contemplated in this Agreement is subject to Hall County's acquisition of title, free and clear of all title defects except for the Permitted Title Exceptions, to the entirety of the Property.

(j) Timber Ownership. At Closing, Glades shall retain and reserve ownership of all timber located on the Property and Glades shall have the right to manage the Property and harvest all timber located thereon at any time prior to the construction of the Reservoir as described in the Lease-Management Agreement. If construction of the Reservoir is conducted by Hall County as described in the Lease-Management Agreement, Glades will cooperate with Hall County in scheduling timber harvests in such a manner as to not impede the Reservoir and dam construction.

(k) Inundation Zone Development. Hall County and Glades agree that the dam to be constructed for the Reservoir shall be built according to specifications that permit the dam to be designated as a Category One Dam. The parties acknowledge that portions of the property below the Below Dam Site Property may be designated as "Inundation Zones" as a result of a possible

catastrophic failure of the dam. Subject to applicable federal and state law, Glades anticipates developing all or portions of the property that lies within the Inundation Zones. Hall County agrees that it shall not institute any restrictions that are more stringent or restrictive than current or future federal and state law relative to the use and development of Inundation Zones.

(l) Right to Repurchase. The Property and any and all rights and interests appurtenant thereto are subject to the Right to Repurchase (as defined herein) held by Glades its successors and assigns, on the following terms and conditions (which the deed by which title to the Property is conveyed to Hall County at Closing will incorporate):

(i) Glades has reserved and does hereby reserve unto itself, its successors and assigns, and Hall County does hereby grant and convey to Glades, its successors and assigns, the right and option, but not the obligation, to repurchase the Property from Hall County, or its successors, assigns or successors-in-title (the "Right to Repurchase"), for the Repurchase Price (as hereinafter defined) and on the terms and conditions contained in this Section if Glades fails to exercise the Glades Permitting Option (as defined in the Lease-Management Agreement) during the Glades Permitting Option Term (as defined in the Lease-Management Agreement) and thereafter Hall County determines that the Property is no longer needed by Hall County for Reservoir purposes. The Right to Repurchase shall in all respects be subject to the terms and provisions of O.C.G.A. Section 36-9-3(g). The Right to Repurchase set forth in this Section shall automatically cease and terminate upon the construction of the Reservoir without any further action on any part of the parties hereto; provided, however, Glades shall, upon request of Hall County, execute a termination agreement in recordable form terminating the Right to Repurchase and shall deliver the same to Hall County;

(ii) If Glades exercises the Right to Repurchase in accordance with this Section, then the closing will occur in the law offices of Fortson, Bentley & Griffin, 440 College Avenue North, Suite 220, Athens, Georgia 30601, at 10:00 a.m. on that date which is sixty (60) days after the delivery to Hall County of exercise notice, or such earlier date upon which Hall County and Glades agree;

(iii) At the closing held in accordance with this Section, Hall County shall execute and deliver to Glades: (a) a limited warranty deed conveying title to the Property to Glades, its successors and assigns, subject only to the Permitted Exceptions and such other matters established against title after the closing date with the express written consent of Glades (except financing liens established at or after closing by Hall County which Hall County shall discharge prior to or at the time of the reconveyance); (b) an affidavit of a duly authorized officer of Hall County that (i) there are no boundary disputes affecting the Property, (ii) the Property is free and clear of all defects in title other than Permitted Exceptions or matters approved by Glades, if any, (iii) no improvements or repairs have been made on the Property within ninety-five (95) days prior to such closing, or if such improvements or repairs have been made, that all costs with respect thereto have been paid in full, (iv) there are no pending suits, proceedings, judgments or liens or executions against Hall County or its lessees which affect title to the Property, (v) there are no persons or other parties in possession of the Property who have a right or claim to possession, (vi) such other documents, certificates, instruments and the like, as may be required pursuant to this Agreement or reasonably necessary or helpful to carry out the respective obligations under this Agreement with respect to the closing.

(iv) In the event that Glades elects to exercise the Right to Repurchase in accordance with this Section, the purchase price of the Property (the "Repurchase Price") is the Purchase Price paid by Hall County to Glades under this Agreement plus interest bearing at the interest rate of four and one-half percent (4 ½%) per annum, which interest shall begin accruing on the original closing date and shall end upon the date of the closing of the repurchase by Glades as described in this Section. The Repurchase Price shall be paid by Glades to Hall County in cash or other funds available for immediate credit and Hall County shall pay the transfer tax, if any, imposed on the deed and all other closing costs shall be paid by Glades except that each party shall pay their own respective attorneys fees. Real Estate taxes, if any, will be prorated as of the closing of the repurchase of the Property. The Lease-Management Agreement shall be terminated between the parties effective the date of closing.

(v) If Hall County fails to reconvey the Property in accordance with this Section, then Glades is entitled to exercise any and all remedies at law or in equity, including, without limitation, the right to specifically enforce the conveyance of the Property to Glades.

(m) Little Glades Farm Lake. Glades has expressed an interest in studying the feasibility of constructing a second dam to be located across the western portion of the Reservoir, thereby creating two (2) separate lakes. The smaller lake (hereinafter "Little Glades Farm Lake") would inundate property at an elevation slightly higher than the 1,180 elevation of the larger lake and would contain approximately 100 acres of land. At the 1,180 elevation, the property that constitutes Little Glades Farm Lake contains 97.8403 acres designated as Parcel #2 on the Survey with a flood zone that contains 8.590 acres designated as Flowage Easement #3 on the Survey. Hall County agrees to accommodate Glades relative to the feasibility study of Little Glades Farm Lake subject to the following terms and conditions:

(i) All costs and expenses incurred in the feasibility study of Little Glades Farm Lake shall be at the sole cost and expense of Glades.

(ii) At the time of Closing as set forth in Section 26(b) herein, the ownership of the property that constitutes Little Glades Farm Lake shall remain in the name of Glades and shall not be purchased by Hall County.

(iii) Subject to the extension described hereinbelow, within five (5) years of the Closing Date set forth in Section 26(b) herein, Glades shall notify Hall County of its decision to construct or not to construct the dam necessary to create Little Glades Farm Lake. If Glades notifies Hall County that it does not intend to construct Little Glades Farm Lake, then Hall County shall purchase from Glades the property and flood zone that constitutes Little Glades Farm Lake which is designated as Parcel #2 (97.8403 acres) and Flowage Easement #3 (8.590 acres) on the Survey. Closing shall occur within 180 days of Glades notice to Hall County of its intention not to construct Little Glades Farm Lake. The purchase price for the property and flood zone that constitutes Little Glades Farm Lake shall be the sum of \$5,365.00 per acre as shown on the Survey plus interest bearing at the rate of four and one-half (4.5%) percent per annum, which interest shall begin accruing on the original Closing Date specified in Section 26(b) herein and shall end upon the date of the closing of the purchase by Hall County as described in this Section. Upon Hall County's acquisition of the property described in this Section, thereafter such property shall be subject to the terms and conditions contained in this Agreement and the

Lease Management Agreement as if it was acquired by Hall County on the original closing date specified in Section 26(b) herein.

(iv) If Glades does not complete its feasibility study relative to the construction of Little Glades Farm Lake within the five (5) year period described hereinabove, then Glades shall have the option to extend such feasibility period for an additional five (5) year term by Glades giving notice to Hall County of its election to extend, which notice must be provided prior to the expiration of the original five (5) year feasibility period (the "Feasibility Extension Period"). During the Feasibility Extension Period, if Glades notifies Hall County that it does not intend to construct Little Glades Farm Lake, then Hall County shall purchase from Glades the property and flood zone that constitutes Little Glades Farm Lake shown as Parcel #2 (97.8403 acres) and Flowage Easement #3 (8.590 acres) as shown on the Survey. The Closing shall occur within 180 days of Glades notice to Hall County of its election not to construct Little Glades Farm Lake. The purchase price for the property and flood zone that constitutes Little Glades Farm Lake shall be the sum of \$5,365.00 per acre as shown on the Survey plus interest bearing at the rate of four and one-half (4.5%) percent per annum, which interest shall begin accruing on the original Closing Date specified in Section 26(b) herein and shall end upon the date of the expiration of the original five (5) year feasibility period as described hereinabove. Upon Hall County's acquisition of the property described in this Section, thereafter such property shall be subject to the terms and conditions contained in this Agreement and the Lease Management Agreement as if it was acquired by Hall County on the original Closing Date specified in Section 26(b) herein.

(v) If during the feasibility period, or Feasibility Extension Period if so exercised, Glades notifies Hall County that Glades intends to construct Little Glades Farm Lake, then Little Glades Farm Lake shall be owned and operated by Glades as a private lake which shall not be subject to the terms and conditions of the Lease Management Agreement. Provided however, Glades shall not operate Little Glades Farm Lake in any manner which would create or cause a material adverse impact or effect on the larger reservoir. The construction of the dam associated with Little Glades Farm Lake shall be at the sole cost and expense of Glades, which construction and permitting thereof shall occur contemporaneous with the construction and permitting of the larger reservoir. All construction and engineering plans of Little Glades Farm Lake shall be subject to Hall County's approval, which approval shall not be unreasonably withheld or delayed. Hall County shall fully cooperate, assist and support Glades with regard to any necessary permits associated with the construction of Little Glades Farm Lake.

(vi) In order to protect and preserve the site of Little Glades Farm Lake, at the time of the original Closing set forth in Section 26(b) herein, Glades shall grant and convey to Hall County a non-exclusive flood easement over the property that constitutes Little Glades Farm Lake.

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals the day and year written.

MAYR-MELNHOF HOLDING, A.G.

DATE: 12<sup>th</sup> Oct. 2000

By: [Signature] (SEAL)  
Clemens Goess-Saurau

As Its: Managing Director

DATE: 12<sup>th</sup> Oct. 2000

GLADES LAND AND CATTLE CORPORATION

By: [Signature] (SEAL)  
Clemens Goess-Saurau

As Its: President

HALL COUNTY

DATE: Oct. 12, 2000

BY: [Signature]  
As its: Chairman





## EXHIBIT "A"

ALL those tracts or parcels of land, situate, lying and being in the 12<sup>th</sup> Land District, 810<sup>th</sup>, 1695<sup>th</sup>, and 434<sup>th</sup>, G.M.D., Hall County, Georgia, as being more particularly shown on that certain boundary survey prepared by Post, Buckley, Schuh & Jernigan, Inc. dated September 25, 2000, which plat of survey is incorporated herein by reference thereto; provided however that said survey is subject to final revisions and approval by both Hall County and Glades.

**HP OfficeJet**  
**Personal Printer/Fax/Copier**
**Fax Log Report**
 1  
 May-25-01 01:14 PM

<u>Identification</u>	<u>Result</u>	<u>Pages</u>	<u>Type</u>	<u>Date</u>	<u>Time</u>	<u>Duration</u>	<u>Diagnostic</u>
Co. Attorney	OK	17	Sent	May-25	01:05P	00:08:39	0025c2030022

1.3.0 2.8

{113718.1}

**FORTSON, BENTLEY AND GRIFFIN, P.A.**

UPSHAW C. BENTLEY, JR.  
J. EDWARD ALLEN (GA & TN)  
ROBERT N. ELKINS (GA & FL)  
ELBERT H. WHITMIRE, III, C.P.A.  
G. MARCUS HODGE (GA & SC)  
DAVID K. LINDER  
ROY E. MANOLL, III  
JODY JENKINS CORRY  
WALTER W. HAYS, JR.  
KELLY C. HOLLOWAY  
MICHAEL J. MCCLEARY  
V. KEVIN LANG  
JEFFREY W. DELOACH  
KEVIN E. EPPS  
WADE A. SCHUENEMAN

ATTORNEYS AT LAW  
2500 DANIELL'S BRIDGE ROAD  
BUILDING 200, SUITE 3A  
ATHENS, GEORGIA 30606  
(706) 548-1151  
EMAIL ADDRESS: FBGLAW@FBGLAW.COM

EDWIN B. FORTSON  
(1913-2007)  
JOHN E. GRIFFIN  
(1923-2002)  
HERBERT T. HUTTO  
(1933-1998)  
**RETIRED**  
W. H. KIMBROUGH, JR.  
**OF COUNSEL**  
RICHARD L. FORD

January 20, 2010

Hall County Government  
Attn: Jessica York  
P.O. Box 1435  
Gainesville, GA 30503

RE: Glades Reservoir Lease Management Agreement Amendment

Dear Jessica,

Enclosed please find an original executed counterpart Letter of Intent relative to the above-captioned.

We trust you find all in order; however, if you should have any questions or comments, please do not hesitate to contact me.

With best regards,

FORTSON, BENTLEY AND GRIFFIN, P.A.

*Mark Hodge*  
G. Marcus Hodge

GMH/lpc  
Enclosure  
cc: Carl Nichols  
Bill Blalock

## HALL COUNTY GOVERNMENT BOARD OF COMMISSIONERS

January 15, 2010

Mr. Carl Nichols  
2500 Daniel's Bridge Road  
Building 200, Suite 1F  
Athens, GA 30606

RE: Glades Reservoir Lease Management Agreement Amendment

Dear Carl:

As a result of the meeting held on Tuesday, January 12, it appears that Hall County and the Glades have substantially agreed on the basis for amendment to the current Glades Reservoir Lease Management Agreement as executed in 2000. The purpose of this correspondence is to serve as a "letter of intent" to be executed by representatives of both the County and the Glades. As I understand the result of our meeting on Tuesday, Hall County and the Glades are in substantial agreement on the following issues:

1. The County will agree to assume all permitting and construction responsibilities of the Glades Reservoir, including all costs of wetland mitigation and stream restoration.

2. Hall County will reimburse Glades for its out of pocket expenses incurred in its "permitting efforts" to date in an amount not to exceed \$3,500,000 or that lesser amount shown by invoices and/or other documentation provided by Glades in support of such costs. This sum is to be paid no later than July 15, 2010. Hall County will receive for this payment all files, drawings, calculations, maps and other pertinent items held by Glades in reference to the Glades Reservoir, excepting only those items, if any, in which a proprietary interest has been reserved by the document's draftsman. As a credit against such sum, the County will pay to the Glades \$100,000 on or before the closing of the purchase from Glades by the County of the land for the 105 acre lake referred to as the Little Glades Lake. See 3 below.

3. The County will purchase from Glades the 105 acre tract referred to in the current lease management agreement as the "Little Glades Lake" at the price set forth in the current lease management agreement. This purchase will be closed within sixty days of the execution of this document providing no title issues are discovered which may otherwise delay such closing.

4. The County and Glades will immediately begin to discuss the additional details necessary to restructure the lease-management agreement, such details to include but shall not be limited to the following items:



POST OFFICE DRAWER 1435  
GAINESVILLE, GEORGIA 30603  
(770) 535-8288  
FAX (770) 531-3972

TOM OLIVER  
CHAIRMAN

BOBBY BANKS, DISTRICT 1  
BILLY POWELL, DISTRICT 2  
STEVE GAILEY, DISTRICT 3  
ASHLEY BELL, DISTRICT 4

CHARLEY NIX  
COUNTY ADMINISTRATOR

PHIL SUTTON  
ASSISTANT COUNTY  
ADMINISTRATOR

HEATHER BENNETT  
COMMISSION CLERK

JESSICA YORK  
EXECUTIVE ASSISTANT

Mr. Carl Nichols  
January 15, 2010  
Page 2 of 4

- a. size of the reservoir;
- b. cost of additional land needed to build a reservoir larger than 1180' elevation, if the size of the reservoir is increased;
- c. mitigation credits available on Glades property;
- d. location of easements for pipelines from reservoir to the Chattahoochee River;
- e. location of right-of-way needed for relocation of Glades Farm Road;
- f. location of 1 to 3 acres of land to be acquired for pump station needed for the construction of the reservoir as a redesigned pump storage reservoir;
- g. recreational use, public access and control of recreational use and access;
- h. other related items.

The County and Glades agree to jointly cooperate in the location of pipeline right of ways and the selection of a pump station site. Glades agrees to a swap of the existing 1 acre pump site and easement thereto as acquired by the County in the current lease management agreement in return for that pipeline right of way and/or pump station site needed by the County in its construction of the reengineered reservoir. To the extent that the pump station site and the pipeline right of way cannot be swapped on an acre for acre basis, the County and Glades agree to negotiate the price of additional right of way or acreage needed by the County at fair market value. Hall County and Glades shall also cooperate in the relocation of the Glade Farm Road in a manner beneficial to the County and the Glades. To the extent that such discussions with regard to items 4 (a) through (h) above are successfully completed between Hall County and Glades, any payment relating to such items shall not be due and payable until and unless the County is successful in obtaining the 404 permit necessary for the construction of the reservoir. If agreement is not reached on all of the items under 4 (a) through (h) above on or before July 15, 2010, (this period of discussion to be extended through January 31, 2011, if requested by either party) the obligation to make payment under items 1 through 3 above shall remain in full force and effect; however, Article III and Article IV of the lease management agreement shall be deleted in its entirety and the County shall have the right to pursue the permit for the construction of the dam and reservoir and, except as otherwise modified by the parties as contemplated in this letter of intent, the remaining terms of the lease management agreement shall remain in full force and effect.

5. The County will pay to Glades the sum of \$4,500,000 within one hundred twenty days after the date the County has obtained the 404 permit necessary for the construction of the reservoir, such sum to begin accruing

Mr. Carl Nichols  
January 15, 2010  
Page 3 of 4

interest at the rate of 4.5% per annum as of such date if not paid within the 120 days; provided however, in any event such sum shall be paid no later than 180 days after the County has obtained the 404 permit. Acceptance of such sum by Glades shall be deemed to be in satisfaction of all claims of Glades to future revenues from the reservoir under the lease-management agreement, and as full compensation for the intrinsic value which Glades has created in the project over the past ten years. The payment by the County of the \$4,500,000 shall become the obligation of the County only if and when the 404 permit necessary for the construction of the dam and reservoir has been obtained. In the event that the County is not successful in obtaining such permit, the obligation to make such payment shall be of no further force and effect and shall be considered null and void.

6. As concerns those items which Glades refers to as its "entitlements negotiated in the original lease management agreement" (open space credits, buffer limitations, restrictions on the use of the lake, the general public draw-downs, etc), it appears that buffers originally negotiated by Glades in its previous efforts to obtain the 404 permit will be consistent with the County's proposed construction and maintenance of the reservoir. As a publicly owned asset, the County will be required by GaEPD to provide some public access to the lake but will agree to limiting boat usage to those vessels propelled by other than gasoline engines. The County further will agree to adjoining owner access of a limited number of docks consistent with GaEPD regulations to include a possible provision for one or more community docks. At this particular time, the County would not be in favor of providing each adjoining property owner with its own individual dock even if such is allowed under state regulations.

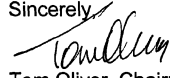
Both Hall County and Glades realize that as reengineered, operation of the reservoir in such a fashion that draw-downs will be no more than two feet 90% of the time is not a sustainable condition. Furthermore, as a result of the County's intent to modify the proposed operation of the reservoir wherein the reservoir will become a pump storage facility with raw water being used by the County to augment flow of the Chattahoochee River from the reservoir, the ongoing operational requirements of the reservoir will be such that the County cannot guarantee that the reservoir will be used as a reservoir of "last resort" as provided in the current lease management agreement. Both the County and Glades agree that maintaining a full reservoir accrues to the benefit of both parties and the parties agree to seek permitting of the reservoir upon conditions and standards designed to maximize reservoir capacity with minimal draw-downs not to exceed the dead storage level of 30% of the whole reservoir volume in times of drought. The County also agrees that in operating the reservoir as a pump storage reservoir, the County will pump from the Chattahoochee River to refill the reservoir whenever sufficient stream flows to do so are available in the

Mr. Carl Nichols  
January 15, 2010  
Page 4 of 4

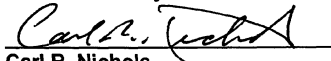
river. To the extent that any of the items listed in paragraph 4. or 6. herein and referred to as operational issues are found to be prohibited by either Federal or State regulation, the parties agree that such regulations will supersede the agreement of the parties to the extent necessary to successfully acquire all necessary permits.

Finally, the parties pledge their mutual support and assistance with regard to seeking all permits necessary for the construction of the reservoir, and the County hereby represents to the Glades that it fully intends to proceed with the permitting process with all due diligence. This correspondence shall serve as a letter of intent to be executed by both parties; thereafter a more detailed memorandum of understanding and an amendment to the current lease management agreement will be executed.

Sincerely,

  
Tom Oliver, Chairman  
Hall County Board of  
Commissioners

Consented to by:

  
Carl R. Nichols  
Attorney in Fact  
Glade Farm, LLC

WHBjr:rs

cc: William H. Blalock, Attorney for Hall County, Georgia  
Harold Reheis  
Tommy Craig  
Mark Hodge, Attorney for Glade Farm, LLC

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20052.101



### Submit Comments and Stay Informed

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<http://www.sam.usace.army.mil/Missions/PlanningEnvironmental/ACFMasterWaterControlManualUpdate>.

First name	Pat
Last name	Horgan
Organization name	LLA
Address	
City	
County	
State	
ZIP Code	
Phone	
E-mail	
Add to mailing list	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail

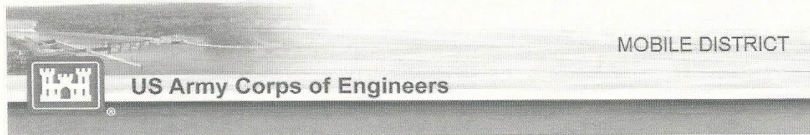
## Response to ACF002 – Patrick Horgan

Comments
<p><b>Resource Area to Which My Comment Is Related</b></p> <p><i>(Choose all that apply)</i></p> <p><input type="checkbox"/> Biological Resources</p> <p><input type="checkbox"/> Cultural Resources</p> <p><input type="checkbox"/> Data, Studies, &amp; Analytical Tools</p> <p><input type="checkbox"/> Drought Operations</p> <p><input type="checkbox"/> Flood Risk Management</p> <p><input type="checkbox"/> Hydropower</p> <p><input type="checkbox"/> National Environmental Policy Act</p> <p><input type="checkbox"/> Navigation</p> <p><input checked="" type="checkbox"/> Socioeconomics &amp; Recreation</p> <p><input checked="" type="checkbox"/> Water Management Recommendations</p> <p><input type="checkbox"/> Water Quality</p> <p><input type="checkbox"/> Water Supply</p> <p><input type="checkbox"/> Other:</p>
<p>I am opposed to any actions which result in the lowering of current water levels in Lake Lanier</p>

A

- A. USACE strives to operate the reservoirs of the ACF Basin in a balanced manner to fulfill all of the authorized project purposes. Congress intended for USACE to use the entire conservation pool to fulfill its authorized purposes. Therefore some alternatives, including the PAA, at times might result in slightly lower lake levels. The WSSA (appendix B in the EIS) demonstrates that reallocating storage in Lake Lanier to meet Georgia's 2015 request is more cost-effective than other means of providing for water supply, even though lower lake levels might result.





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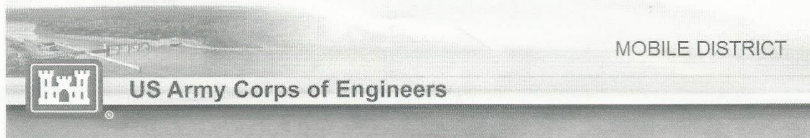
First name	Judy Bailey		
Last name	Edwards		
Organization name			
Address			
City			
County			
State			
ZIP Code			
Phone			
E-mail			
Add to mailing list	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Preferred delivery method	<input checked="" type="checkbox"/> U.S. Mail <input type="checkbox"/> E-mail		

## Response to ACF003 – Judy Bailey Edwards

A. USACE appreciates the comment.

Comments	Resource Area to Which My Comment Is Related
<p>Thank you for all the good work you are doing. Our Engineers at <del>not</del> west point are wonderful. They keep us informed &amp; are so good to talk to. David Barr is so good to talk to &amp; makes you feel safe when the water is rising!</p> <p>Keep up the Good work.</p> <p>James Hathorn Jr + Mr. Bailey make us feel a lot better about the control of the Lake. Thank you.</p> <p>Judy B. Edwards</p> <p>I know a lot of work has gone into this to keep us <del>safe</del> informed.</p>	<p>(Choose all that apply)</p> <p><input type="checkbox"/> Biological Resources</p> <p><input type="checkbox"/> Cultural Resources</p> <p><input type="checkbox"/> Data, Studies, &amp; Analytical Tools</p> <p><input type="checkbox"/> Drought Operations</p> <p><input checked="" type="checkbox"/> Flood Risk Management</p> <p><input type="checkbox"/> Hydropower</p> <p><input type="checkbox"/> National Environmental Policy Act</p> <p><input type="checkbox"/> Navigation</p> <p><input type="checkbox"/> Socioeconomics &amp; Recreation</p> <p><input checked="" type="checkbox"/> Water Management Recommendations</p> <p><input type="checkbox"/> Water Quality</p> <p><input type="checkbox"/> Water Supply</p> <p><input type="checkbox"/> Other:</p>

A



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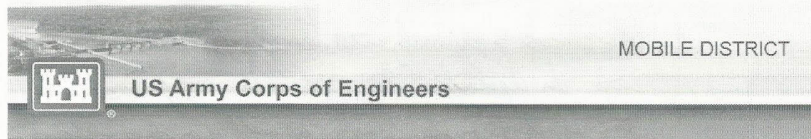
If you have not yet joined the mailing list please indicate that you would like to be added below.

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<http://www.sam.usace.army.mil/Missions/PlanningEnvironmental/ACFMasterWaterControlManualUpdate>.

First name	ALLYSON BOWERS	
Last name		
Organization name		
Address		
City		
County		
State		
ZIP Code		
Phone		
E-mail		
Add to mailing list	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Preferred delivery method	<input checked="" type="checkbox"/> U.S. Mail <input type="checkbox"/> E-mail	

A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.



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First name	JOHN INZGHA
Last name	
Organization name	Riverkeeper / Concerned citizen / Clinton captain
Address	
City	
County	
State	
ZIP Code	
Phone	
E-mail	
Add to mailing list	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail



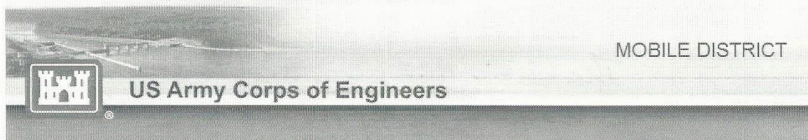
## Response to ACF005 – John Inzgha

Comments	Resource Area to Which My Comment Is Related
<p>My concern is primarily with the flow of freshwater into the Apalachicola River below the Woodruff Dam. It is not only the system industry as well as a few publicized endangered mussel species but the entire eco-system in the drainage area. Vast tracts of Tupelo and other species of trees are nearing a critical stage where if they don't receive an annual historical flood they will be forever lost. The bay and salinity levels are very important but they are far from the entire story. I would hate to see our river system fall to the same fate as the Colorado and other western rivers.</p>	<p>(Choose all that apply)</p> <p><input checked="" type="checkbox"/> Biological Resources</p> <p><input type="checkbox"/> Cultural Resources</p> <p><input checked="" type="checkbox"/> Data, Studies, &amp; Analytical Tools</p> <p><input checked="" type="checkbox"/> Drought Operations</p> <p><input checked="" type="checkbox"/> Flood Risk Management</p> <p><input type="checkbox"/> Hydropower</p> <p><input type="checkbox"/> National Environmental Policy Act</p> <p><input type="checkbox"/> Navigation</p> <p><input type="checkbox"/> Socioeconomics &amp; Recreation</p> <p><input checked="" type="checkbox"/> Water Management Recommendations</p> <p><input checked="" type="checkbox"/> Water Quality</p> <p><input checked="" type="checkbox"/> Water Supply</p> <p><input type="checkbox"/> Other:</p>

A

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.





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First name	Ada
Last name	Long
Organization name	(volunteer for) Apalachicola Riverkeeper
Address	
City	
County	
State	
ZIP Code	
Phone	
E-mail	
Add to mailing list	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail

## Response to ACF006 – Ada Long, Apalachicola Riverkeeper (volunteer)

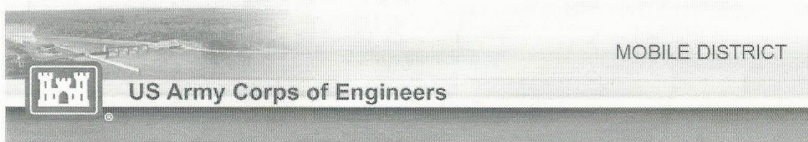
Comments	
<b>Resource Area to Which My Comment Is Related</b> (Choose all that apply) <input checked="" type="checkbox"/> Biological Resources <input checked="" type="checkbox"/> Cultural Resources <input type="checkbox"/> Data, Studies, & Analytical Tools <input checked="" type="checkbox"/> Drought Operations <input type="checkbox"/> Flood Risk Management <input type="checkbox"/> Hydropower <input type="checkbox"/> National Environmental Policy Act <input type="checkbox"/> Navigation <input type="checkbox"/> Socioeconomics & Recreation <input checked="" type="checkbox"/> Water Management Recommendations <input type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Other:	<p>The basic ACE plan that is being revised really needs to be reconsidered altogether — to essentially start over — but that's not going to happen so at the very least the ACF stakeholders' sustainability plan needs to be carefully studied so that changes can be implemented in water flow all the way to Apalachicola Bay. Otherwise, this crucial nursery of marine life will die, snuffed out by water that is too saline to sustain the diverse species that require combined seawater &amp; freshwater. The loss of these vital components of the coastal and marine ecology will have disastrous effects on the ocean and on the people who depend on it for their livings &amp; their lives.</p>

A

B

A. The ACF Stakeholder's sustainable water management plan (SWMP) was received by USACE in early June 2015. USACE received the report and its recommendations too late to be fully evaluated and considered in the draft EIS. Further, the SWMP, as initially submitted to USACE, did not include the necessary supporting technical documentation and underlying assumptions to fully evaluate the recommended management measures. The SWMP recommendations were considered to the extent possible in the final EIS.

B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.



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<http://www.sam.usace.army.mil/Missions/PlanningEnvironmental/ACFMasterWaterControlManualUpdate>.

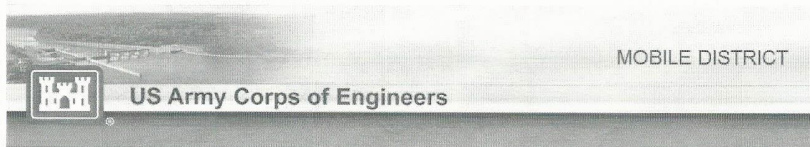
First name	Charles
Last name	Kienzle
Organization name	
Address	
City	
County	
State	
ZIP Code	
Phone	
E-mail	
Add to mailing list	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input type="checkbox"/> E-mail

## Response to ACF007 – Charles Kienzie

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. The purpose of the Master WCM update and EIS is to evaluate and compare alternative plans to update project operations in the ACF Basin to improve upon current operations (i.e., the NAA). The NAA reflects current reservoir operations as they have evolved over time in response to laws, regulations, policy, and new technical information. Basing the NAA for the ACF Basin on a pre-NEPA 1958 WCM or a predam condition to assess the effects of alternative WCM update plans would neither accurately reflect current baseline operations nor be consistent with "no action" as defined in the Council on Environmental Quality's memorandum of March 23, 1981, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations. The EIS considered direct, secondary, and cumulative impacts and indicates that there would be essentially no incremental effect on the Apalachicola River and Bay as a result of the PAA as compared to the NAA.
- C. Subsequent to this comment, the comment period was extended from 60 days to 105 days (ending on January 15, 2016).
- D. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.
- E. The PAA is not expected to result in a change to conditions that currently exist for the commercial fishing industry (including oysters) in Apalachicola Bay compared to current reservoir operations (i.e., the NAA). Physical and ecological conditions that affect the extent and overall abundance of commercial species are not expected to change under the PAA. Section 6.6.5 addresses the effects of the various Master WCM update alternatives on the Apalachicola bay oyster industry.
- F. Water conservation in both urban and rural areas is the responsibility of state or local governments and outside the scope of the Master water control manual (WCM) update. The water supply storage assessment (WSSA) (appendix B in the environmental impact statement [EIS]) considered the effect of implementing additional conservation measures as described by the Metropolitan North Georgia Water Planning District on the future per capita use rate in Metro Atlanta. Section 2.1.1.2.10.1 of the EIS provides a summary of various State of Georgia programs to plan for and regulate surface water and groundwater withdrawals and use in the state, including conservation and efficiency measures and mandatory constraints on municipal and industrial and agricultural water use during extreme drought conditions. A more detailed overview of these programs is presented in appendix G of the EIS.

<b>Comments</b> <b>Resource Area to Which My Comment Is Related</b> (Choose all that apply) <input type="checkbox"/> Biological Resources <input type="checkbox"/> Cultural Resources <input type="checkbox"/> Data, Studies, & Analytical Tools <input type="checkbox"/> Drought Operations <input type="checkbox"/> Flood Risk Management <input type="checkbox"/> Hydropower <input type="checkbox"/> National Environmental Policy Act <input type="checkbox"/> Navigation <input type="checkbox"/> Socioeconomics & Recreation <input type="checkbox"/> Water Management <b>Recommendations</b> <input type="checkbox"/> Water Quality <input type="checkbox"/> Water Supply <input type="checkbox"/> Other: <b>EIS Objectives</b>	<p>1- Summary Lines 1-22- "USACE operates &amp; manages the ACF Basin projects as one system..." The basin includes the headwaters/etc. but doesn't include Apalachicola Bay which is the repository for the Basin. Excluding the impact on the Bay is arbitrary &amp; insures the EIS is incomplete. <b>A</b></p> <p>2- Impacts are considered "in light of current conditions." Management of the system by the COE has been a major factor in the deterioration of the Bay. The EIS only looks currently... the COE is like the doctor who has been responsible for my care &amp; helped make me sick &amp; now has the means to improve my condition back to fully healthy but instead accepts the status quo and refuses to make me better. "Your coping -" be consistent with the contemporary water resources needs of the basin to the extent possible. <b>B</b></p> <p>3- Last plan in 1959, some actions in 80/90s/00s &amp; then leave 60 days for comments. Certainly gives the appearance that this is a done deal and the COE is under orders to get it done as is. The ACF has been disrupted for over 2 decades, what is another 30 days. <b>C</b></p> <p>4- Cumulative Effects, pg 33-ES. Actions are "likely to have negligible effect on aquatic resources &amp; ecological function of the Apalachicola Bay estuary. Likely to be inconsequential compared to the cumulative effects of seawater rise." So potential climate changes will <del>kill</del> do the job in a couple decades so why address effects of our plans don't mean a thing. Are you kidding? Why <del>address</del> address my flu, I am going to die someday. <b>D</b></p> <p>5- <del>The</del> The COE is protecting <sup>critical</sup> endangered species which is should but its current plan creates potentially many more long term. More importantly, the immediate harm is done to the human resources who work the Bay &amp; commercial fishing industry. <b>E</b></p> <p>6 Why not have the COE attorney determine water flow is covered under the COE's operational mandate - just like they did in 2012(?) when the attorney determined Atlanta water supply was included (after court appeal). Worst case you have a plan that provides adequate flow forces Atlanta water conservation measure acceleration &amp; forces Ala./Ga. farming water conservation measures adoption, while still meeting the COE's other objectives. Even if Ga. sues &amp; a court overturns inclusion the flow, at least the COE will have taken measures to improve the situation (as we have seen court cases can take years). <b>F</b></p>
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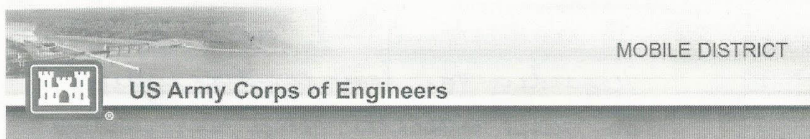
<http://www.sam.usace.army.mil/Missions/PlanningEnvironmental/ACFMasterWaterControlManualUpdate>.

First name	Rebecca
Last name	Jetton
Organization name	
Address	
City	
County	
State	
ZIP Code	
Phone	
E-mail	
Add to mailing list	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail

## Response to ACF008 – Rebecca Jetton

- A. The flows downstream of Jim Woodruff Lock and Dam as suggested in the comment are met in virtually all circumstances under current operations and would be met as well under the PAA. Accordingly, the flows into Apalachicola Bay would be equal to or exceed these suggested rates.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- C. Additional studies and research on the Apalachicola Bay are beyond the scope of this Master WCM update process. Focused efforts directly related to assessing the effects of water management activities in the basin on the Apalachicola River and Bay were conducted as part of the coordination for the Master WCM update between USACE, Mobile District and the USFWS under the Fish and Wildlife Coordination Act. The results of these activities have been incorporated into the final EIS.

Comments	Resource Area to Which My Comment Is Related (Choose all that apply)
The Apa Bay needs 5000 Cubic feet a second year round. 2 weeks out of the year, the bay needs 7000 Cubic ft a second to flood the riverine floodplains & maintain the habitat, Tupelo trees & beavers.	<input checked="" type="checkbox"/> Biological Resources <input checked="" type="checkbox"/> Cultural Resources <input checked="" type="checkbox"/> Data, Studies, & Analytical Tools <input type="checkbox"/> Drought
The impacts of reduced water flow to the bay should be considered along with the effect on marine life & wildlife conservation. A comprehensive management plan is needed to sustain a healthy ecosystem in the bay. The saltwater/fresh water balance is crucial to protection of the bay. I understand that the population of GA. is increasing. Inexpensive water rates should not outweigh the needs of the downstream stakeholders.	<input type="checkbox"/> Operations <input type="checkbox"/> Flood Risk Management <input type="checkbox"/> Hydropower <input type="checkbox"/> National Environmental Policy Act <input type="checkbox"/> Navigation <input checked="" type="checkbox"/> Socioeconomics & Recreation <input type="checkbox"/> Water Management Recommendations <input type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Other:
Additional scientific evaluations are needed of the bay.	



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<http://www.sam.usace.army.mil/Missions/PlanningEnvironmental/ACFMasterWaterControlManualUpdate>.

First name	BARBARA <del>SANDERS</del>
Last name	SANDERS
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Address	
City	
County	
State	
ZIP Code	
Phone	
E-mail	
Add to mailing list	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail

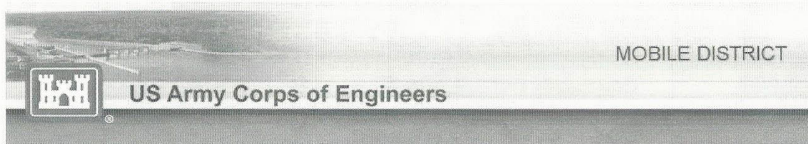


## Response to ACF009 – Barbara Sanders

A. USACE complies with all applicable laws and regulations and does not comment on pending legislation.

Comments	Resource Area to Which My Comment Is Related (Choose all that apply)
I understand the Corps' position regarding the law under which it must operate. My request is this: IF Gwen Graham's bi-partisan legislation passes into law, PLEASE quickly re-assess so that you can save the Apalachicola Bay. Getting to this EIS has simply taken TOO LONG. Speed it up.	<input checked="" type="checkbox"/> Biological Resources <input type="checkbox"/> Cultural Resources <input type="checkbox"/> Data, Studies, & Analytical Tools <input type="checkbox"/> Drought Operations <input type="checkbox"/> Flood Risk Management <input type="checkbox"/> Hydropower <input type="checkbox"/> National Environmental
	Policy Act <input type="checkbox"/> Navigation <input checked="" type="checkbox"/> Socioeconomics & Recreation <input type="checkbox"/> Water Management Recommendations <input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Other:

A



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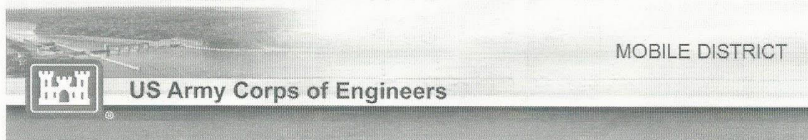
<http://www.sam.usace.army.mil/Missions/PlanningEnvironmental/ACFMasterWaterControlManualUpdate>.

First name	Elizabeth Perkins	
Last name	Perkins	
Organization name		
Address		
City		
County		
State		
ZIP Code		
Phone		
E-mail		
Add to mailing list	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input type="checkbox"/> E-mail	

## Response to ACF010 – Elizabeth Perkins

Comments	Resource Area to Which My Comment Is Related (Choose all that apply)
My husband and I are seriously considering relocating to Apalachicola. We were shocked to discover that a new water management plan apparently is not taking the health of the Apalachicola Bay into consideration. This is certainly not in the spirit of the National Environmental Policy Act, even if it narrowly conforms to the Corps limit of operation 6 miles above the mouth of the Bay. Drinking	<input checked="" type="checkbox"/> Biological Resources <input type="checkbox"/> Cultural Resources <input type="checkbox"/> Data, Studies, & Analytical Tools <input type="checkbox"/> Drought Operations <input type="checkbox"/> Flood Risk Management <input type="checkbox"/> Hydropower <input checked="" type="checkbox"/> National Environmental Policy Act
Water for Atlanta is not an unlimited resource; that community should be asked to do their part in conservation. It would be criminal to destroy the Apalachicola Bay in a misguided attempt to place no limits on Atlanta's growth. Data on salinity &	<input type="checkbox"/> Navigation <input type="checkbox"/> Socioeconomics & Recreation <input type="checkbox"/> Water Management Recommendations <input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Other:
nutrient transfer should be a part of the EIS statement which must include both the river & the bay.	

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. Water conservation in both urban and rural areas is the responsibility of state or local governments and outside the scope of the Master water control manual (WCM) update. The water supply storage assessment (WSSA) (appendix B in the environmental impact statement (EIS)) considered the effect of implementing additional conservation measures as described by the Metropolitan North Georgia Water Planning District on the future per capita use rate in Metro Atlanta. Section 2.1.1.2.10.1 of the EIS provides a summary of various State of Georgia programs to plan for and regulate surface water and groundwater withdrawals and use in the state, including conservation and efficiency measures and mandatory constraints on municipal and industrial and agricultural water use during extreme drought conditions. A more detailed overview of these programs is presented in appendix G of the EIS.
- C. Efforts to assess the effects of water management activities on salinity in the Apalachicola Bay have been conducted as part of the coordination between USACE, Mobile District and the USFWS under the Fish and Wildlife Coordination Act. The current analysis presented in the EIS indicates that freshwater flow and water quality conditions in the river and bay under the PAA would not measurably change compared to current reservoir operations (i.e., the NAA). Therefore, salinity and nutrient transfer conditions would not be expected to change (see EIS sections 6.4.3.3 and 6.1.2). The results of further USFWS analyses in the final Fish and Wildlife Coordination Act Report were included in the final EIS.



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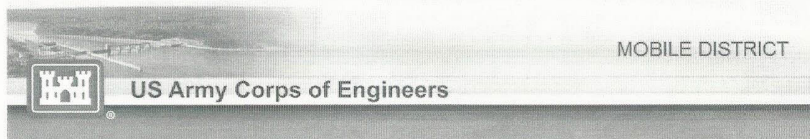
First name	Thomas
Last name	Fugate
Organization name	
Address	
City	
County	
State	
ZIP Code	
Phone	
E-mail	
Add to mailing list	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail

## Response to ACF011 – Thomas Fugate

- A. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.

Comments	Resource Area to Which My Comment Is Related
Will the Final EIS address any non-Direct Adverse effects to the bay??	<input type="checkbox"/> Biological Resources <input type="checkbox"/> Cultural Resources <input type="checkbox"/> Data, Studies, & Analytical Tools <input type="checkbox"/> Drought Operations <input type="checkbox"/> Flood Risk Management <input type="checkbox"/> Hydropower <input type="checkbox"/> National Environmental Policy Act <input type="checkbox"/> Navigation <input type="checkbox"/> Socioeconomics & Recreation <input type="checkbox"/> Water Management Recommendations <input type="checkbox"/> Water Quality <input type="checkbox"/> Water Supply <input checked="" type="checkbox"/> Other: Apalachicola Bay -
Your project legally stays above Apalach. but it does have the potential to have an en-direct negative impact to the health of the Fisheries in the bay and the economy of the city -	

A



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First name	Betty
Last name	Fugate
Organization name	
Address	
City	
County	
State	
ZIP Code	
Phone	
E-mail	
Add to mailing list	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail



## Response to ACF012 – Betty Fugate

Comments	
<b>Resource Area to Which My Comment Is Related</b> <i>(Choose all that apply)</i> <input checked="" type="checkbox"/> Biological Resources <input type="checkbox"/> Cultural Resources <input type="checkbox"/> Data, Studies, & Analytical Tools <input type="checkbox"/> Drought Operations <input type="checkbox"/> Flood Risk Management <input type="checkbox"/> Hydropower <input type="checkbox"/> National Environmental Policy Act <input type="checkbox"/> Navigation <input type="checkbox"/> Socioeconomics & Recreation <input checked="" type="checkbox"/> Water Management Recommendations <input type="checkbox"/> Water Quality <input type="checkbox"/> Water Supply <input type="checkbox"/> Other:	<p>I don't see how it can be considered responsible management of the water basin resources to not even consider the impact to the health of the Apalachicola Bay. We were told it would take an act of congress to have the Apalachicola Bay included in the review process, as far as impact.</p> <p>The Apalachicola Bay is an important biological &amp; economic resource to Franklin County, Florida and even the United States.</p> <p>I think it could be considered mismanagement to not consider all possible ramifications to The Corps actions regarding the entire rivers system including the Bay.</p>

A

B

A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

B. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.



**RIVERKEEPER ALERT - PLEASE ACT NOW***The Apalachicola River & Bay needs YOU!*

The U.S. Army Corps of Engineers is updating its operating manual for the Apalachicola-Chattahoochee-Flint (ACF) river system – the river system that Apalachicola Bay depends on for freshwater and nutrients to stay healthy and productive.

A way of life for an entire region may not survive without public intervention into the Corps' management of the water in this river system, specifically the Corps' management of the quantity and timing of the flow of freshwater from the Apalachicola River and to its Bay.

This is the best chance individuals have to influence the Corps' management of the freshwater flows to the Apalachicola Bay. Those who care about the river and bay must speak out NOW in a collective effort to ensure that all of the river basin's riparian communities, and the plants, animals, marine life, and the fishing industry are still here in the future!

**Public input IS CRITICAL** - please speak from your heart on behalf of the River & Bay. TELL the Corps of Engineers this natural resource MATTERS TO YOU. The Apalachicola River and Bay is the last ecosystem of its kind...anywhere, making this so much more than "a local issue". As a national resource, the Apalachicola Basin is an ecological and cultural treasure.

**Please attend the Meeting:**

**Date:** Monday, November 9th

**Time:** 4:00pm and ends at 7:00pm (EDT) **\*open house**

**Location:** Apalachicola National Estuarine Research Reserve 108 Island Drive, Eastpoint, FL

AND

**Submit your comments to the Corps NOW at: [ACF-WCM@usace.army.mil](mailto:ACF-WCM@usace.army.mil)**

Dear Commander:

The health, productivity and sustainability of the Apalachicola River, Floodplain, Bay and the Gulf are critical to our economy and cultural heritage! The Corps MUST give fair and equal consideration to **Fish and Wildlife Conservation in the Apalachicola ecosystem as they do the other authorized purposes of the ACF river system."**

**A**

WE NEED A GOOD FLOW OF WATER TO HELP SUSTAIN A GOOD NURSERY FOR OUR BAY. THIS WILL HELP US KEEP A VIABLE RESOURCE WHICH WILL HELP OUR ECONOMY. MINE AND MY CO-WORKERS DEPEND ON THE NATURAL RESOURCES AND THE TOURIST INDUSTRY. PLEASE GIVE US OUR SHARE OF WATER SO WE CAN KEEP OUR WAY OF LIFE.

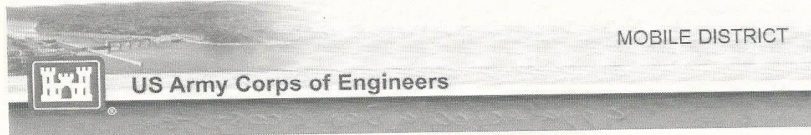
**B**

Jeremy Register

Learn more about the Corps draft EIS and read related news and information on our website:  
[www.apalachicolariverkeeper.org](http://www.apalachicolariverkeeper.org)

**Response to ACF013 – Jeremy Register**

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.



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First name	Ralph
Last name	Schiefferle
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Address	
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Add to mailing list	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail

## Response to ACF014 – Ralph Schiefferle

- A. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.
- B. Water conservation in both urban and rural areas is the responsibility of state or local governments and outside the scope of the Master water control manual (WCM) update. The water supply storage assessment (WSSA) (appendix B in the environmental impact statement [EIS]) considered the effect of implementing additional conservation measures as described by the Metropolitan North Georgia Water Planning District on the future per capita use rate in Metro Atlanta. Section 2.1.1.2.10.1 of the EIS provides a summary of various State of Georgia programs to plan for and regulate surface water and groundwater withdrawals and use in the state, including conservation and efficiency measures and mandatory constraints on municipal and industrial and agricultural water use during extreme drought conditions. A more detailed overview of these programs is presented in appendix G of the EIS.

Comments	
<b>Resource Area to Which My Comment Is Related</b> (Choose all that apply) <input type="checkbox"/> Biological Resources <input type="checkbox"/> Cultural Resources <input type="checkbox"/> Data, Studies, & Analytical Tools <input type="checkbox"/> Drought Operations <input type="checkbox"/> Flood Risk Management <input type="checkbox"/> Hydropower <input type="checkbox"/> National Environmental Policy Act <input type="checkbox"/> Navigation <input type="checkbox"/> Socioeconomics & Recreation <input type="checkbox"/> Water	<p>To what extent are the impacts of corp actions on the appalachicola Bay ecosystem being considered.</p> <p style="text-align: center;"><b>A</b></p>
<input type="checkbox"/> Management Recommendations <input type="checkbox"/> Water Quality <input type="checkbox"/> Water Supply <input type="checkbox"/> Other:	<p>Under the propose alternate alternative, Lake Lanier will be used to make up for drought conditions in the lower watershed, but will be allowed to maintain slightly higher levels at the 90% drought level. Will the city of Atlanta be required to implement water use control measures at any point? If not, why not?</p> <p style="text-align: center;"><b>B</b></p>

November 7, 2015

Commanding Officer

Mobile District, USACE

P.O. Box 2288

Mobile, AL 36628

RE: Assessment of USACE draft proposal to update the Master Water Control Manual for management of the waters of the Apalachicola-Chattahoochee-Flint (ACF) River Basin (including a Water Supply Storage Assessment re-allocating waters of Lake Lanier)

Assumptions: It is useful to identify shared concepts that are implicit in the proposed update to the Master Water Control Manual for the ACF, such as –

*The goal is to change the operation and management of the ACF Basin to achieve:*

- *Equitable solutions among stakeholders that balance economic, ecological, and social values.*
- *Viable solutions that ensure that the entire ACF Basin is a sustainable resource for current and future generations.*
- *Solutions that are based on the best available technology and science.*

A

Scope: The draft Environmental Impact Statement – with tables, figures, lengthy Executive Summary, and over 200 pages of detailed discussion – defies comprehensive public involvement from affected Stakeholders in the one 3-hour session set aside for that purpose in Florida. The importance of this opportunity, however, dictates that a start at such an analysis must be done. This paper will begin by focusing on five (5) key issues for resolution in light of the assumed goal.

**Issue 1 – Fishery Habitat.** On Page 2-60, " ... Fish and Wildlife Conservation is also an authorized purpose of the entire ACF Basin as directed in P.L. 85-624", however for "projects authorized prior to that law's enactment...modification of operations shall be compatible with basic project purposes." The incompatibility between ensuring a healthy and productive fishery habitat in the Apalachicola Bay and any "basic project purpose(s)" cannot be just implied. What is that incompatibility and why can't it be resolved? Likewise, the protection afforded fish spawning by management of lake levels needs to be extended to the fish spawning in an inundated floodplain of the Apalachicola.

B

#### Response to ACF015 – David McClain

- A. The goal of the Master WCM update, as expressed in the comment, is not consistent with the purpose and need statement in the EIS (section 1.2). The purposes of the Master WCM update and WSSA (appendix B in the EIS) are to determine how the federal projects in the Apalachicola-Chattahoochee-Flint (ACF) Basin should be operated for their authorized purposes, in light of current conditions and applicable laws, and to assess the extent to which reservoir storage at Lake Sidney Lanier (Lake Lanier) can be made available to meet current and future water supply needs for Metro Atlanta. In the Master WCM update process, balancing project operations to fulfill all authorized purposes in the most effective manner does require consideration of stakeholder interests as well as the environmental effects of proposed changes to current operations. The analysis by the U.S. Army Corps of Engineers (USACE) in the EIS is based upon the best available technology and science.
- B. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.



**Issue 2 – Critical Yield Allocation.** On Page 2-101, there is a discussion of water allocation based on “Critical Yield” for Federal projects in the ACF Basin. *“Critical Yield (expressed in cubic feet per second flow rates) provides the basis from which a water reservoir is allocated to various project purposes.”* Insofar as the waters of the ACF Basin include multiple Federal reservoirs, the project purpose of Fish and Wildlife Conservation must receive an equitable portion of the aggregate Critical Yield. Dismissing such an apportionment cannot be excused because Woodruff Dam and Lake Seminole are declared “run-of-the-river”. The surface waters of the ACF must be managed as the “Basin-Wide” asset they are.

C

**Issue 3 – Apalachicola Bay Salinity.** On Page 2-206 you recognize the scientific fact that *“Salinity is one of the major limiting factors in oyster production. Prolonged high salinities due to drought or other factors affecting freshwater flow allow for increased [oyster] predation....”* Not only oyster drills and stone crab, but also toxic Red Tide are saltwater-borne threats to oysters production and the health and productivity of Apalachicola Bay. Clearly, increased upstream diversion of freshwater flows to exploding urban growth and groundwater diversions for water-intensive crops are a direct and immediate threat to the Bay and to the communities depending on a healthy and productive Bay. *“River flow is the primary determinant of salinity concentrations in the estuary.”*

D

**Issue 4 – Florida’s Supreme Court Complaint.** On page 3-12 at the end of your review of over 20 years of litigation in Federal Courts on the issue of an equitable allocation of the waters of the ACF Basin, you state, *“Accordingly, there currently is no active litigation regarding USACE operation of the ACF Basin.”* There would appear to be a purposeful omission of Florida’s “Original Action” complaint against Georgia’s diversion of downstream freshwater flows, now delegated by the US Supreme Court and currently under review by their selected “Special Master” pending US Supreme Court hearing. It would seem that this Corps action on an EIS for an updated Water Control Manual is attempting to “pre-judge” US Supreme Court action. What is the process for review and adaptation of on-going legal actions as they evolve?

E

**Issue 5 – Adaptive Management.** Although the EIS is to evaluate proposed changes to management of the waters in an updated Water Control Manual for the ACF Basin, and although that draft assessment is extensive, There is no discussion of processes for change and further modification to this Water Control Manual. Nor is any organizational structure proposed for monitoring actual outcomes and adapting operational guidance to changed/changing conditions when they differ from the expected. There are several models of successful basin-wide governance available to draw on – such as the Delaware River Basin Compact (DRBC). Inclusion of such needed organizational structures would be more than just prudent. The US Supreme Court has expressed a strong preference for such a Compact in all interstate water allocation and management disputes.

F

**Recommendation –** The Corps and their contractor support (Tetra) are commended for multi-year the level of effort apparent in their work-product. All the more reason to ensure that opportunities are public involvement are adequate and meaningful. One step would be for the Corps to attempt to resolve issues such as those outlined here by timely feedback to the communities affected.

G

*David P. McLain*

David McLain

## Response to ACF015 – David McLain

- C. Conservation storage in Lake Lanier, West Point Lake, and Walter F. George Lake is used to support several project purposes, such as hydroelectric power, navigation, and fish and wildlife conservation, without specifically allocating reservoir storage to any one of them. To reallocate a specific amount of storage in one or more of the ACF storage reservoirs from conservation storage to fish and wildlife conservation would require investigations that are outside the scope of the Master WCM update process. The fish and wildlife conservation project purpose applies directly to lands and waters associated with the USACE reservoirs. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay. Additionally, the PAA includes measures necessary to address the adverse effects of project operations on federally listed endangered or threatened species downstream of Jim Woodruff Lock and Dam. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- D. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- E. In updating the Master WCM, USACE is fulfilling its statutory and legal requirements to capture changes in basin hydrology consumptive demands resulting from years of growth and development, new and rehabilitated structural features, emerging environmental issues, and the Georgia 2013 water supply storage request (as updated in December 2015). The Florida-Georgia litigation is over apportionment of the flows in the ACF Basin between the states. USACE is not a party to this litigation, and it would be inappropriate for USACE to speculate on any potential outcome. At this point, it is unclear whether the decision in this case will affect the proposed operation. USACE is following the litigation closely, however, and regardless of the outcome, it will be reviewed and analyzed by USACE and the Department of Justice. Following that review, USACE will take the appropriate action.
- F. Section 3.2 of the EIS includes the following statement: “The Mobile District continually reviews the WCM as needed to ensure that the best use is made of available water resources.” In addition, the

**Response to ACF015 – David McClain**

section refers to USACE, South Atlantic Division Regulation No. RBT-2 (Water Control Management in South Atlantic Division [2010]), which mandates that “at a minimum, Districts should review their water control manuals/plans every 5 years.” These reviews would provide the basis for determining whether formal updates are needed and would include any formal or informal input received from agencies and stakeholders. The process for future WCM updates would include appropriate technical analysis, public involvement, and environmental compliance activities.

- G. All comments received from the affected communities and other interested parties have been fully addressed in the final EIS in as timely a fashion as possible, including any adjustments to the proposed alternative and the EIS that occur as a result of public comment and additional follow-up interactions with the state and federal agencies.

## FRANKLIN COUNTY



October 21, 2015

REPLY TO: ☐  
 PLANNING & BUILDING DEPARTMENT  
 34 FORBES STREET, SUITE 1  
 APALACHICOLA, FL 32320  
 (850) 653-9783  
 (850) 653-9799 FAX

## Response to ACF016 – William Massey

REPLY TO: ☐  
 BOARD OF COUNTY COMMISSIONERS  
 33 MARKET STREET, SUITE 203  
 APALACHICOLA, FL 32320  
 (850) 653-8861, EXT. 100  
 (850) 653-4795 FAX

The Honorable Jo-Ellen Darcy  
 Asst. Secretary of the Army(Civil Works)  
 US Dept. of the Army  
 108 Army Pentagon  
 Washington, DC 20310

Lt. General Thomas P. Bostick  
 Commanding General  
 US. Army Corps of Engineers  
 2600 Army Pentagon  
 Washington, DC 20310

Dear Assistant Secretary Darcy and Lt. General Bostick:

The Franklin County Board of County Commissioners (Board) fully supports the enclosed Oct. 6, 2015 letter signed by Florida's congressional delegation regarding the draft Environmental Impact Statement and Master Water Control Manual for the ACF River Basin. The Board agrees that the Corps has continually failed to protect the health and productivity of the Apalachicola Bay.

A

The proposed draft EIS does not provide adequate freshwater flows to support the Apalachicola Bay's oyster industry. The Board believes the City of Atlanta has many options for obtaining its water supply, but the Apalachicola Bay only has one source of freshwater- the Apalachicola River. The River must be managed with the Bay as a user or the product for which it and the state of Florida are famous, the Apalachicola Bay oyster, will become images for history books. The Bay is in decline because it is becoming too salty. The Corps must provide more water to the Bay.

B

Please take the corrective action to keep the Apalachicola Bay alive.

C

Sincerely,

William Massey, Chairman  
 Franklin County Board of County Commissioners

Cc: Florida Congressional delegation

A. Comment noted.

B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

C. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.

RICK WATSON DISTRICT ONE	CHERYL SANDERS DISTRICT TWO	NOAH LOCKLEY, JR. DISTRICT THREE	JOSEPH PARRISH DISTRICT FOUR	WILLIAM MASSEY DISTRICT FIVE
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**Congress of the United States**  
**Washington, DC 20515**

October 6, 2015

The Honorable Jo-Ellen Darcy  
 Assistant Secretary of the Army (Civil Works)  
 U.S. Department of the Army  
 108 Army Pentagon  
 Washington, DC 20310

Lieutenant General Thomas P. Bostick  
 Commanding General  
 U.S. Army Corps of Engineers  
 2600 Army Pentagon  
 Washington, DC 20310

Dear Assistant Secretary Darcy and Lieutenant General Bostick:

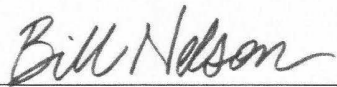
We write to express our serious concerns regarding the draft Environmental Impact Statement (EIS) and Master Water Control Manual for the Apalachicola-Chattahoochee-Flint (ACF) River Basin. We are very disappointed that this latest plan falls short of fixing the long-running failure of the U.S. Army Corps of Engineers to properly operate the dams and reservoirs along the ACF river basin. The Corps' recommended changes will do nothing to protect the health of the full ACF system.

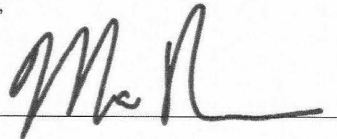
After years of being shortchanged from the freshwater it needs, the Apalachicola Bay's oyster population totally collapsed in 2012. Now, many more Bay residents may lose their way of life, including livelihoods and recreational activities that have been passed down for generations.

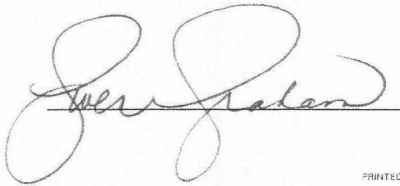
Historically, Apalachicola Bay has been one of the most productive estuaries in the Northern Hemisphere, supporting numerous species of oysters, shrimp, crab, grouper, snapper, redfish, and baitfish. The sustainability of these species is at risk due to the persistent salinity levels and nutrients flowing from Apalachicola Bay into the Gulf of Mexico.

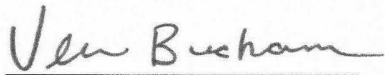
As representatives of Floridians across the state, we are deeply troubled by the Corps' consistent mismanagement of this shared resource. We strongly urge you to reconsider the proposals in the draft EIS and to remedy them in the final version.

Sincerely,

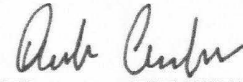








PRINTED ON RECYCLED PAPER





# United States Senate

WASHINGTON, DC 20510

November 4, 2015

The Honorable Lamar Alexander  
Subcommittee on Energy  
and Water Development  
Committee on Appropriations  
186 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Dianne Feinstein  
Subcommittee on Energy  
and Water Development  
Committee on Appropriations  
125 Hart Senate Office Building  
Washington, D.C. 20510

Dear Chairman Alexander and Ranking Member Feinstein:

We write to formally request that any forthcoming omnibus appropriations bill include language that addresses the Army Corps of Engineers' ongoing mismanagement of both the Alabama-Coosa-Tallapoosa (ACT) and the Apalachicola-Chattahoochee-Flint (ACF) River Basins. As you are aware, language dealing with the ACT has already been included in the Senate-reported Energy and Water Appropriations bill. Accordingly, due to recent developments in the ACF, we request that language be added to address this basin as well.

As background, in 1945 Congress authorized the Army Corps of Engineers to construct and operate federal facilities for managing the water resources of the ACF River System. In 1958, the Corps began to withhold water flow downstream, decreasing downstream flows over time with significant negative impacts to both Alabama and Florida. After almost three decades of litigation without resolution, resources vital to Florida and Alabama continue to be severely impacted without any relief in sight.

In light of the Corps' September 30, 2015, release of the Draft Environmental Impact Statement (DEIS) and Water Control Manual (WCM) for the Apalachicola-Chattahoochee-Flint River Basin (ACF), Congressional action is needed given the current proposal would continue to severely restrict water flows for downstream users.

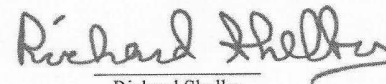
The ACF's water supply is the lifeblood for many Alabama and Florida communities, and supports multiple industrial and domestic uses. For example, both Florida and Alabama rely on the ACF for navigation and the production of hydroelectric power that supplies efficient, low-cost energy for many throughout the region. In addition, Alabama and Florida depend on the ACF for irrigation and agricultural purposes, flood control, and water quality. Without a reliable and consistent freshwater flow from the ACF, entire communities and their respective economies are left to the decisions and priorities of those upstream.

Furthermore, the ACF is a critical ecological and environmental component given how important the freshwater flows are to the fisheries resources of the Apalachicola River and Bay. The commercial fishing industry contributes over \$200 million annually to the regional economy and directly supports eighty-five percent of the local work force in the Apalachicola Bay area. The Apalachicola Bay depends on the freshwater inflow from the ACF Basin to regulate salinity,

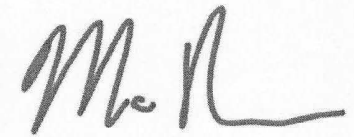
nutrient and temperature levels for its fisheries, including oysters, crab, shrimp and fish, all of which have seen a drastic decline in production. In fact, in 2012 the National Oceanic and Atmospheric Administration (NOAA) declared a commercial fisheries failure due to an ongoing fisheries disaster in Apalachicola Bay. Apalachicola Bay is a principle contributor of freshwater and nutrients to a fishery that NOAA estimates provides an economic value of \$5.8 billion to the region.

Because of each state's vital need to ensure that the ACT and ACF River Basins are properly managed with each of their interests appropriately considered, we urge the Subcommittee to include language in any omnibus appropriations vehicle that ensures that management of both of these critical basins are not left to the whims of an unaccountable federal bureaucracy, but instead is properly determined and agreed upon by each state's governor.

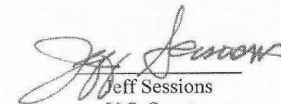
Sincerely,



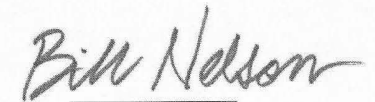
Richard Shelby  
U.S. Senator



Marco Rubio  
U.S. Senator



Jeff Sessions  
U.S. Senator



Bill Nelson  
U.S. Senator

## MARCIA M. JOHNSON

FRANKLIN COUNTY  
CLERK OF THE CIRCUIT COURT33 MARKET STREET, SUITE 203  
APALACHICOLA, FL 32320(850) 653-8861  
FAX (850) 653-2261The Honorable Jo-Ellen Darcy  
Asst. Secretary of the Army (Civil Works)  
US Department of the Army  
108 Army Pentagon  
Washington, DC 20310Lt. General Thomas P. Bostick  
Commanding General  
US Army Corps of Engineers  
2600 Army Pentagon  
Washington, DC 20310

Dear Assistant Secretary Darcy and Lt. General Bostick:

As Clerk of the Circuit Court, Franklin County, Florida, I express my full support of the attached October 6, 2015 letter signed by Florida's congressional delegation stating their concerns regarding the draft Environmental Impact Statement (EIS) and Master Water Control Manual for the Apalachicola-Chattahoochee-Flint (ACF) River Basin. I share their concern that this plan falls short of fixing our problem here in Franklin County where we desperately need freshwater flows to support the Apalachicola Bay and the oyster industry as well as our shrimp, crab, and fish industries.

I feel the Corps management of the freshwater flow has been inadequate. The Apalachicola Bay has suffered and the area has seen a drastic decline in production of seafood. I support any legislation that would require the Corps to consider freshwater flows to the Apalachicola River Basin as part of its water management plans as this will help save our bay.

I have lived in Franklin County my entire life. My father still works in the seafood industry. We need your help. I beg you to reconsider the proposals in the draft EIS and remedy them in your final version to give the people here assurance that Apalachicola Bay will remain a productive estuary.

Thank you for your consideration of this very important matter.

Sincerely,

Marcia M. Johnson  
Clerk of Circuit Court  
Franklin County, Florida

MMJ

Enclosures

## Response to ACF017 – Marcia Johnson

A. Comment noted.

B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

C. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

Congress of the United States  
Washington, DC 20515

October 6, 2015

The Honorable Jo-Ellen Darcy  
Assistant Secretary of the Army (Civil Works)  
U.S. Department of the Army  
108 Army Pentagon  
Washington, DC 20310

Lieutenant General Thomas P. Bostick  
Commanding General  
U.S. Army Corps of Engineers  
2600 Army Pentagon  
Washington, DC 20310

Dear Assistant Secretary Darcy and Lieutenant General Bostick:

We write to express our serious concerns regarding the draft Environmental Impact Statement (EIS) and Master Water Control Manual for the Apalachicola-Chattahoochee-Flint (ACF) River Basin. We are very disappointed that this latest plan falls short of fixing the long-running failure of the U.S. Army Corps of Engineers to properly operate the dams and reservoirs along the ACF river basin. The Corps' recommended changes will do nothing to protect the health of the full ACF system.

After years of being shortchanged from the freshwater it needs, the Apalachicola Bay's oyster population totally collapsed in 2012. Now, many more Bay residents may lose their way of life, including livelihoods and recreational activities that have been passed down for generations.

Historically, Apalachicola Bay has been one of the most productive estuaries in the Northern Hemisphere, supporting numerous species of oysters, shrimp, crab, grouper, snapper, redfish, and baitfish. The sustainability of these species is at risk due to the persistent salinity levels and nutrients flowing from Apalachicola Bay into the Gulf of Mexico.

As representatives of Floridians across the state, we are deeply troubled by the Corps' consistent mismanagement of this shared resource. We strongly urge you to reconsider the proposals in the draft EIS and to remedy them in the final version.

Sincerely,

Bill Nelson

Mr. R

Joel Salas

Ven Buchanan

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Paul C. Cundin



U.S. CORPS OF ENGINEERS  
STATEMENT OF CAPT. PETER H. BURGHER  
REGARDING THE APALACHICOLA  
JACKSON RIVER WATERSHEAD

## CRITICAL ISSUES:

- 1) Navigability of the Rivers
- 2) Flow of water into Apalachicola Bay

## QUALIFICATIONS OF THIS COMMENTOR

I am a U.S. C. G. licensed captain, 100 Ton Inland Waters, and have operated passenger vessels in the Apalachicola Bay, Rivers and Estuary since 2001. As the primary Captain for the Apalachicola Maritime Museum for five years and as operator of Bay Eco-Tours for one year I have navigated the waters described above on a regular basis. This experience has provided a close-up knowledge that is equal to anyone in the area. I have more than 75 years on the water in various parts of the U.S. and U. K.

## OBSERVATIONS ON CORPS OF ENGINEERS OPERATIONS

There are two basic action areas in which the Corps of Engineers operations have been deficient over the last ten to twenty years:

- 1) Navigability of the Apalachicola and Jackson rivers has been adversely affected by Corps of Engineers failure to maintain navigable river depths (should be minimum 15 ft. center of channel at low, low tide). Navigability has also been adversely affected by the Corps of Engineers failure to remove trees, snags and debris, both man-made and natural in origin, throughout the formerly navigable waters from Chattahoochee to Apalachicola and from Apalachicola to Panama City.

A

The Corps of Engineers operating plan should include maintaining the navigability of these waterways so private and commercial traffic can operate safely throughout.

- 2) Flow of fresh water through the Flint, Jackson and Apalachicola rivers should be maintained to adequately assure the water in Apalachicola Bay is healthy and suitable for aquaculture and the fishing industries that have depended on them for a century or more. This matter has been the subject of court actions, legislation and a lot of yelling and screaming and must be stabilized and settled on a sustainable basis. The Corps of Engineers must adopt a maintenance and water release/flow schedule that can be relied upon by the downstream affected communities or both natural and economic disaster will result. The failure by the Corps of Engineers to date has resulted in concomitant effects (such as increasing reliance on tourism, with severe ecological impact) that can eliminate valuable species of flora, fauna and aquaculture. We have been informed that the Apalachicola Estuary will lose 10% or more of its 1300 species if water flows are not resumed to historical levels. Worse yet, it is estimated that 1800 to 2000 individuals will permanently lose sources of income if normal flows do not resume.

B

## CONCLUSION

We must rely upon the Corps of Engineers to do its job, there is no viable alternative. Consequently, the Corps of Engineers has to define and act upon its responsibilities within the needs and objectives of all its constituent communities. That means we who live here.

## Response to ACF018 – Peter Burgher

A. Navigation is a congressionally authorized purpose of the ACF system. The difficulties in accomplishing the navigation purpose as intended by Congress are detailed in EIS section 2.1.1.2.4.3.

B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

Lanier\_court\_reporter\_comments

1

PUBLIC MEETING

HOSTED BY TETRA TECH

IN RE:

LAKE LANIER RESERVOIR

October 26, 2015  
Gainesville Civic Center  
830 Green Street, NE  
Gainesville, GA 30501

Veritext Legal Solutions  
Atlanta Region  
1075 Peachtree Street, Suite 3625  
Atlanta GA 30309

Page 1

## PUBLIC STATEMENTS

BY BONNY PUTNEY:

Bonny, B-O-N-N-Y, Putney, P-U-T-N-E-Y,  
and I'm with Lake Lanier Association. My email  
address is

My comment is that I would like to see  
Glades Farm not happen. I would like see it  
turned down with the Corp of Engineers. I don't  
think that it's going to supply anybody with any  
measurable amount of water that's going to help  
during a drought or otherwise, and I think the  
Chattahoochee River is way too small to  
effectively support another reservoir on it.  
That's my comment.

A

\*\*\*\*\*

BY BARRY LUCAS:

B.H. Lucas at bhforsythco.com. I'm a  
resident of Forsyth County, and I work for Forsyth  
County water & Sewer.

we are happy that you updated the plan.  
Assuring a secure water supply should be the Corp's  
top priority for Lake Lanier.  
Georgia's full water supply requests should  
have been granted. The EIS confirms the full request  
is needed, and no sound reason is given for denying

A

## Response to ACF019a – Bonny Putney

- A. The decision to permit construction of Glades Reservoir was being considered by USACE, Savannah District Regulatory Division and is outside the scope of the Master WCM update process. A draft EIS for Glades Reservoir has been filed with EPA and has undergone public review. A public meeting was held on December 8, 2015. The Master WCM update process assumed for analytical purposes only that Glades Reservoir would be permitted and constructed and does not constitute an agency decision on the merits of the project. The GAEPD letter dated January 29, 2016, stated that Hall County's certification of need for water supply from Glades Reservoir has been rescinded. Subsequently, in April 2016, Hall County temporarily withdrew the permit application for the project. Accordingly, USACE has revised the water supply options presented in the final EIS to exclude Glades Reservoir as a reasonably foreseeable action with regard to water supply. While Glades Reservoir was carried over in the final EIS to show continuity, no alternatives except the previous PAA in the draft EIS include Glades. If the Glades Reservoir permit application is reactivated at some point in the future, USACE, Savannah District will make the decision whether to issue a 404 permit to construct Glades Reservoir independent of this WCM update.

## Response to ACF020 – Barry Lucas

- A. In December 2015, the State of Georgia submitted additional information regarding the water supply needs in Metro Atlanta. The final EIS considers the 2015 water supply request by evaluating water supply withdrawals of 242 mgd directly from Lake Lanier (20 mgd under the existing relocation contracts and 222 mgd under the 1958 Water Supply Act and releases from Buford Dam to provide 379 mgd for withdrawal by Metro Atlanta water supply providers.

1                   Lanier\_court\_reporter\_comments  
the request. The benefits of granting the full  
2 request far exceed the cited impacts, which are small.

3           Let's see if I want to make any other  
4 points.

5           The Corp needs to credit return flows to  
6 Lake Lanier. Treated wastewater flows need to be  
7 given full credit for return to Lake Lanier.

B

8           Last thing: Other alternatives need to  
9 be studied, including plans to raise the  
10 conservation pool of Lake Lanier and reduce the  
11 winter draw down at West Point Lake.

C

12          That's it.

D

13                   \*\*\*\*\*

14 BY VAL PERRY:

15           My name is Val Perry, P-E-R-R-Y, and I'm  
16 the president of Lake Lanier Association, and  
17 that's a 3,000-member organization dedicated to  
18 keeping the lake clean, and full, and safe.  
19 That's what we do.

20           I think, first of all, the Corp has done  
21 a good job of getting to this point. They've been  
22 working on -- you know, it's 50 years old, the  
23 water control plan we're using now. So in 50  
24 years, we should have had multiple ones. Now  
25 we're doing it. That's a good thing.

A

#### Response to ACF020 – Barry Lucas

- B. Current USACE practice treats wastewater return flows in the same manner as natural inflows and does not allow credit for return flows to a specific user. This is a national policy issue that is outside the scope of the Master WCM update.
- C. As stated in section 4.1.1, the Master WCM update has been conducted to determine how the federal projects in the ACF Basin should be operated for their authorized purposes, in light of current conditions and applicable laws. Raising the top of the conservation pool at Lake Lanier would require reallocating storage from the flood control pool and would adversely affect the level of flood risk management provided by the project. One of the screening criteria described in EIS section 1.4.4 was to maintain at least the current level of flood risk management. Accordingly, raising the conservation pool at Lake Lanier by 2 ft would not meet this criterion and was not carried forward.
- D. Flood risk management at West Point Lake is an authorized purpose. Raising the winter pool at West Point Lake would reduce the seasonal flood storage and increase the risk of flooding downstream. This suggestion is not consistent with the screening criteria (see draft EIS section 1.4.4) that any alternative considered by USACE should not increase flood risk above the current level.

#### Response to ACF021 – Val Perry

- A. Concur.



2 full as possible, and at the same time be sure we  
3 take care of the rest of the system.  
4 The two things that I think they have left  
5 out of this work, the first one is, they have not  
6 considered taking the lake up two feet. Right now it  
7 is at 1071 feet above sea level. That's the height.  
8 And I want to take it up two feet to 1073 feet above  
9 sea level. That gives an additional 26 billion  
10 gallons of available water for the entire system.  
11 That should be done. And the cost is minimal. So  
12 that's one point, take it up to 1037. It's cheap, and  
13 it's something we ought to be doing.

B

14 The second thing is that Glades Reservoir,  
15 which has been mentioned in here, does not come under  
16 the purview of the Corp of Engineers. And what Glades  
17 is, is a tiny reservoir, but a new one, that they're  
18 proposing to be for the City of Gainesville, Duval  
19 County, north of where the Corp takes responsibility  
20 for the Chattahoochee River. And so there needs to be  
21 a rule on the withdrawals and the fill-up of Glades  
22 Reservoir based on how full Lake Lanier is, and that  
23 has not been discussed here at all.

C

24 My proposal would be, you don't fill up  
25 Glades Reservoir, take withdrawals from the

B. As stated in section 4.1.1, the Master WCM update has been conducted to determine how the federal projects in the ACF Basin should be operated for their authorized purposes, in light of current conditions and applicable laws. Raising the top of the conservation pool at Lake Lanier would require reallocating storage from the flood control pool and would adversely affect the level of flood risk management provided by the project. One of the screening criteria described in EIS section 1.4.4 was to maintain at least the current level of flood risk management. Accordingly, raising the conservation pool at Lake Lanier by 2 ft would not meet this criterion and was not carried forward.

C. Any Chattahoochee River withdrawals for the potential Glades Reservoir are evaluated by the Savannah District Regulatory Division in reviewing the permit application. Water withdrawals are authorized and permitted by Georgia Department of Natural Resources. However, the State of Georgia has rescinded the certificate of need for Glades reservoir and it is not included in the PAA in the final EIS.

5

1 Chattahoochee River until Lake Lanier is at least  
2 at normal full pool. That's 1071, or 1073, if I

3                   Lanier\_court\_reporter\_comments  
ever win this battle to get it up that high.

4                   I think that -- we need to have a system  
5                   to manage all this, and this the best one to do  
6                   it, the Corp to do it.

7                   And so I'm hopeful that they will consider  
8                   1073 and management of the withdrawals from the  
9                   Chattahoochee for the Glades Reservoir.

10                   \*\*\*\*\*

11                   BY JONATHAN HEARD:

12                   My name is Jonathan Heard. My  
13                   affiliation is with the City of Cumming, and my  
14                   email address is jon.heard@cityofcumming.net.

15                   I just to want say that I believe that  
16                   the full quantity of water for water withdrawals  
17                   for drinking water should have been granted to the  
18                   State of Georgia.

A

19                   I also want to state that I believe that  
20                   the cities and counties that discharge water back  
21                   into Lake Lanier and the Chattahoochee River  
22                   should receive credit for those return flows.

B

23                   And, also, that the Corp really should  
24                   consider raising the lake level to 1073. I  
25                   believe it's a viable option, and that it adds a

C

6

1                   great quantity of water to the lake, which could  
2                   be used at times of drought, also for water  
3                   supply, and also for all the other issues that the

Page 5

#### Response to ACF022 – Jonathan Heard

- A. In December 2015, the State of Georgia submitted additional information regarding the water supply needs in Metro Atlanta. The final EIS considers the 2015 water supply request by evaluating water supply withdrawals of 242 mgd directly from Lake Lanier (20 mgd under the existing relocation contracts and 222 mgd under the 1958 Water Supply Act and releases from Buford Dam to provide 379 mgd for withdrawal by Metro Atlanta water supply providers.
- B. Current USACE practice treats wastewater return flows in the same manner as natural inflows and does not allow credit for return flows to a specific user. This is a national policy issue that is outside the scope of the Master WCM update.
- C. As stated in section 4.1.1, the Master WCM update has been conducted to determine how the federal projects in the ACF Basin should be operated for their authorized purposes, in light of current conditions and applicable laws. Raising the top of the conservation pool at Lake Lanier would require reallocating storage from the flood control pool and would adversely affect the level of flood risk management provided by the project. One of the screening criteria described in EIS section 1.4.4 was to maintain at least the current level of flood risk management. Accordingly, raising the conservation pool at Lake Lanier by 2 ft would not meet this criterion and was not carried forward.

4 plan addresses, and that's it. It's simple.

5 \*\*\*\*\*

6 BY TIM PERKINS:

7 Tim Perkins, Forsyth County Water &  
8 Sewer, and email is tmperkins@forsythco.com.

9 First, I'll probably send them written  
10 comments also, after I've had a little longer to  
11 digest the documents. My major concern right now  
12 would be the lack of the plan meeting Georgia's  
13 request for water withdrawn directly from the  
14 lake, and the lack of incentive for encouragement

A

15 for wastewater return flows to be put back in the  
16 lake. There doesn't seem to be credit given for a  
17 municipality that's able to return flow to the  
18 lake to reduce the net withdrawal.

B

19 I lost my train of thought.

20 Another concerned area, there seems to be  
21 some language reducing the amount of withdrawal to  
22 some recreational needs in the lake and in the  
23 river downstream of the lake. I believe that  
24 those areas of concern should be the  
25 State of Georgia's to decide of whether or not

C

7

1 it's more important to provide for the economic  
2 growth for the water supply versus the  
3 recreational impacts, rather than that be a  
4 Corp of Engineers management decision.

#### Response to ACF023 – Tim Perkins

- A. In December 2015, the State of Georgia submitted additional information regarding the water supply needs in Metro Atlanta. The final EIS considers the 2015 water supply request by evaluating water supply withdrawals of 242 mgd directly from Lake Lanier (20 mgd under the existing relocation contracts and 222 mgd under the 1958 Water Supply Act and releases from Buford Dam to provide 379 mgd for withdrawal by Metro Atlanta water supply providers.
- B. Current USACE practice treats wastewater return flows in the same manner as natural inflows and does not allow credit for return flows to a specific user. This is a national policy issue that is outside the scope of the Master WCM update.
- C. Lake Lanier/Buford Dam in the ACF System is a federally authorized multi-purpose project, of which recreation is an authorized purpose for Lake Lanier. USACE is legally required to analyze the effects of any major Federal action on the human environment. The update of the WCMs, and the consideration of Georgia's request, qualifies as such a major federal action. As explained in section 5.3 of the draft EIS, a wide variety of factors and potential effects were considered in selecting the PAA.

5                   Lanier\_court\_reporter\_comments  
6       I'd like to see them consider the raising  
lake level two feet in elevation.

D

7           I'll write in the rest of mine. I wanted to  
8       give a few comments today. I'll try to submit some  
9       more detailed comments in writing.

10                               \*\*\*\*\*

11       BY ROBERT HORNE:

12           My name is Robert Horne, H-O-R-N-E. I'm  
13       a resident of Gainesville. Email,  
14       -

15           I have read the documents filed in the  
16       last few days, which we're reviewing now. I  
17       noticed favorable comments about the possibility  
18       of implementing the lake reservoir.

19           Back in 2011, when Glades Reservoir was  
20       being considered, an alternative was being  
21       considered very close by on the other side of the  
22       river called Mud Creek and Hagen Creek, H-A-G-E-N.

23           I'm not suggesting that they be built  
24       now, but it would seem appropriate to include them  
25       in any future consideration, and to make that

A

8

1       consideration now so that any planning for roads  
2       and construction of homes, and other things like  
3       that, would be taken into account appropriately,  
4       and we don't build roads and houses which get  
5       demolished in 30 years time.

#### Response to ACF023 – Tim Perkins

D. As stated in section 4.1.1, the Master WCM update has been conducted to determine how the federal projects in the ACF Basin should be operated for their authorized purposes, in light of current conditions and applicable laws. Raising the top of the conservation pool at Lake Lanier would require reallocating storage from the flood control pool and would adversely affect the level of flood risk management provided by the project. One of the screening criteria described in EIS section 1.4.4 was to maintain at least the current level of flood risk management. Accordingly, raising the conservation pool at Lake Lanier by 2 ft would not meet this criterion and was not carried forward.

#### Response to ACF024 – Robert Horne

A. The draft EIS considered several measures, other than reallocation for Lake Lanier, that could provide water supply to communities currently withdrawing water from Lake Lanier (see draft EIS sections 5.1.2 and 5.1.3), including Glades Reservoir and new surface water sources. The GAEPD letter dated January 29, 2016, stated that Hall County's certification of need for water supply from Glades Reservoir has been rescinded. Accordingly, USACE has revised the water supply options presented in the final EIS to exclude Glades Reservoir as a reasonably foreseeable action with regard to water supply. While Glades Reservoir was carried over in the final EIS to show continuity, no alternatives except the previous PAA in the draft EIS include Glades.

Lanier\_court\_reporter\_comments  
(End of public statements.)

Lanier\_court\_reporter\_comments

shorthand by me and thereafter transcribed under my  
supervision with computer-aided transcription; that  
the statements are a true and correct record; and that  
I am neither of counsel or kin to any party in said  
action, nor interested in the outcome thereof.

WITNESS my hand and official seal this 10th  
day of November 2015.

<%Signature%>

\_\_\_\_\_  
Notary Public

9

C E R T I F I C A T E

I do hereby certify that I am a Notary  
Public in good standing, that the aforesaid statements  
were taken at the time and place indicated. That said  
statements were correctly recorded in machine

Page 8

Page 9

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**From:** Bonny Putney  
**Sent:** Thursday, January 28, 2016 2:57 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Lake Lanier

The water control manual needs to reflect the reality of the people who live on, enjoy use and depend on Lake Lanier. The following issues are huge problems if we experience another drought like the one we had a few years ago.  
 The manual needs to revise the navigation plan to avoid the severe impact the proposed plan will have on Lanier's water levels.

- 
- |  |   |
|--|---|
| 1. Incorporate rigorous drought prediction that will trigger changes in reservoir operations to preserve lake levels during drought.   | A |
| 2. Manage the reservoirs to retain maximum storage levels in the reservoirs so that drought conditions will not have the devastating impact that was experienced in December 2007. | B |
| 3. Model and plan for raising Lake Lanier's full pool level to 1073  | C |

Thank you!  
 Bonny Putney  
 Sent from my iPhone

#### Response to ACF019b – Bonney Putney

- A. USACE regulations do not allow use of forecasts in real-time project operations. Forecasted conditions may be used for planning future operations, but releases will follow the water control operations plan based on observed conditions within the watershed to the extent practicable. The Drought Contingency Plan (DCP) sections 3-02 and 3-03 contained as an exhibit in the WCMs in appendix A of the EIS includes discussion of drought identification and National Integrated Drought Information System (NIDIS). An NIDIS pilot program has been established for the ACF River Basin with the goal of developing a regional Drought Early Warning Information System. The system will use key indicators of drought to make timely drought forecast. USACE is a contributor and user of the NIDIS pilot project tools.
- B. Under the drought operations provisions in the PAA, USACE would more proactively manage water resources in the reservoirs as drier conditions emerge in the basin. In the early stages of drought operations, the water management constraints on the projects would be subtle and the effects in the system barely noticeable. Operations would become progressively more constrained as drought conditions become more severe. Conserving storage in that way would enable the projects to continue meeting all authorized project purposes and needs in the basin until drought conditions improve and would promote faster recovery of the reservoirs. Compared to the drought operations provisions in the NAA, the provisions in the PAA would result in improved conditions in Lake Lanier under extreme drought conditions such as occurred in 2007–2008.
- C. As stated in section 4.1.1, the Master WCM update has been conducted to determine how the federal projects in the ACF Basin should be operated for their authorized purposes, in light of current conditions and applicable laws. Raising the top of the conservation pool at Lake Lanier would require reallocating storage from the flood control pool and would adversely affect the level of flood risk management provided by the project. One of the screening criteria described in EIS section 1.4.4 was to maintain at least the current level of flood risk management. Accordingly, raising the conservation pool at Lake Lanier by 2 ft would not meet this criterion and was not carried forward.



**Public Meeting**

**1**

1           APALACHICOLA-CHATTAHOOCHEE-FLINT RIVER BASIN  
2           DRAFT ENVIRONMENTAL IMPACT STATEMENT  
3           WATER CONTROL MANUAL UPDATE  
4           AND WATER SUPPLY STORAGE ASSESSMENT  
5           OPEN HOUSE  
6  
7  
8  
9           PUBLIC MEETING  
10          COMMENTS  
11  
12  
13   TIME:   4:00 p.m. Eastern  
14   DATE:   Tuesday, October 27, 2015  
15   PLACE:   West Point Depot  
16            500 3rd Avenue  
17            West Point, Georgia 31833  
18  
19  
20   COURT REPORTER: Virginia Denese Barrett, CCR  
21  
22  
23  
24  
25

**Freedom Court Reporting, Inc**

**877-373-3660**

Public Meeting

2

1 STATEMENT OF DEBBIE BUCKNER  
2 EMAIL: debbie.buckner@house.ga.gov  
3 COMPANY: State Representative  
4 \* \* \* \* \*

Response to ACF025 – Debbie Buckner

5 MS. BUCKNER: The main thing is we need an  
6 extension. The proposed plan is so large or so long  
7 and with the holidays and the fact that we haven't  
8 done this in fifty-seven years, that we need to get  
9 it right. So I think we need an extension on the  
10 comment period. Sixty days would be great.

A

A. Subsequent to this comment, the comment period was extended from 60 days to 105 days (ending on January 15, 2016).

11 The second thing is that I really hope  
12 that the comments that are submitted will seriously  
13 be considered and assimilated into the report. In  
14 this area of the state, a large number of people  
15 have worked on the water issues of our area and have  
16 a great deal of factual information backed up by a  
17 lot of scientific data, and it needs to be  
18 considered seriously.

B

B. USACE considers comments made by all stakeholders equally.

19 \* \* \* \* \*  
20 STATEMENT OF ANITA JONES  
21 EMAIL: None  
22 COMPANY: Private Resident  
23 \* \* \* \* \*  
24 MS. JONES: I came here today because I  
25 knew that Atlanta had requested for more water to be

## Public Meeting

3

1 taken out of our Chattahoochee River, which I think  
2 is ridiculous. Chattahoochee River as we -- you  
3 know, used to have steamboat traffic. It's so  
4 degraded now. It's sad. We have a place on Lake  
5 Harding which is just right on down the river.  
6 We've got West Point Lake and then the dam and then  
7 the river comes down and you've got Lake Harding.  
8 And I've lived here all of my life. All my life.  
9 I'm sixty-four. And we just have got -- Atlanta has  
10 got to find a way. I think they need to build a

A

11 desalination plant on the coast, pipe it in in a  
12 pipe as big as this room and pipe it in. Use it,  
13 clean it, put it back in the rivers and we'll all be  
14 happy. I don't care if it costs billions. Do it.  
15 You pipe oil and you pipe gas, which I hate that,  
16 too. I'm also an environmentalist, recycling, all

B

17 of those things. And I just think there's money and  
18 people who have money are turning their -- a blind  
19 eye. The reality of this is -- this is the only  
20 planet we've got, and this is our area. This is our  
21 river. I'm sorry Atlanta has to use it before we  
22 get -- but anyway, we need help. Atlanta -- I saw  
23 some EPA people getting gas recently just right up  
24 the river. I talked to them. I said -- and I said  
25 to them, I said, You need to quit sucking that water

C

### Response to ACF026 – Anita Jones

- A. USACE has considered Georgia's 2013 request for water, and their subsequent revised 2015 request, in response to the June 28, 2011, opinion of the U.S. Court of Appeals for the 11th Judicial Circuit. This opinion set aside the United States Army's 2002 decision to deny Georgia's 2000 request and ordered a remand to USACE to reconsider whether it has the legal authority to operate the Buford project to accommodate Georgia's request, in light of the legal authority conferred by Congress in the River and Harbor Act of 1946; Public Law 84-841 (July 30, 1956) (1956 Act); and the Water Supply Act of 195.
- B. Constructing a desalinization plant was a measure considered in section 5.1.3.3 of the draft EIS; however, it was more expensive than other measures for producing an equivalent source for water supply and was not carried forward for detailed evaluation.
- C. Control of the population growth in Metro Atlanta is the responsibility of state or local governments and is outside the scope of the Master WCM update.

Public Meeting

4

1 out. I said, Either that or Atlanta just needs to  
2 quit growing. She said, Oh, you know, Atlanta is  
3 not going to do that. I'm going, All right, then.  
4 Do you have a plan? And don't do it by sucking more  
5 water out of the river or the Flint. Leave the  
6 Flint alone, for heaven's sakes. That's not their  
7 river. Leave them alone. I don't think they need  
8 to take it out of Lake Lanier. Well, that's still  
9 the same river system. I'm about ready to move to  
10 Mobile where they've got plenty of water so I can  
11 quit worrying about this because it bothers me a  
12 lot. That's my statement.

13 \* \* \* \* \*  
14 STATEMENT OF MAC MCGOWAN  
15 EMAIL:  
16 COMPANY: West Point Lake Coalition  
17 \* \* \* \* \*

Response to ACF027 – Mac McGowan

18 MR. MCGOWAN: Well, as I said, I'm the  
19 co-chairman of the West Point Lake Coalition, and we  
20 are just as stakeholders, part of the many  
21 stakeholders of the river system, just very  
22 disappointed that the new water control plan just  
23 basically ignored the scientific information and  
24 data that was provided by a variety of stakeholders.  
25 You know, there's some sixty some odd stakeholders

A

A. The ACF Stakeholder's sustainable water management plan (SWMP) was received by USACE in early June 2015. USACE received the report and its recommendations too late to be fully evaluated and considered in the draft EIS. Further, the SWMP, as initially submitted to USACE, did not include the necessary supporting technical documentation and underlying assumptions to fully evaluate the recommended management measures. The SWMP recommendations were considered to the extent possible in the final EIS.

Public Meeting

5

1 along the river system. And what our main thing  
2 was, currently the minimum lake level is six hundred  
3 and twenty-eight feet mean sea level. And when it  
4 gets down to that level, about half the boats around  
5 the lake are sitting in the mud, and people don't  
6 like that. And what we were advocating was raising  
7 the minimum level to I think it was six hundred  
8 thirty-two and a half feet. And we've provided data  
9 to show that the likelihood of that creating a  
10 flooding problem is about like one grain of sand in  
11 the Sahara Desert. But needless -- regardless, our  
12 recommendation was ignored, and that was not  
13 changed. We also recommended, you know, that there  
14 could be, if not six thirty-two and a half, maybe a  
15 little bit less or a little bit less, but something  
16 more than it is so that the people around West Point  
17 Lake could use the lake year round. That lake I

B

18 think it has been proved or proven, whichever the  
19 correct word is, that it has an economic impact of  
20 like three quarter of a billion dollars. And we  
21 draw two million, two and a half million visitors  
22 every year. But they don't come from September to  
23 about March because there's no water. They can't  
24 get in the lake. We've got a problem. We just  
25 really don't understand with all of the data that's

C

Response to ACF027 – Mac McGowan

B. Flood risk management at West Point Lake is an authorized purpose. Raising the winter pool at West Point Lake would reduce the seasonal flood storage and increase the risk of flooding downstream. This suggestion is not consistent with the screening criteria (see draft EIS section 1.4.4) that any alternative considered by USACE should not increase flood risk above the current level.

C. Winter pool levels at West Point Lake generally follow the established guide curve for the project. The winter drawdown in the guide curve provides additional flood storage capacity to fulfill the authorized flood risk management purpose of the project. The PAA does not change flood control operations from the current level. One of the criteria established for the Master WCM update was that any proposed changes to the WCM would not increase flood risk in the ACF Basin. Therefore, an increase in the winter guide curve level was not carried further.

Public Meeting

6

1           been presented to show otherwise why the Corps -- I  
2           use Corps as a generic term -- elected to ignore  
3           that and not make the recommended change that we've  
4           asked for. That's my opinion and I'm sticking to  
5           it. Thank you. Appreciate your time.

6           \* \* \* \* \*

7           (Whereupon, no further statements were  
8           given and the proceedings were  
9           concluded.)

Freedom Court Reporting, Inc

877-373-3660

Public Meeting

7

1           CERTIFICATE

3       STATE OF ALABAMA

4       ELMORE COUNTY

5           I hereby certify that the above and  
6       foregoing testimony was taken down by me in stenotype  
7       and the questions and answers thereto were  
8       transcribed by means of computer-aided transcription,  
9       and that the foregoing represents a true and correct  
10      transcript of the testimony given by said witnesses  
11      upon said hearing.

12          I further certify that I am neither of  
13      counsel, nor of kin to the parties to the action, nor  
14      am I in anywise interested in the result of said  
15      cause.

19                   /s/Virginia Denese Barrett

20                   CCR #458, Expires 9/30/16

21                   Commissioner for the

22                   State of Alabama at Large

23                   My Commission Expires 9/14/19

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## Public Meeting

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2141214-Public Meeting and Comments-1

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U.S. ARMY CORPS OF ENGINEERS  
APALACHICOLA-CHATTAHOOCHEE-FLINT  
MASTER WATER CONTROL MANUAL  
DRAFT ENVIRONMENTAL IMPACT STATEMENT  
and WATER SUPPLY STORAGE ASSESSMENT

PUBLIC MEETING and COMMENTS

DATE: November 9, 2015  
TIME: 4:00 p.m. to 6:00 p.m.  
PLACE: Apalachicola National Estuarine  
Research Reserve  
108 Island Drive  
Eastpoint, Florida  
REPORTED BY: Lisa D. Wilkerson  
Court Reporter

2

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2

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3

1	COMMENT 1 - DAVID MCLAIN
2	MR. MCLAIN: Well, you have the contact
3	information here, so I won't repeat that. You
4	have, on the back side there, an opportunity to
5	identify what it is that you're specifically
6	interested in. Really, these two items are the
7	ones that I am more interested in than any
	Page 2

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8 other.

9 The two items that are of particular  
10 concern to me are Fish and wildlife  
11 Conservation, as an authorized purpose of the  
12 ACF Basin Management and of this water  
13 management plan, and the health and  
14 productivity of the Apalachicola Bay. They're  
15 related.

16 So what I will do is, I'm going to leave  
17 you the written comments that I've provided you  
18 there. And I'm going to cheat and look at some  
19 of what I've said, because I think it's very  
20 important that I get it right as well.

21 whenever I've had a chance to speak my  
22 mind relative to these subjects, I've always  
23 thought that getting an assumption out first --  
24 what are the assumptions that we're making?  
25 And I will say that my assumptions are as

A

4

1 follows: That the goal is to change the  
2 operation and management of the ACF Basin to  
3 achieve three things: First, an equitable  
4 solution among stakeholders to balance the  
5 economic, ecological, and social values.  
6 Second, viable solutions that ensure that the  
7 entire ACF Basin, top to bottom, is a  
8 sustainable resource for current and future  
9 generations. Finally, that solutions presented  
10 are based on the best available technology and  
11 science.

Page 3

A. The goal of the Master WCM update, as expressed in the comment, is not consistent with the purpose and need statement in the EIS (section 1.2). The purposes of the Master WCM update and WSSA (appendix B in the EIS) are to determine how the federal projects in the Apalachicola-Chattahoochee-Flint (ACF) Basin should be operated for their authorized purposes, in light of current conditions and applicable laws, and to assess the extent to which reservoir storage at Lake Sidney Lanier (Lake Lanier) can be made available to meet current and future water supply needs for Metro Atlanta. In the Master WCM update process, balancing project operations to fulfill all authorized purposes in the most effective manner does require consideration of stakeholder interests as well as the environmental effects of proposed changes to current operations. The analysis by the U.S. Army Corps of Engineers (USACE) in the EIS is based upon the best available technology and science.

2141214-Public Meeting and Comments-1  
I don't know that you have had an

opportunity or any desire to look at the document that we're reviewing here today. But it is required by law for a federal project to have an Environmental Impact Statement, no matter whether you're talking about the oil pipeline through Kansas or you're talking about water management of the ACF Basin.

This is the Draft Environmental Impact Statement for the Water Control Manual update for the ACF Basin.

There are over 300 pages that have been produced by the Corps and their contractor, a company called Tetra, T-E-T-R-A. That is

5

A

overwhelming to people who have not had the opportunity to spend the 20 years that I have on this subject.

The only way that I can deal with it is to pick out specific issues that, in my judgment, need resolution in order for this Water Control Manual update to be successful. That's my aim.

I have identified five issues that I wanted to focus on, five key issues, in light of the assumptions that I've cited, that need to be resolved. My hope is that they will be resolved by the Corps of Engineers and their contractor in the publication of the final Water Control Manual.

Let me name those five issues to start with: Those are fishery habitat, number one.

Page 4

2141214-Public Meeting and Comments-1

17 Number two is critical yield allocation. The  
18 third is Apalachicola Bay salinity. The fourth  
19 is Florida's Supreme Court Complaint. And the  
20 fifth is adaptive management.

21 Taken in the aggregate, my hope and  
22 expectation is that the Corps and/or their  
23 contractor will seek to resolve these issues,  
24 which are serious issues, and provide feedback  
25 to stakeholders, such as myself, who are

6

1 raising them for concern.

2 Now, let me take each one of the issues in  
3 order, starting with fishery habitat.

4 On page 2-60 of the Draft EIS, Fish and  
5 wildlife Conservation is cited as an authorized  
6 purpose of the entire ACF Basin as directed by  
7 P.L. 85-624.

8 However, for "projects authorized prior to  
9 that law's enactment, modification of  
10 operations shall be compatible with basic  
11 project purposes."

12 Those basic project purposes are  
13 enumerated elsewhere in the document, but have  
14 to do with water supply, flood risk control,  
15 et cetera. And I won't go into spelling out  
16 what those are.

17 The incompatibility that is implied to  
18 exist between Public Law 85-624 and the other  
19 authorized uses is what is implied as the  
20 reason why the Draft EIS does not use Fish and

Page 5

B

B. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

21 2141214-Public Meeting and Comments-1  
 22 wildlife Conservation to measure allocation of  
 23 the water.  
 24 The incompatibility between ensuring a  
 25 healthy and productive fishery habitat in the  
 Apalachicola Bay and "any basic project

7

1 purposes," cannot be just implied, it must be  
 2 specified.  
 3 what is that incompatibility and why can't  
 4 it be resolved? Likewise, the protection  
 5 afforded fish spawning by management of lake  
 6 levels needs to be extended to the fish  
 7 spawning in an inundated floodplain of the  
 8 Apalachicola.

9 Issue 2 is critical yield allocation. On  
 10 page 2-101 of the Draft EIS, there is a  
 11 discussion of water allocation based on  
 12 "critical yield" for federal projects in the  
 13 ACF Basin. Critical yield is expressed in  
 14 cubic feet per second flow rates, and it  
 15 provides the basis from which a water reservoir  
 16 is allocated to various project purposes.  
 17 Insofar as the waters of the ACF Basin include  
 18 multiple federal reservoirs, the project  
 19 purpose of Fish and wildlife Conservation must  
 20 receive an equitable portion of the aggregate  
 21 critical yield. Dismissing such an  
 22 apportionment cannot be excused because  
 23 woodruff Dam and Lake Seminole are declared  
 24 "run-of-the-river." The surface waters of the  
 25 ACF must be managed basin-wide, as the  
 Page 6

C

C. Conservation storage in Lake Lanier, West Point Lake, and Walter F. George Lake is used to support several project purposes, such as hydroelectric power, navigation, and fish and wildlife conservation, without specifically allocating reservoir storage to any one of them. To reallocate a specific amount of storage in one or more of the ACF storage reservoirs from conservation storage to fish and wildlife conservation would require investigations that are outside the scope of the Master WCM update process. The fish and wildlife conservation project purpose applies directly to lands and waters associated with the USACE reservoirs. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay. Additionally, the PAA includes measures necessary to address the adverse effects of project operations on federally listed endangered or threatened species downstream of Jim Woodruff Lock and Dam. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.



1 basin-wide assets that they are.

2 Issue 3, Apalachicola Bay salinity. On  
3 page 2-206 of the Draft EIS, you recognize the  
4 scientific fact that "Salinity is one of the  
5 major limiting factors in oyster production.  
6 Prolonged high salinities due to drought or  
7 other factors affecting freshwater flow allow  
8 for increased oyster predation." Not only  
9 oyster drills and stone crab, but also toxic  
10 algal blooms, such as Red Tide, are all  
11 saltwater-borne threats to oysters and oyster  
12 production and the health and productivity of  
13 Apalachicola Bay.

14 Clearly, increased upstream diversion of  
15 freshwater in the basin to feed the exploding  
16 urban growth and groundwater diversions for  
17 water-intensive crops are a direct and  
18 immediate threat to the Bay and to the  
19 communities depending on a healthy and  
20 productive bay. "River flow is the primary  
21 determinant of salinity concentrations in the  
22 estuary."

23 Issue 4, Florida's Supreme Court  
24 complaint. On page 3-12 of the EIS Draft, at  
25 the end of your review of over 20 years of

1 litigation in federal courts, on the issue of  
2 an equitable allocation of the waters of the

D. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

D

Response to ACF028 – David McClain

E

E. In updating the Master WCM, USACE is fulfilling its statutory and legal requirements to capture changes in basin hydrology consumptive demands resulting from years of growth and development, new and rehabilitated structural features, emerging environmental issues, and the Georgia 2013 water supply storage request (as updated in December 2015).

The Florida-Georgia litigation is over apportionment of the flows in the ACF Basin between the states. USACE is not a party to this litigation, and it would be inappropriate for USACE to speculate on any potential outcome. At this point, it is unclear whether the decision in this case will affect the proposed operation. USACE is following the litigation closely, however, and regardless of the outcome, it will be reviewed and analyzed by USACE and the Department of Justice. Following that review, USACE will take the appropriate action.

F

F. Section 3.2 of the EIS includes the following statement: "The Mobile District continually reviews the WCM as needed to ensure that the best use is made of available water resources." In addition, the section refers to USACE, South Atlantic Division Regulation No. RBT-2 (Water Control Management in South Atlantic Division [2010]), which mandates that "at a minimum, Districts should review their water control manuals/plans every 5 years." These reviews would provide the basis for determining whether formal updates are needed and would include any formal or informal input received from agencies and stakeholders. The process for future WCM updates would include appropriate technical analysis, public involvement, and environmental compliance activities.

2141214-Public Meeting and Comments-1

8 structure proposed for monitoring actual  
9 outcomes and adapting operational guidance to  
10 changing or changed conditions when they differ  
11 from what was expected.

12 There are several models of successful  
13 basin-wide governance available to draw on --  
14 such as the Delaware Basin -- Delaware River  
15 Basin Compact, DRBC. Inclusion of such needed  
16 organizational structures would be more than  
17 just prudent. The U.S. Supreme Court has  
18 expressed a strong preference for such a  
19 compact in all interstate water allocation and  
20 management disputes.

21 And finally, my recommendation: The Corps  
22 and their contractor support, Tetra, T-E-T-R-A,  
23 are to be commended for multi-year effort and  
24 level of effort apparent in their work product.  
25 All the more reason to ensure that

11

G

1 opportunities for public involvement are  
2 adequate and meaningful.

3 One step would be for the Corps to attempt  
4 to resolve issues, such as those outlined  
5 above, by timely feedback to the communities  
6 affected.

7 I was signed at the bottom of this paper  
8 as David McLain. I'm an ACF stakeholder from  
9 Eastpoint, Florida, with an e-mail address of  
10 firstresponse@mediacombb.net, with a contact  
11 telephone number of (850)653-6454. Thank you.

Page 9

G. All comments received from the affected communities and other interested parties have been fully addressed in the final EIS in as timely a fashion as possible, including any adjustments to the proposed alternative and the EIS that occur as a result of public comment and additional follow-up interactions with the state and federal agencies.

12 2141214-Public Meeting and Comments-1  
(The comment by Mr. David McLain was concluded.)

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1 COMMENT 2 - LESLEY COX  
2 MS. COX: I want the Army Corps of  
3 engineers, as they update the ACF Water Control  
4 Manual, to consider the needs, the freshwater  
5 needs and the saltwater tolerances of the  
6 Apalachicola Bay, in any and all categories.  
7 (The comment by Ms. Lesley Cox was concluded.)

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A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

2141214-Public Meeting and Comments-1

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1 COMMENT 3 - CATHERINE KORFANTY

2 MS. KORFANTY: My name is Catherine, with  
3 a C, Korfanty.

4 Yes, I am very concerned that the current  
5 plan is comparing itself to existing conditions  
6 versus the last plan from the 1950s. That is  
7 deceptive.

A

8 I am also concerned about the amount of  
9 drawdown from the resources upriver. And I am  
10 concerned that this plan and your  
11 representatives do not feel that the  
12 Apalachicola Bay is part of their  
13 responsibility.

B

14 I am absolutely amazed that they have  
15 spent no time discussing any of these issues,  
16 prior to the formation of the plan, with the  
17 river-keepers and local people who are going to  
18 be affected by this plan.

C

19 That's it.

20 (The comment by Ms. Catherine Korfanty was

Page 11

- A. The purpose of the Master WCM update and EIS is to evaluate and compare alternative plans to update project operations in the ACF Basin to improve upon current operations (i.e., the NAA). The NAA reflects current reservoir operations as they have evolved over time in response to laws, regulations, policy, and new technical information. Basing the NAA for the ACF Basin on a pre-NEPA 1958 WCM or a predam condition to assess the effects of alternative WCM update plans would neither accurately reflect current baseline operations nor be consistent with “no action” as defined in the Council on Environmental Quality's memorandum of March 23, 1981, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations. The EIS considered direct, secondary, and cumulative impacts and indicates that there would be essentially no incremental effect on the Apalachicola River and Bay as a result of the PAA as compared to the NAA.
- B. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.
- C. Public involvement during the Master WCM update process has been rigorous and ongoing since 2008. Section 1.4 of the EIS provides a detailed summary of these efforts. For example, public scoping, including five public meetings across the basin, was initiated in 2008. Public scoping was reopened in 2009 and again in 2012 in response to federal court decisions that fundamentally affected the direction of the WCM update process. Input from the scoping process was considered in developing the water management alternatives. In addition, the Mobile District has conducted Hydrologic Engineering Center-Reservoir System Simulation (HEC-ResSim) modeling workshops for agencies and stakeholders, participated in other federal interagency meetings and stakeholder forums, and hosted Water Manager for a Day sessions for numerous agency and stakeholder representatives.

21 2141214-Public Meeting and Comments-1  
22 concluded.)  
23  
24  
25

14

1 COMMENT 4 - MARY DURRER  
2 MS. DURRER: Hi. I'm Mary Ann Durrer. I  
3 live at  
4 Florida, which is on the Bay.  
5 My husband and I moved here a little over  
6 15 years ago from Virginia. The flavor of this  
7 community has changed dramatically in those  
8 15 years.

9 The Bay used to be packed with oystermen  
10 tonging for the oysters, and they were the most  
11 scrumptious oysters that you've ever tasted.  
12 Now, you're lucky to see two to three boats out  
13 there tonging for oysters. Most of them have  
14 left.

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15 Oystering is a hard living, but the  
16 fishermen seem to love it.  
17 This area has been impacted by drought,  
18 storms, and oil spill. But the biggest impact  
19 is the reduced water flow coming down the  
20 river. This reduced water flow has made the  
21 Bay more salty, which has harmed the oysters,  
22 harmed the shrimp, harmed the fish.

23 The river water is the life flow to this  
24 whole region, and we need it to survive.

25 And the Corps of Engineers is saying that  
Page 12

B

A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

B. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.



1 the Bay is not really their focus. But the Bay  
2 is the ultimate end point for all of their  
3 actions. So how can they not consider what the  
4 end point is?

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5 (The comment by Ms. Durrer was concluded.)

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1 COMMENT 5 - RONNIE SEGREE

2 MR. SEGREE: My name is Ronnie Segree.

Response to ACF032 – Ronnie Segree

2141214-Public Meeting and Comments-1  
3 I'm a resident here in Eastpoint, Florida. My  
4 father was one of the five families that  
5 actually was one of the families that was here  
6 in Eastpoint back in 1917. My father was born  
7 right here in Eastpoint.

8 Anyway, he raised nine children on the  
9 Bay, and the water on the river is needed for  
10 this Bay to provide for the oysters and the  
11 fish, the shrimp, crabs, and everything.

12 When we used to get the water down from  
13 out of, I reckon, the Chattahoochee or wherever  
14 it comes from, the water would pick up the  
15 sediments off of the bottom and bring it down  
16 to the Apalachicola area, which dumped out into  
17 the Bay.

18 And since then, I reckon because they've  
19 dammed all the water over the top, all of the  
20 sediments settled to the bottom, and we don't  
21 get the nutrients that this Bay needs.

22 My granddaughter come home the other day  
23 and asked -- she calls me Paw-Paw. She said,  
24 I've got to do an interview about the water  
25 wars that are going on between Georgia,

17

1 Florida, and Alabama, and wanted to know what a  
2 solution would be.

3 And I told her that what we needed to do,  
4 we could pipe water out of other places, such  
5 as -- she kind of laughed, but Niagara Falls,  
6 it never runs dry. We could use a pipeline.  
7 We could use this same system that they've got  
Page 14

A

A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

B. Sections 5.1.2 and 5.1.3 of the draft EIS discussed consideration of several measures other than reallocation for Lake Lanier that could provide water supply to communities currently withdrawing from Lake Lanier, including desalinization and existing surface water sources other than Lake Lanier. These measures were eliminated from detailed evaluation for reasons documented in those sections of the draft EIS.

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for the big ocean liners, that turn saltwater into freshwater and pump it into these cities that need it, and then have a constant flow downriver.

People are always concerned about the global warming and the sea level rising, but this would be one way to eliminate the problem. Take the water out of the ocean, turn it into freshwater, and pump it into these cities that need it. Because if we don't, our Bay is going to die. It's dying slowly. It's just like somebody draining the blood out of you, and when it's gone, you're gone.

I think that would probably be about all I need to say.

(The comment by Ronnie Segree was concluded.)

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COMMENT 6 – PAT FLOYD

MR. FLOYD: We appreciate the Corps of Engineers coming down here to the Franklin County area and to listen to the information that has been provided here.

what we have questions about is really what the extent of the listening is, because it appears to be more of a venting opportunity that has historically been proven to be true, where there are people that vent and give their information, but do not really get listened to.

A

A. Every comment received from the public and government agencies has been addressed, and the best available technical information and analyses and provisions of pertinent laws and regulations have been considered, in determining the Proposed Action Alternative (PAA) for the Master WCM update. Responses to all public and agency comments have been included in the final EIS, including appropriate revisions made to the EIS as a result of public comments.

Response to ACF033 – Pat Floyd

2141214-Public Meeting and Comments-1  
I recalled, as I was talking with one of

the longtime residents in Franklin County that was here back in the '40s and '50s when the dams were set up, that the members -- that the Corps of Engineers came down and asked the people to listen. And at that time, the Corps of Engineers promised as a part of the creation and operation of this dam system that there would be three things provided, but none of them would detract from or eliminate water, from freshwater coming down to Apalachicola.

And those three Congressional promises were: One, flood control; two, hydropower; and three, navigation. And the navigation was

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promised to ensure a 9-foot beach, navigable all year-round, 100-foot wide, up and down the Apalachicola River. And we have not seen that for many years.

So those were the promises that were made to the people in the 1940s and '50s when this was done, but we don't -- it appears that the Corps of Engineers has abandoned their word and their promises on that, in favor of the progress and population, and also the progression of housing and businesses in the Atlanta area.

You know, what we found out here over the course of many years of the deprivation of water is that the oyster beds in the Bay cannot survive without that freshwater flow,

Page 16

B. The purpose of the Master WCM update and EIS is to evaluate and compare alternative plans to update project operations in the ACF Basin to improve upon current operations (i.e., the NAA). The NAA reflects current reservoir operations as they have evolved over time in response to laws, regulations, policy, and new technical information. Basing the NAA for the ACF Basin on a pre-NEPA 1958 WCM or a predam condition to assess the effects of alternative WCM update plans would neither accurately reflect current baseline operations nor be consistent with “no action” as defined in the Council on Environmental Quality's memorandum of March 23, 1981, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations. The EIS considered direct, secondary, and cumulative impacts and indicates that there would be essentially no incremental effect on the Apalachicola River and Bay as a result of the PAA as compared to the NAA.

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17 particularly in the drought times.  
 18 There's been such an impact that there  
 19 are -- you can currently go out into the Bay  
 20 we've done this recently, and see that there is  
 21 one oyster and five conchs gathered around it,  
 22 killing the oyster.  
 23 So what we've had is an increase in the  
 24 salinity. Even today, the salinity is about  
 25 twice as high as it's supposed to be for

20

1 comfortable progress and actually culturing of  
 2 oysters, but there doesn't seem to be such  
 3 interest in that as the -- the survival of the  
 4 Apalachicola Bay and the estuary, the economy  
 5 of this area is subrogated and subordinated to  
 6 the interest of progress and providing to the  
 7 people in the Atlanta area as much water as  
 8 they can get from the rivers. So that is  
 9 reversed. Here, in order to preserve that  
 10 interest, you have change what you're doing to  
 11 preserve the interest. Our interest is in  
 12 survival here now. And this is a survival  
 13 question of the Bay. You can't continue to put  
 14 progress above survival.

15 That's one of the things that we wanted to  
 16 mention, and it's something that we have people  
 17 that actually work for the Corps of Engineers  
 18 in the navigation boat that are actually  
 19 oystering down here at Eastpoint at this time  
 20 that have testified to and can document that

Page 17

C

C. The PAA is not expected to result in a change to conditions that currently exist for the commercial fishing industry (including oysters) in Apalachicola Bay compared to current reservoir operations (i.e., the NAA). Physical and ecological conditions that affect the extent and overall abundance of commercial species are not expected to change under the PAA. Section 6.6.5 addresses the effects of the various Master WCM update alternatives on the Apalachicola bay oyster industry.

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 21 there were no problems with the oyster  
 22 productivity before the time that the  
 23 navigational efforts were ceased, about 10 or  
 24 15 years ago and that since that time, it  
 25 continues to impact, a progressive geometric

21

1 impact on the oyster, to the point now that we  
 2 have oyster beds that were producing 60 bags a  
 3 day that are producing nine.

4 That's an economic impact, but it's a  
 5 reflection on the health of the Bay, that  
 6 there's a fight for survival here. / And the

7 people of Atlanta, we have a lot of them that  
 8 come here for business or enjoying the water  
 9 and fishing. And this particular resource is  
 10 going to be eliminated by their explosion up  
 11 there in Atlanta, in the Atlanta Metro area,  
 12 and they just have to find some other water to  
 13 be able to use because they're going to  
 14 outstrip the Apalachicola River in its entirety  
 15 if they continue, and then there still won't be  
 16 any Apalachicola Bay.

D

D. USACE has considered Georgia's 2013 request for water, and their subsequent revised 2015 request, in response to the June 28, 2011, opinion of the U.S. Court of Appeals for the 11th Judicial Circuit. This opinion set aside the United States Army's 2002 decision to deny Georgia's 2000 request and ordered a remand to USACE to reconsider whether it has the legal authority to operate the Buford project to accommodate Georgia's request, in light of the legal authority conferred by Congress in the River and Harbor Act of 1946: Public Law 84-841 (July 30, 1956) (1956 Act); and the Water Supply Act of 1958.

17 we would ask the Corps of Engineers to  
 18 relook at this because we can't have it below  
 19 that which is the five level than it is right  
 20 now, and it's got to be increased really to  
 21 seven, between five and seven, to be able to  
 22 possibly have some type of survival possibility  
 23 for Apalachicola Bay.

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E. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

24 So that's what it usually is. The bottom  
 25 line is, who's listening that's going to take  
 Page 18

1       it to heart and take some action on it, rather  
2       than just have people vent? So we're waiting  
3       to see what the Corps of Engineers does here.

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4       (The comment by Mr. Pat Floyd was concluded.)

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1       COMMENT 7 - EDWARD MICHAELS

2       MR. MICHAELS: I'm submitting a paper that



Response to ACF034a – Edward Michaels

A. The USACE projects in the ACF Basin are operated to fulfill specific federally authorized purposes in a balanced manner. USACE is not authorized to conduct ACF project operations specifically to sustain the biological health of Apalachicola Bay, as suggested in the comment. The effect of project operations on conditions in Apalachicola Bay under the various alternatives must be, and has been, considered in the EIS. Future sea level rise could have a profound effect on the hydrodynamic and ecological conditions in Apalachicola Bay, independent of how the ACF Basin projects are managed. The climate change analysis presented in the EIS (section 6.9) concluded that the extreme high and low climate change-affected values (both water quantity and water quality) would fall within the range of those that have been historically experienced in the ACF Basin.

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B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

Response to ACF035 – Susan Cerulean

A. The comment provided substantial technical information and references on several important coastal bird species that are present in the Apalachicola Bay area. Pertinent updated or additional background information has been incorporated into the final EIS. The EIS indicates that implementation of the PAA would not change hydrodynamic and ecological conditions (including water quality) in Apalachicola Bay compared to the NAA. Thus, the availability of forage fish for coastal birds in the bay area would not be expected to change under the PAA.

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8 endangered and threatened Brown Pelicans,  
9 Black Skimmers, and a host of other sea and  
10 shorebirds that nest, feed over winter in and  
11 around Apalachicola Bay.

12 If water continues to be taken from the  
13 river upstream, changes in water quality and  
14 quantity will and is adversely affecting the  
15 forage fish populations, and we will lose our  
16 outstanding birds.

17 According to your documentation, droughts  
18 will occur at twice the current level, due to  
19 the operations laid out in your plan. The  
20 duration of droughts will also increase.

21 whether you end your study area above  
22 Apalachicola or well into the Bay, the system  
23 is one whole entity. What you do upstream can  
24 kill our Bay.

25 (The comment by Ms. Susan Cerulean was concluded.)

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1 COMMENT 9 – JEFF BLAIR

2 MR. BLAIR: My name is Jeff Blair. I live  
3 in Tallahassee, Florida, and I've had one  
4 property on St. George Island, Florida since  
5 1966.

6 The Apalachicola watershed, especially the  
7 Apalachicola Bay, is a biologically rich and  
8 economically important habitat, that is one of  
9 the most productive estuary systems in the  
10 Northern Hemisphere.

11 The Apalachicola Bay supplies 90 percent

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B. There appears to be a misunderstanding regarding “drought” as compared to reservoir “drought operations.” Droughts are a function of hydrologic conditions across the basin, not how the USACE ACF Basin projects are managed. The NAA includes a drought contingency plan developed in the 1980s. That plan was included as part of the revised interim operating plan in consultation with the USFWS under section 7 of the Endangered Species Act. The PAA includes a more robust drought contingency plan than the NAA under which drought operations are triggered more often because the drought trigger has been revised to promote faster recovery of the reservoirs and less severe impacts throughout the basin. The analysis presented in the EIS does not indicate that droughts will occur at twice the current level under the PAA. Section 2.1.1.1.2 of the EIS discusses three drought periods before 1957 and five drought periods since construction of Jim Woodruff Lock and Dam. The streamflows associated with those droughts are included in the unimpaired flow data set used for HEC-ResSim modeling. The effects associated with drought operations are discussed in section 6.1.1.3 of the EIS. Drought operations would be triggered more frequently under the PAA compared to the NAA, but that fact does not mean that droughts would be occurring more frequently. Under the PAA, USACE would more proactively manage water resources in the reservoirs as drier conditions emerge in the basin. In the early stages of drought operations, the water management constraints on the projects would be subtle and the effects in the system barely noticeable. Operations would become progressively more constrained as drought conditions become more severe in order to conserve storage to enable the projects to continue to fulfill all authorized project purposes and needs in the basin until drought conditions improve and to promote faster recovery of the reservoirs.

C. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

Response to ACF036a – Jeff Blair

A. USACE is not authorized to operate the ACF Basin reservoir projects to provide releases specifically for the benefit of fish and wildlife resources or associated habitat conditions in Apalachicola Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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of the oysters in the State of Florida and

10 percent of the oysters for the entire U.S.

In addition to being economically important, oysters serve as valuable ecosystem engineers through modifying flow, filtering water, and enhancing diversity by providing three-dimensional habitats for hundreds of species.

The quantity and quality of freshwater that supply the system are critical to the social, economic, recreational, education of environmental health of the Tristate Region generally and to the state of Florida and the Apalachicola Bay specifically.

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In addition, water quality and quantity is equally important to rare, endemic, threatened, and endangered plant and animal species that reside within the Apalachicola River Basin. And downstream, as I previously referenced, the estuary is one of the most diverse and productive ecosystems in the world.

The estuary waters provide critical foraging and nursery habitat for diverse fish and invertebrate assemblages that are commercially and recreationally harvested.

It is clear there are serious concerns resulting from the impacts of reduced freshwater input in biologically rich and economically important habitats of the Apalachicola watershed.

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17 And I am urging the Army Corps of  
18 Engineers to realize that the reduced flow  
19 resulting from Georgia's increased diversion of  
20 water from the Apalachicola/Chattahoochee/Flint  
21 River Basin present a critical problem when  
22 coupled with drought-related water shortages.

23 In updating the water Control Manual for  
24 the ACF, it is critical that Florida receives  
25 its fair share of water sufficient to ensure

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1 the health and productivity of the entire  
2 watershed, especially the Apalachicola Bay.

3 The health, productivity, and  
4 sustainability of the Apalachicola River, the  
5 floodplain, the Bay, and the Gulf are critical  
6 to our economy and cultural heritage.

7 The Army Corps of Engineers must, and in  
8 fact is required, to give fair and equal  
9 consideration to Fish and wildlife Conservation  
10 in the Apalachicola ecosystem, just as for the  
11 other authorized purposes of the ACF River  
12 System.

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13 Thank you for your consideration.  
14 (The comment of Mr. Jeff Blair was concluded.)  
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B. The environmental effects of the Proposed Action Alternative (PAA) on Apalachicola River and Bay, compared to the No Action Alternative (NAA) (current reservoir operations) are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

C. The PAA includes fish and wildlife conservation operations throughout the basin (for example, the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam.) Additional information on the PAA can be found in Section 5 of the EIS. The EIS considered and disclosed the expected impacts that the PAA may have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River, and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, there would be no anticipated incremental effect on fish and wildlife resources in the bay.

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COMMENT 10 - SHANNON HARTSFIELD

MR. HARTSFIELD: what I've learned tonite is that there's still not going to be no consideration below Lake Lanier -- I'm sorry. Jim woodruff Dam -- below Lake Seminole.

So the Apalachicola River is still not going to be considered when the Corps does what the Corps does.

So the Apalachicola Bay is still going to be struggling for lack of freshwater. Not saying that -- saying that if they do not put the Apalachicola Bay into consideration with all of the water flow we're receiving, the Apalachicola Bay will not be here in the next five years.

We're having issues with low flows in the present. We're not in a drought year. So the very next drought year that we're in will devastate and destroy the Bay.

And without having those oysters to purify our Bay, we're not going to have a very good fishing, shrimping, and crabbing industry. And I don't think Franklin County is going to hold up as a tourist town.

I think that's pretty much all I've got to

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A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

1 say.

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2 I'm Shannon Hartsfield, and I represent  
3 SMART, which is Seafood Management Assistance  
4 Resource Recovery Team.  
5 (The comment of Mr. Shannon Hartsfield was  
6 concluded.)  
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1 COMMENT 11 - ROY WILCOX

2 MR. WILCOX: My name is Roy Wilcox. I

Page 25

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3 have a house outside of Atlanta, Georgia, where  
4 I live three-fourths of the year. And I have  
5 also a house on St. George Island right at the  
6 Bay, where I live the other fourth of the year.

7 So the impact that we are looking at on  
8 these changes are part of where I currently  
9 live and also where I live part of the year.

10 As an environmental educator for 30-plus  
11 years, and also teaching middle school science,  
12 I try to stress to the students the  
13 understanding that everyone lives -- someone  
14 lives downstream, and how we treat the water or  
15 impact the water affects them also, whether we  
16 use too much or pollute it or don't care for  
17 it.

18 But until I moved into the St. George  
19 Island area, I didn't have a good understanding  
20 of the impact that it had for the Bay and those  
21 who oyster and those who fish and how the lack  
22 of freshwater can impact them.

23 So I think it would be a good direction to  
24 improve the education of middle school students  
25 and high school students of understanding both

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A. The primary role of educating the public on water use and related matters such as water conservation in the basin lies with the states and pertinent stakeholders, supported by federal agencies like the U.S. Geological Survey and U.S. Environmental Protection Agency (EPA). USACE, Mobile District, however, has conducted HEC-ResSim modeling workshops for agencies and stakeholders, participated in other federal interagency meetings and stakeholder forums, and hosted Water Manager for a Day sessions for agency and stakeholder representatives. Additionally, to provide useful background information and educate readers, USACE has compiled a detailed summary of historical and current water use across the ACF Basin as well as an overview of regional and state water resources planning and management activities affecting the ACF Basin in section 2.1.1.2 and appendix G of the EIS.

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1 ends of the spectrum of those who want the  
2 water to water their yard and to drink and go  
3 to swimming pools, but also those at the far  
4 end who need to water their livestock and those  
5 who are harvesting shrimp and scallops and  
6 oysters out of the Bay. So to improve an  
7 educational program overall might be a good  
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8 direction to go for everybody to understand.

9 (The comment by Roy Wilcox was concluded.)

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1 COMMENT 12 - WILLIAM OMOHUNDRO

2 MR. OMOHUNDRO: I want to encourage the

3 Corps of Engineers in preparation of their

4 Environmental Impact Statement to consider the

5 health of Apalachicola Bay as an element in

6 their Environmental Impact Statement. In other

7 words, it affects the environment of the Bay,

8 and that should be a factor in determining

9 their plans.

10 And I want to protect the Bay because it

11 is a hugely important natural asset. Plus,

Page 27

A

A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

B

B. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.

2141214-Public Meeting and Comments-1  
it's been part of our family for 40 years, and  
it's a wonderful natural asset that we need to  
struggle to protect as best we can.  
It's important to the industry, the  
economy of this area. It holds together the  
community. And should the Bay become  
unhealthy, where it will not support our  
fishery, then it's going to affect negatively  
all of those factors.  
So in closing, I just want to encourage  
the Corps to consider the health of the Bay in  
their Environmental Impact Statement and their  
actions.

(The comment of Mr. William Omohundro was

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concluded.)

2141214-Public Meeting and Comments-1

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1 COMMENT 13 - ELISSA A. OMOHUNDRO  
2 MS. OMOHUNDRO: I am a citizen of Wyoming,  
3 but have vacationed down here since I was a  
4 child. I feel like this area is a lot like the  
5 west that has been protected and preserved, and  
6 I want to see Apalachicola Bay protected at the  
7 same level. I think the beaches and the area  
8 is such a blessing for all of the people of  
9 this country.

A

10 And I would like to encourage the Corps of  
11 Engineers, I think they're already doing this,  
12 but to work hand-in-hand with Fish and Wildlife  
13 to protect the Bay. And I want to thank the  
14 Corps for its presentation. I've learned a  
15 lot. And I feel like I'm more aware of what  
16 they're doing, and I appreciate that.

B

17 (Comment of Ms. Elissa A. Omohundro was concluded.)  
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- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. USACE has worked extensively with the USFWS staff to fully comply with the requirements of the Fish and Wildlife Coordination Act (FWCA) and the Endangered Species Act (ESA) for water management activities in the ACF Basin for many years. Relative to ongoing work to update the Master WCM, the USFWS and District staff have engaged in formal consultation under section 7 of the ESA and have cooperated to develop several USFWS Planning Aid Letters and draft reports prepared in accordance with the FWCA. These consultation and coordination activities are summarized in section 6.5 of the EIS, and all pertinent documents are compiled in appendix J of the EIS.

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COMMENT 14 - ELIZABETH WRIGHT

MS. WRIGHT: My name is Elizabeth Wright.

I live in Apalachicola, Florida. I'm a wildlife biologist by training. And I moved to this area basically because I fell in love with Apalachicola Bay the first time I ever saw it.

I used to live in Washington, D.C. for 20 years, and I did a lot of environmental work regarding the Chesapeake Bay, and I've always thought that our Bay here is the Chesapeake Bay before we screwed it up.

So I'm extremely disturbed about what I've read in the past few days about the water Control Manual update and the EIS.

I feel that the Army Corps is giving short shrift to the authorized project purpose of Fish and Wildlife Conservation, which should be -- it's supposed to be coequal with the other project purposes, and I don't think the Corps is treating it as such.

I spent a lot of time over the past few days looking through the 1,200 pages of documents in Appendix J, which are the consultation documents, principally with U.S. Fish and Wildlife Service, but also the

Page 30

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A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

B

1 state wildlife agencies, including the Florida  
2 Fish and wildlife Conservation Commission.

3 If you read those documents, you get a  
4 very different view of the project, and the  
5 proposed provisions and what's in the EIS, the  
6 Draft EIS.

7 It seems like the Corps has not seriously  
8 considered the views of the U.S. Fish and  
9 wildlife Service or of our State wildlife  
10 Agency.

11 It seems as though the Corps may be in  
12 violation of the Fish and wildlife Consultation  
13 Act by making it difficult, particularly for  
14 our state agency, to participate and obtain  
15 requested documents, data sets, and so forth.

16 It also appears to me that this Draft EIS,  
17 the alternatives being considered are all being  
18 governed by the court decision, which I think  
19 is potentially not legal underneath that.

20 It also disturbs me that the alternative  
21 that U.S. Fish and wildlife Service presented  
22 does not seem to have been seriously  
23 considered. Perhaps I was not in the right  
24 place in the documents, but I could not find  
25 where that was considered seriously, nor has

1 the water management plan devised by the  
2 Apalachicola/Chattahoochee/Flint stakeholders

B. USACE gave consideration to the USFWS recommendations in the draft Fish and Wildlife Coordination Act report dated July 31, 2015, which was also reviewed and endorsed by the Florida Fish and Wildlife Conservation Commission. USACE considered the proposed water management alternative provided by the USFWS. Although the USFWS alternative was not ultimately selected as the PAA, components of the USFWS alternative were incorporated in the PAA. Some of the USFWS recommendations were not within the authority of USACE to implement as part of the Master WCM update process. USACE also developed a detailed response to the draft USFWS recommendations in August 2015, and the USACE response was included in appendix J of the draft EIS.

Response to ACF041 – Elizabeth Wright

2141214-Public Meeting and Comments-1  
3 group. It is possible that the ACFS document  
4 was released too late to be considered, but I  
5 would ask that it be considered in the  
6 remainder of this process, because it's the  
7 first time that people from all over the  
8 watershed with all different interests have  
9 come together and reached accord on a way of  
10 managing the system that would suit everyone  
11 and all of the interests and fish and wildlife  
12 and so forth.

C

C. The ACF Stakeholder's sustainable water management plan (SWMP) was received by USACE in early June 2015. USACE received the report and its recommendations too late to be fully evaluated and considered in the draft EIS. Further, the SWMP, as initially submitted to USACE, did not include the necessary supporting technical documentation and underlying assumptions to fully evaluate the recommended management measures. The SWMP recommendations were considered to the extent possible in the final EIS.

13 I think that's all.

14 (Ms. Wright continued comment.)

15 MS. WRIGHT: I have focused mostly on  
16 process in my comments here, but I also want to  
17 make some more substantive points.

18 In addition to the fact that the lack of  
19 due consideration of Fish and wildlife  
20 Conservation will destroy our local economy  
21 here because of likely increased salinity in  
22 our Bay and its effects on oystering, fishing,  
23 shrimping and so forth, it will also  
24 potentially lead to the destruction of a  
25 nationally important ecological resource and

D

D. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.

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1 one that is even internationally important.

2 Apalachicola Bay is probably the most  
3 pristine estuary anywhere. And in addition to  
4 economic benefits, it's extremely productive  
5 because of the inflows from upstream,  
6 particularly the floodplain overflow bringing  
7 nutrients down. And changes in salinity in

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Response to ACF041 – Elizabeth Wright

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8 drought years, of course, are detrimental to  
9 oysters, to the juvenile gulf sturgeon, but to  
10 lots of other juvenile fishes.

11 I have read -- and I'm not sure what the  
12 exact numbers are. But I have read that  
13 somewhere between 50 and 80 percent of the  
14 marine fish in the whole Gulf of Mexico spend  
15 their juvenile stage here in Apalachicola Bay.  
16 That's not something that can be toyed with, in  
17 my opinion. And I really think more  
18 consideration needs to be given to assuring us  
19 decent freshwater flows into our Bays -- into  
20 our Bay.

E

21 (The comment of Ms. Walker was concluded.)  
22  
23  
24  
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E. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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1 COMMENT 15 - SHERRIE WALKER

2 MS. WALKER: Basically, what I wanted to  
3 say is, we feel that the freshwater is not  
4 enough coming down from the dams. We need to  
5 have more freshwater because the conchs and the  
6 hermit crabs and the regular crabs, there's  
7 just too much salinity. They're eating oysters  
8 faster than we can catch them. So we're  
9 tonging up -- he's tonging up and I'm culling a  
10 lot more dead oysters than what there used to  
11 be in the Bay.

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Response to ACF042 – Sherrie Walker

A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

12 And there's now -- I've been noticing a  
13 new type of fuzzy-type worm that's on the  
14 oysters and it's just -- I don't know if it's a  
15 new creature or if it's -- or what it is. It's  
16 just new to me. I haven't seen it. I've been  
17 oystering since I was 19 years old, and I'm 46.

18 There's just something that needs to be  
19 done to where we can get more freshwater down  
20 here.

21 We understand about the drought. We're  
22 not saying not to keep -- reserve enough water  
23 for whenever there is a drought. We're just  
24 saying we need more water to come down to help  
25 us out and keep our livelihoods and our Bay

40

1 healthy.

2 That's all I've got to say.

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3 (The comment of Ms. Sherrie Walker was concluded.)

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6 (ALL COMMENTS WERE CONCLUDED AT THIS TIME.)

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REPORTER'S CERTIFICATE

STATE OF FLORIDA )  
COUNTY OF BAY )

I, LISA D. WILKERSON, Court Reporter, do  
hereby certify that I was authorized to and did  
report the foregoing proceedings, and that the  
transcript, pages 1 through 41, is a true and  
correct record of the proceedings to the best of my  
ability.

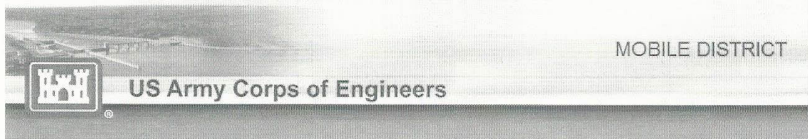
Done and dated this 3rd day of December,  
2015, at Bay County, Florida.

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LISA D. WILKERSON, COURT REPORTER

B

Response to ACF030b – Catherine Korfanty



### Submit Comments and Stay Informed

Thank you for submitting your comments on the US Army Corps of Engineers Apalachicola-Chattahoochee-Flint Master Water Control Manual (WCM) Draft Environmental Impact Statement (EIS) and Water Supply Storage Assessment (WSSA).

You can receive notice the final EIS is available through the mailing list.

If you have not yet joined the mailing list please indicate that you would like to be added below.

If you would like more information on the ACF River Basin or the EIS process please check the main ACF Master Water Control Manual Update page:

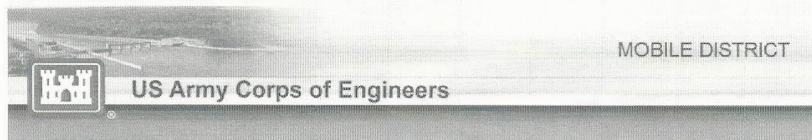
<http://www.sam.usace.army.mil/Missions/PlanningEnvironmental/ACFMasterWaterControlManualUpdate>.

First name	Catherine
Last name	Korfanty
Organization name	Riverkeepers
Address	
City	
County	
State	
ZIP Code	
Phone	
E-mail	
Add to mailing list	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail

Comments
<b>Resource Area to Which My Comment Is Related</b> <i>(Choose all that apply)</i> <input type="checkbox"/> Biological Resources <input type="checkbox"/> Cultural Resources <input type="checkbox"/> Data, Studies, & Analytical Tools <input type="checkbox"/> Drought Operations <input type="checkbox"/> Flood Risk Management <input type="checkbox"/> Hydropower <input type="checkbox"/> National Environmental Policy Act <input type="checkbox"/> Navigation <input type="checkbox"/> Socioeconomics & Recreation <input checked="" type="checkbox"/> Water Management Recommendations <input checked="" type="checkbox"/> Water Quality <input type="checkbox"/> Water Supply <input checked="" type="checkbox"/> Other:
<p>The fact that the plan does not address issues with the bay</p>

A

- A. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.



### Submit Comments and Stay Informed

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<http://www.sam.usace.army.mil/Missions/PlanningEnvironmental/ACFMasterWaterControlManualUpdate>.

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Last name	Durrer
Organization name	
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Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail

## Response to ACF031b – Mary Durrer

Comments	Resource Area to Which My Comment Is Related
<p>(Choose all that apply)</p> <p><input checked="" type="checkbox"/> Biological Resources</p> <p><input checked="" type="checkbox"/> Cultural Resources</p> <p><input type="checkbox"/> Data, Studies, &amp; Analytical Tools</p> <p><input checked="" type="checkbox"/> Drought Operations</p> <p><input checked="" type="checkbox"/> Flood Risk Management</p> <p><input type="checkbox"/> Hydropower</p> <p><input type="checkbox"/> National Environmental Policy Act</p> <p><input type="checkbox"/> Navigation</p> <p><input checked="" type="checkbox"/> Socioeconomics &amp; Recreation</p> <p><input checked="" type="checkbox"/> Water Management Recommendations</p> <p><input checked="" type="checkbox"/> Water Quality</p> <p><input type="checkbox"/> Water Supply</p> <p><input type="checkbox"/> Other:</p>	<p>Apalachicola Bay</p> <p>The Bay used to be packed with oystermen tending oysters. Now you may 2 or 3.</p> <p>We have been impacted by drought, storms, an oil spill - the biggest impact is from reduced water flow coming down the river. This has harmed oysters, striped fish by making the Bay too salty.</p>
<p><input checked="" type="checkbox"/> Water Management Recommendations</p> <p><input checked="" type="checkbox"/> Water Quality</p> <p><input type="checkbox"/> Water Supply</p> <p><input type="checkbox"/> Other:</p>	<p>River water is the life blood of this area. We need it to survive. The Corps says the Bay is not their responsibility but the Bay is the end point for all of the Corps' actions.</p>

A

B

A. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.

B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.



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If you have not yet joined the mailing list please indicate that you would like to be added below.

<http://www.sam.usace.army.mil/Missions/PlanningEnvironmental/ACFMasterWaterControlManualUpdate>

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Last name	MICHAELS
Organization name	CAPT. EDWARD MICHAELS
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State	
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E-mail	
Add to mailing list	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Preferred delivery method	<input type="checkbox"/> U.S. Mail <input checked="" type="checkbox"/> E-mail

Comments
<p><b>Resource Area to Which My Comment Is Related</b></p> <p><i>(Choose all that apply)</i></p> <p><input type="checkbox"/> Biological Resources</p> <p><input type="checkbox"/> Cultural Resources</p> <p><input checked="" type="checkbox"/> Data, Studies, &amp; Analytical Tools</p> <p><input type="checkbox"/> Drought Operations</p> <p><input type="checkbox"/> Flood Risk Management</p> <p><input type="checkbox"/> Hydropower</p> <p><input type="checkbox"/> National Environmental Policy Act</p> <p><input type="checkbox"/> Navigation</p> <p><input checked="" type="checkbox"/> Socioeconomics &amp; Recreation</p> <p><input checked="" type="checkbox"/> Water Management Recommendations</p> <p><input type="checkbox"/> Water Quality</p> <p><input checked="" type="checkbox"/> Water Supply</p> <p><input type="checkbox"/> Other:</p>

Edward Michaels  
111 4th St.  
Apalachicola, FL 32320

Department of the Army  
U.S. Army Corps of Engineers  
Washington, DC 20314-1000

EC 1165-2-211

CECW-CE

Circular  
No. 1165-2-211

1 July 2009

EXPIRES 1 JULY 2011  
WATER RESOURCE POLICIES AND AUTHORITIES  
INCORPORATING SEA-LEVEL CHANGE CONSIDERATIONS  
IN CIVIL WORKS PROGRAMS

A

1. Purpose. This circular provides United States Army Corps of Engineers (USACE) guidance for incorporating the direct and indirect physical effects of projected future sea-level change in managing, planning, engineering, designing, constructing, operating, and maintaining USACE projects and systems of projects. Recent climate research by the Intergovernmental Panel on Climate Change (IPCC) predicts continued or accelerated global warming for the 21st Century and possibly beyond, which will cause a continued or accelerated rise in global mean sea-level. Impacts to coastal and estuarine zones caused by sea-level change must be considered in all phases of Civil Works programs.

2. Applicability. This Circular applies to all USACE elements having Civil Works responsibilities and is applicable to all USACE Civil Works activities. This guidance is effective immediately, and supersedes all previous guidance on this subject. Districts and Divisions shall inform CECW of any problems with implementing this guidance.

3. Distribution Statement. This publication is approved for public release; distribution is unlimited.

4. References. Required and related references are at Appendix A. A glossary is included at the end of this document.

5. Geographic Extent of Applicability.

a. USACE water resources management projects are planned, designed, constructed and operated locally or regionally. For this reason, it is important to distinguish between global mean sea level (GMSL) and local (or "relative") mean sea level (MSL). At any location, changes in local MSL reflect the integrated effects of GMSL change plus changes of regional geologic, oceanographic, or atmospheric origin as described in Appendix B and the Glossary.

b. Potential relative sea-level change must be considered in every USACE coastal activity as far inland as the extent of estimated tidal influence. Fluvial studies (such as flood studies) that include backwater profiling should also include potential relative sea level change in the starting

#### Response to ACF034b – Edward Michaels

- A. The USACE projects in the ACF Basin are operated to fulfill specific federally authorized purposes in a balanced manner. USACE is not authorized to conduct ACF project operations specifically to sustain the biological health of Apalachicola Bay, as suggested in the comment. The effect of project operations on conditions in Apalachicola Bay under the various alternatives must be, and has been, considered in the EIS. Future sea level rise could have a profound effect on the hydrodynamic and ecological conditions in Apalachicola Bay, independent of how the ACF Basin projects are managed. The climate change analysis presented in the EIS (section 6.9) concluded that the extreme high and low climate change-affected values (both water quantity and water quality) would fall within the range of those that have been historically experienced in the ACF Basin.



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1 Jul 09

sea-level change is considered the historically recorded changes for the study site. Areas already experiencing relative sea-level change or where changes are predicted should analyze this as part of the study.

6. Incorporating Future Sea-Level Change Projections into Planning, Engineering Design, Construction, and Operating Projects.

a. Planning, engineering, and designing for sea level change must consider how sensitive and adaptable 1) natural and managed ecosystems and 2) human systems are to climate change and other related global changes. To this end, consider the following two documents:

(1) The Climate Change Science Program (CCSP) Synthesis and Assessment Product 4.1 (SAP 4.1) *Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region* details both how sea-level change affects coastal environments and what needs to be addressed to protect the environment and sustain economic growth. SAP 4.1 represents the most current knowledge on implications of rising sea levels and possible adaptive responses.

(2) The National Research Council's 1987 report *Responding to Changes in Sea Level: Engineering Implications* recommends a multiple scenario approach to deal with key uncertainties for which no reliable or credible probabilities can be obtained. In the context of USACE planning, multiple scenarios address uncertainty and help us develop better risk-informed alternatives.

b. Planning studies and engineering designs should consider alternatives that are developed and assessed for the entire range of possible future rates of sea-level change. These alternatives will include structural and nonstructural solutions, or a combination of both. Evaluate alternatives using "low," "intermediate," and "high" rates of future sea-level change for both "with" and "without" project conditions. Use the historic rate of sea-level change as the "low" rate. Base "intermediate" and "high" rates on the following:

(1) Estimate the "intermediate" rate of local mean sea-level change using the modified NRC Curve I and equations 2 and 3 in Appendix B (see Figures B-9 and B-11). Consider both the most recent IPCC projections and modified NRC projections and add those to the local rate of vertical land movement.

(2) Estimate the "high" rate of local sea-level change using the modified NRC Curve III and equations 2 and 3 in Appendix B (see Figures B-9 and B-11). Consider both the most recent IPCC projections and modified NRC projections and add those to the local rate of vertical land movement. This "high" rate exceeds the upper bounds of IPCC estimates from both 2001 and 2007 to accommodate for the potential rapid loss of ice from Antarctica and Greenland.

c. Determine how sensitive alternative plans and designs are to these rates of future local

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1 Jul 09

and maintenance measures should be implemented to minimize adverse consequences while maximizing beneficial effects. Consider sensitivity relative to human health and safety, economic costs and benefits, environmental impacts, and other social effects. Address risks for each alternative and each potential future rate of sea-level change ("low," "intermediate," and "high"). For those alternatives sensitive to sea-level change, evaluate the potential timing and cost consequences during the plan formulation process.

FOR THE COMMANDER:



4 Appendices:

APPENDIX A: References

APPENDIX B: Technical Supporting Material

APPENDIX C: Flowchart to Account for  
Changes in Mean Sea Level  
Glossary

ALEX C. DORNSTAUDER  
Colonel, Corps of Engineers  
Executive Director of Civil Works



EC 1165-2-211  
1 Jul 09

EC 1165-2-211  
1 Jul 09

## APPENDIX A

### References

#### A-1. Required References.

ER 1105-2-100

Planning Guidance Notebook (22 APR 2000). <http://140.194.76.129/publications/eng-regs/er1105-2-100/toc.htm>

EC 1110-2-6065

Comprehensive Evaluation of Project Datum: Guidance for a Comprehensive Evaluation of Vertical Datums on Flood Control, Shore Protection, Hurricane Protection, and Navigation Projects. <http://140.194.76.129/publications/eng-circulars/ec1110-2-6065/toc.htm>

Environmental Protection Agency 2009

Climate Change Science Program (CCSP) (2009) Synthesis and Assessment Product 4.1: Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region. A report by the U.S. Climate Change Program and the Subcommittee on Global Change Research. [J. G. Titus (Coordinating Lead Author), E. K. Anderson, D. Cahoon, S. K. Gill, R. E. Thieler, J. S. Williams (Lead Authors)], U.S. Environmental Protection Agency, Washington, D.C. (<http://www.climatechange.gov/Library/sap/sap4-1/final-report/default.htm>)

National Research Council 1987

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## APPENDIX B

### Technical Supporting Material

#### B-1. Background on Sea-Level Change.

a. In the preparation of this document USACE has relied entirely on climate change science performed and published by agencies and entities external to USACE. The conduct of science as to the causes, predicted scenarios, and consequences of climate change is not within the USACE mission. The USACE is a user of the currently accepted community consensus on the state of climate science knowledge and applicable USACE policies will be periodically reviewed and revised as the accepted consensus changes.

b. Global mean sea level (GMSL) over the past several million years has varied principally in response to global climate change (NRC 1987, IPCC 2007a). For example, at the peak of the most recent glacial period about 20,000 years ago, global MSL is inferred to have been on the order of 100-120 meters lower than at present (NRC 1987, IPCC 2007a). As global climate warmed and the glaciers retreated, water stored as continental ice was released, adding to the mass of water in the oceans and causing a corresponding rise in global MSL.

c. Geologic evidence suggests global sea level has fallen and risen with minimums and maximums occurring during cold glacial and inter-glacial warm periods respectively. During the last inter-glacial period, about 125,000 years ago, sea level was 4m to 6m higher than at present. The earth entered the present inter-glacial warm period following the peak of the last Ice Age about 12,000 years ago (CCSP 2009). After a rapid initial rise, GMSL is interpreted as having approximately stabilized within a meter or so of its present value over the last several thousand years (NRC 1987, IPCC 2007a). IPCC (2007a) concludes that global mean sea level rose at an average rate of about  $1.7 \pm 0.5$  mm/year during the twentieth century.

d. Recent climate research has documented global warming during the 20th Century, and has predicted either continued or accelerated global warming for the 21st Century and possibly beyond (IPCC 2007a). One impact of continued or accelerated climate warming is thus continued or accelerated rise of GMSL.

e. Sea-level change can cause a number of impacts in coastal and estuarine zones, including changes in shoreline erosion, inundation or exposure of low-lying coastal areas, changes in storm and flood damages, shifts in extent and distribution of wetlands and other coastal habitats, changes to groundwater levels, and alterations to salinity intrusion into estuaries and groundwater systems (e.g., CCSP 2009).

f. Geologic factors can drive local sea-level change. Vertical land movement can occur

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crustal rebound in formerly glaciated areas, and withdrawal of subsurface fluids. Networks of long-term Continuously Operating Reference Stations (CORS) are being monitored by NOAB-NGS and when co-located with tide stations will begin to provide direct estimates of vertical land uplift or subsidence.

g. Atmospheric factors can affect local or regional water levels. Decadal-scale phenomena include El Niño-Southern Oscillation (ENSO) in the Pacific and North Atlantic Oscillation (NAO) in the Atlantic, among others (see IPCC 2007a for a more complete discussion). Climate change may also alter the frequency and severity of tropical storms which could secondarily influence sea level. This is currently the subject of scientific research. Although the coupled effects of decadal and seasonal water level variations and episodic storm events are important to consider in project planning and design, the incorporation of the influence of tropical storm on the application of sea level trends is outside the scope of this document.

#### B-2. Determination of Historic Trends in Local MSL.

a. *The planning and design of USACE water resource projects in and adjacent to the coastal zone must consider the potential for future accelerated rise in GMSL to affect the local MSL trend.* At the same time, USACE project planners and engineers must be aware of the historic trend in local MSL, because it provides a useful minimum baseline for projecting future change in local MSL. Awareness of the historic trend of local MSL also enables an assessment of the impacts that sea-level change may have had on regional coastal resources and problems in the past.

b. Historic trends in local MSL are best determined from tide gauge records. The Center for Operational Oceanographic Products and Services (CO-OPS), of the National Oceanographic and Atmospheric Administration (NOAA), provides historic information and local MSL trends for tidal stations operated by NOAA/NOS in the US (see <http://www.co-ops.nos.noaa.gov/index.shtml>). Most U.S. tide stations experienced a rise in local MSL during the 20th Century. Note the dominance of green and yellow symbols along much of the Atlantic and Pacific coasts of the continental US (Figure B-1). These stations exhibit local MSL trends between 0 and +2 feet per century. The highest rates of local MSL rise in the US have occurred along the Gulf Coast (red symbols), whereas most stations in Alaska exhibit a falling trend of local MSL. Discrete shifts in sea level data or changes in relative sea level trends due to earthquakes are monitored by NOAA at their tide stations, and trends are recomputed from data after a known significant earthquake event (such as the 1964 Alaska earthquake). Trends are not computed from pre- and post event data. Post-event data analyses and surveys from the tide gauges to local bench marks and geodetic bench marks are used to estimate vertical movement. Data from nearby CORS are also now being used to estimate local vertical land motion to help monitor magnitude of the effect of earthquake events on sea level data.

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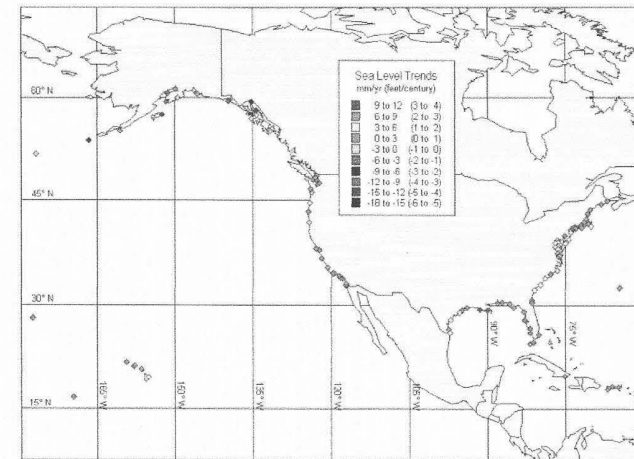


Figure B-1. Mean Sea Level Trends for U.S. Tide Stations (Oct 2008) (see <http://tidesandcurrents.noaa.gov/sltrends/slrmap.html> for updated information).

c. It is important to consider the length of tide station record required to obtain a robust estimate of the historic relative mean sea-level change. The length of the record is important because interannual and decadal variations in sea level are sufficiently large that misleading or erroneous sea level trends can be derived from periods of record that are too short.

d. The Manual on Sea Level Measurement and Interpretation (Intergovernmental Oceanographic Commission 1985) suggests that a tidal record should be of at least of two-tidal epoch duration (about 40 years) before being used to estimate a local relative mean sea level trend. Figure B-2 (from Zervas 2001) shows the relationship between period of record and the standard error of the trend for selected US tide stations. Note the significant decrease in standard error approximately at the 40- or 50-year period of record. Record lengths shorter than 40-years in duration could have significant uncertainty compared to their potential numerical trend values of a few millimeters per year.

e. Figure B-2 indicates that standard error can be can be large for tide stations with shorter records compared to those with longer records. As a practical approximation, a tide station should have a minimum of 40 years of data to justify using the station trend to extrapolate into the future and use as a minimum baseline for projected future change in local MSL. For project planning and design, the actual standard error of the estimate should be calculated for each tide gauge

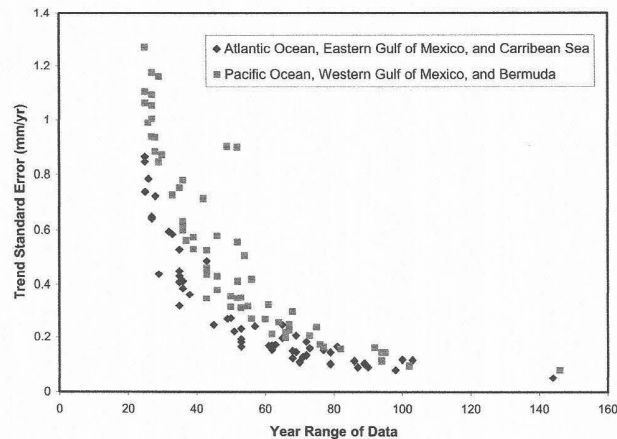
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Figure B-2. Standard Error of Linear Trend of Sea-level rise vs. Period of Record, U.S. Tide Stations.

f. Using trends in relative mean sea level from records shorter than 40 years is not advisable. In addition to interpretations by the International Oceanographic Commission and NOAA (Figure B-2), Pugh (1987) demonstrates that 10-year records at some stations show trends of opposite sign depending upon the interval selected. If estimates based on shorter terms are the only option, then the local trends must be viewed in a regional context, considering trends from simultaneous time periods from nearby stations to ensure regional correlation and to minimize anomalous estimates. The nearby stations should have long enough records (greater than 40 years) to determine reasonable trends, which can then be compared to the shorter, local sea-level records (see paragraph B-2(h)(2)). Experts at NOAA/NOS should be able to assist in cases of short periods of record or where records are otherwise ambiguous.

g. The Permanent Service for Mean Sea Level (PSMSL), which is a component of the UK Natural Environment Research Council's Proudman Oceanographic Laboratory, has been collecting, publishing, analyzing, and interpreting sea-level data from the global network of tide stations since 1933. Global sea level data can be obtained from PSMSL via their web site (<http://www.pol.ac.uk/psmsl/>). PSMSL should be considered as a source of information for non-US stations not contained in the NOAA report. Please note that the periods of record of PSMSL gauges vary; some gauges have shorter periods of record than are recommended for relative sea-level change trend analysis.

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h. The historic rate of relative sea-level change at relevant local tide stations shall be used as the low rate for analysis. The current, historically-based rate of change shall be estimated from local tide station records if oceanographic and geologic conditions at the tide station are determined to be similar to and consistent with those at the project site (Appendix C). For many locations along the U.S. Atlantic and Gulf of Mexico coastlines, there are probably adequate tide station data from perspectives of both spatial density and record duration to permit extrapolating with an adequate degree of confidence. Recognized exceptions are the coastlines between Mobile, Alabama and Grand Isle, Louisiana, and in Pamlico/Albemarle Sounds, North Carolina, which contain no acceptable long-term tide-gauge records. Louisiana is also subject to extreme rates of subsidence. In the case where there is a tidal station that is close to a project but has a short historic data range, and another tidal station that is farther away but has a longer historic data range, a tidal hydrodynamics expert should be consulted.

(1) Figures B-3 through B-6 show the magnitude and confidence limits (based on standard error of the estimate) of trends for Atlantic coast, Gulf of Mexico, and tropical NOS tide stations (from Zervas, personal communication, see updated information online at <http://tidesandcurrents.noaa.gov/sltrends/slrmap.html>). A pair of stations useful for illustrating the effect of record length on confidence limits is Galveston Pier 21 and Galveston Pleasure Pier (Figure B-6). These stations are located within approximately one mile of each other, with Pleasure Pier on the ocean side and Pier 21 on the navigation waterway side of Galveston Island. The Pier 21 station was established in 1908 and Pleasure Pier station in 1957, thus Pier 21 has approximately 101 years of record and Pleasure Pier approximately 51 years. The confidence limits on Pier 21 are significantly narrower than for Pleasure Pier.

(2) Figures B-7 and B-8 show sea level trends and confidence limits for U.S. Pacific coast stations. Because of the scatter of trends and confidence limits, estimating historical sea-level change for many sites along the U.S. Pacific coast may be problematic. Confidence limits are not as uniform as for the Atlantic and tropical stations. Estimating and extrapolating trends based upon available data will require engineering judgment on a case-by-case basis, and to be robust, should take advantage of interdisciplinary and interagency subject matter expertise. It may be possible depending upon station location and proximity to nearby stations with longer records, to use the longer record trend as a proxy providing the two records are well correlated for the concurrent period of record.

i. Regional sea-level change rates should be evaluated as well as rates of local sea-level change and global sea-level change. Regional sea-level change rates are expected to be close to global sea-level change rates, but differences may be found in large, semi-enclosed water bodies. Areas which could experience regional rates different than global rates include the northern Gulf of Mexico, the Gulf of Maine, and the Gulf of Alaska. Large embayments such as Chesapeake Bay may also experience rates that are slightly different than global rates due to regional effects.



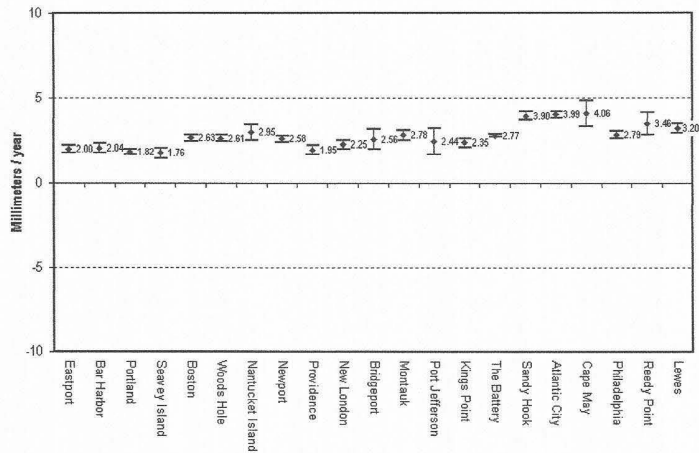
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Figure B-3. Magnitude and confidence limits of trends for northern Atlantic coast NOS tide stations. (NOS 2009, <http://tidesandcurrents.noaa.gov/sltrends/index.shtml>).

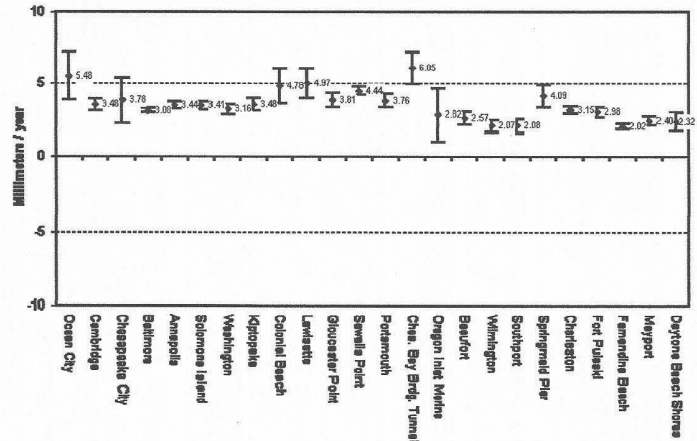


Figure B-4. Magnitude and confidence limits of trends for Southern Atlantic coast NOS tide stations. (NOS 2009, <http://tidesandcurrents.noaa.gov/sltrends/index.shtml>).

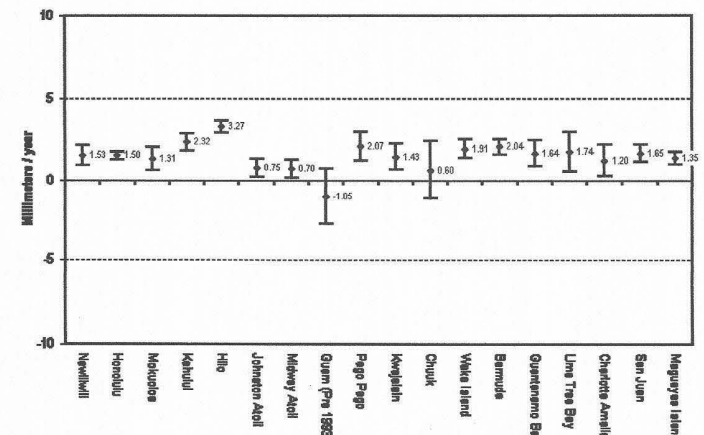
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Figure B-5. Magnitude and confidence limits of trends for ocean island NOS tide stations. (NOS 2009, <http://tidesandcurrents.noaa.gov/sltrends/index.shtml>).

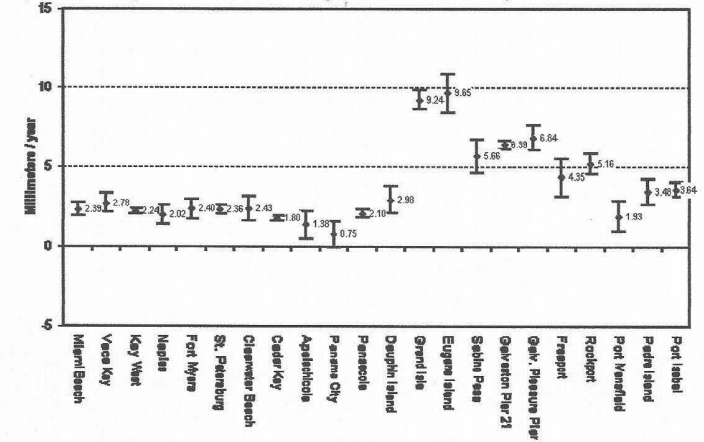


Figure B-6. Magnitude and confidence limits of trends for Florida Keys and Gulf of Mexico NOS tide stations. (NOS 2009, <http://tidesandcurrents.noaa.gov/sltrends/index.shtml>).

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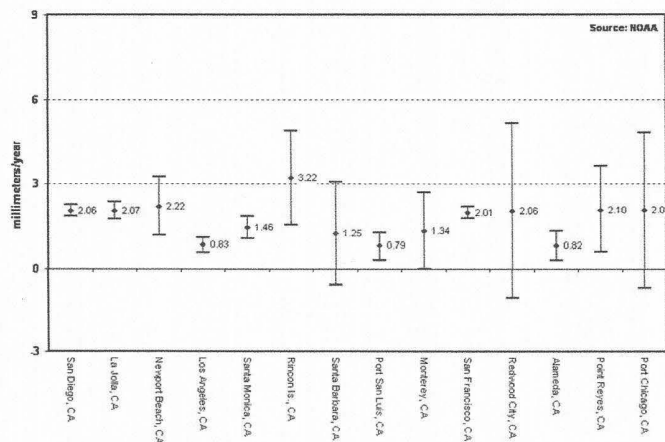


Figure B-7. Magnitude and confidence limits of trends for southern Pacific coast NOS tide stations. (NOS 2009, <http://tidesandcurrents.noaa.gov/sltrends/index.shtml>).

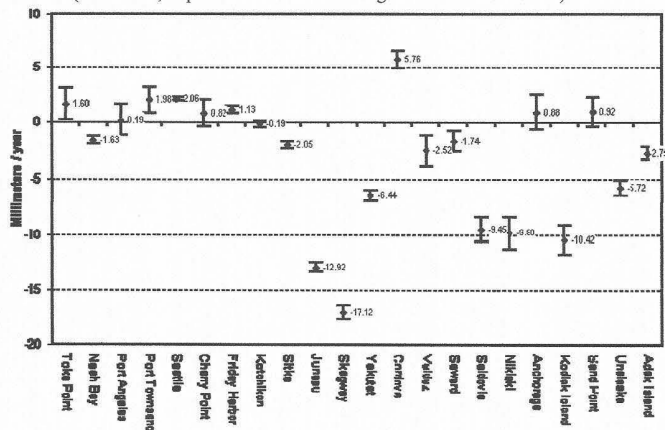


Figure B-8. Magnitude and confidence limits of trends for northern Pacific coast NOS

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j. The length of time that the historical record rate of change can be validly projected into the future depends upon at least the following factors:

- (1) the confidence of the present trend
- (2) local relative rate of change (little or no acceleration)
- (3) global rate of change (little or no acceleration)
- (4) absence of dramatic geologic or oceanographic events.

#### B-3. Estimating Future Change in Local MSL.

a. In USACE activities, analysts shall consider what effect higher relative sea-level rise rates could have on design alternatives, economic and environmental evaluation, and risk. The analysis shall include, as a minimum, a low rate which shall be based on an extrapolation of the historical rate, and intermediate and high rates, which include future acceleration of sea-level rise. The analysis may also include additional intermediate rates, if the project team desires. The sensitivity of each design alternative to the various rates of sea-level rise shall be considered. Designs should be formulated using currently accepted design criteria. A step-by-step approach is presented in a flow chart in Appendix C.

b. Since 1987 NRC study on sea-level change was completed, the IPCC has produced four editions of its projections for future climate change and sea-level rise. The NRC study and the IPCC Third and Fourth Assessment Reports, dated 2001 and 2007 are useful in estimating future changes in local MSL (see <http://www.ipcc.ch/>).

c. The 1987 NRC report reviews data on relative sea-level changes and the resulting effect on engineering structures and coastal wetlands. Despite its age, the information and guidance presented in this study, in terms of considering how different types of projects may be affected by sea-level rise, are useful and should be considered by USACE planners and engineers in both the planning and design phases of studies and projects. An additional factor is that the NRC report includes a range of possible future sea-level rise scenarios that is much greater than those presented in the 2007 IPCC report. The 2007 IPCC report has received some criticism for not fully considering the possibility of rapid ice loss in Antarctica due to massive failures of the West Antarctic Ice Sheet. Including the upper scenarios from the NRC report allows planners and engineers to consider the possibility of much greater rates of sea-level rise than those presented in the 2007 IPCC report and to thus accommodate some of the criticism directed at the 2007 IPCC report.

d. The NRC report recommended that feasibility studies for coastal projects consider the high probability of accelerating global sea-level rise (SLR) and provided three different accelerating sea-level rise scenarios. The NRC described these three scenarios using the

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$$E(t) = 0.0012t + bt^2 \quad (1)$$

in which  $t$  represents years, starting in 1986,  $b$  is a constant, and  $E(t)$  is the eustatic sea-level rise, in meters, as a function of  $t$ . The NRC committee recommended "projections be updated approximately every decade to incorporate additional data." At the time the NRC report was prepared, the estimate of global mean sea-level change was approximately 1.2 mm/year. Using the current estimate of 1.7 mm/year for global mean sea-level change, as presented by the IPCC (IPCC 2007), results in this equation being modified to be:

$$E(t) = 0.0017t + bt^2 \quad (2)$$

(1) The three scenarios proposed by the NRC result in global eustatic sea-level rise values, by the year 2100, of 0.5 meters, 1.0 meters, and 1.5 meters. Adjusting the equation to include the historic global mean sea-level change rate of 1.7 mm/year results in updated values for the variable  $b$  being equal to  $2.36E-5$  for modified NRC Curve I,  $6.20E-5$  for modified NRC Curve II, and  $1.005E-4$  for modified NRC Curve III. The three global eustatic sea-level rise scenarios updated from NRC (1987) are depicted in Figure B-9.

(2) Manipulating equation (2) to account for the fact that it was developed for eustatic sea-level rise starting in 1986, while projects will actually be constructed at some date after 1986, results in equation (3):

$$E(t_2) - E(t_1) = 0.0017(t_2 - t_1) + b(t_2^2 - t_1^2) \quad (3)$$

where  $t_1$  is the time between the project's construction date and 1986 and  $t_2$  is the time between a future date at which one wants an estimate for sea-level rise and 1986 (or  $t_2 = t_1 + \text{number of years after construction}$  (Knuuti, 2002) For example, if a designer wants to know the projected eustatic sea-level rise at the end of a project's period of analysis, and the project is to have a fifty year life and is to be constructed in 2008,  $t_1 = 2008 - 1986 = 22$  and  $t_2 = 2058 - 1986 = 72$ .

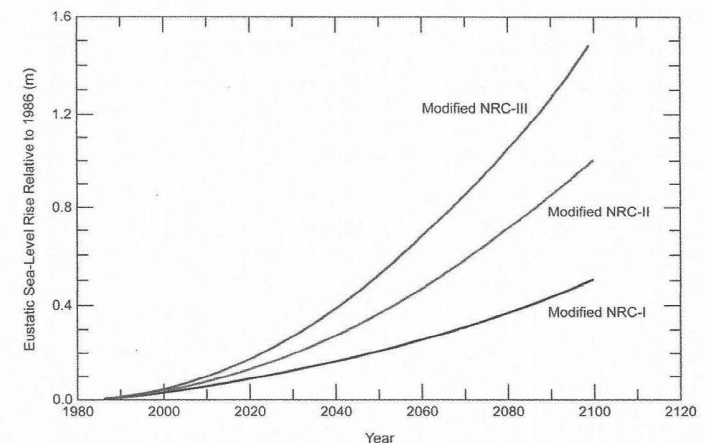
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Figure B-9. Scenarios for Eustatic Sea-level Rise (based on updates to NRC 1987 equation).

e. From the Special Report on Emissions Scenarios (SRES) (IPCC 2000), six emissions scenarios were used to develop six SLR projections. A suite of numerical models that model air-ocean global circulation, with varying degrees of robustness, were used to provide a range of results. For each of these models, IPCC used the six different climate change scenarios for input (see Appendix B-3 for other contributing factors). Sea-level rise was calculated for each of the six scenarios by averaging the modeled sea-level values at every model grid cell, for every numerical model.

(1) IPCC used the different emissions scenarios and the range of values obtained from the different numerical models to develop ranges of future sea-level rise values, and used this as a way to describe the uncertainty associated with projecting future sea-level rise. These ranges are shown in Table B-1 (for two climate change scenarios, B1 and A1FI, the least and most extreme).

(2) An example of an IPCC intermediate level of model-derived sea-level rise (scenario A1B) is shown in Figure B-10. Note that the blue shaded area of this figure represents a potential level of uncertainty for the scenario shown, based on the range of model predictions, and does not provide a quantitative estimate. Figure B-11 presents the modified NRC curves of Figure B-9 plus the reported 95% confidence limits of the B1 and A1FI scenarios shown in Table B-1 (IPCC 2007a). It should be noted that the confidence limits shown in these tables only describe the confidence of the range of model results and do not actually represent the



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Table B-1. Projected global average sea-level rise components during the 21st century for the B1 and A1FI scenarios. The table gives the IPCC's reported 5% and 95% confidence limit (m) of the estimated rise in sea level between 1980 to 1999 and 2090 to 2099 based on the SRES models (excerpted from IPCC 2007a, Table 10.7). The confidence limits shown in these tables only describe the confidence of the range of model results and do not actually represent the confidence of what could physically occur in the future.

	B1		A1FI	
	5% CL	95% CL	5% CL	95% CL
Sea-level rise, 2090-2099(m)	0.18	0.38	0.26	0.59

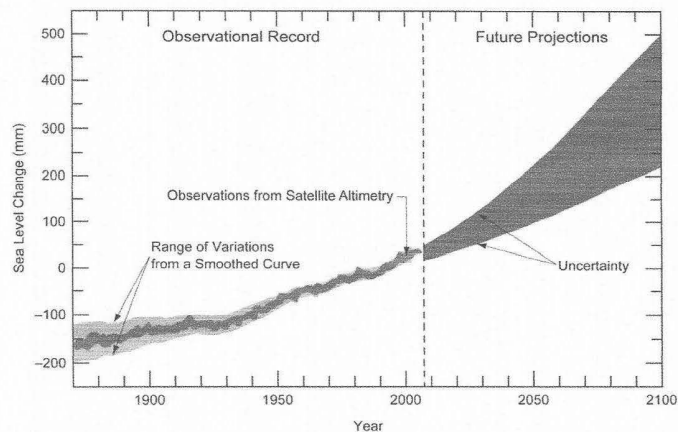


Figure B-10. Illustration of global mean sea level (deviation from the 1980-1999 mean) as observed since 1870 and projected for the future. The future projections have been calculated independently from the observations (after IPCC 2007a, FAQ 5.1, Figure 1).

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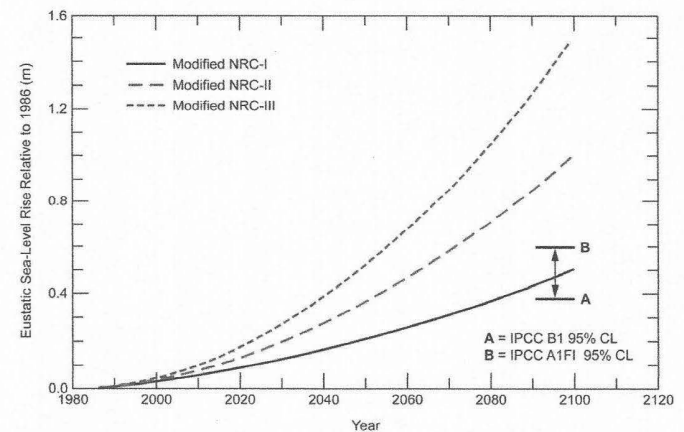


Figure B-11. Modified NRC (1987) eustatic sea-level rise scenarios and the IPCC (2007) scenario estimates for use in predicting future sea-level change.

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## APPENDIX C

## Flowchart to Account for Changes in Mean Sea Level

**C-1. Premise.** Global mean sea level (MSL) has risen over the past century, and the rate of rise will continue and may accelerate in the future. USACE projects need to be planned, designed, constructed, and operated with the understanding that the rate of rise of global MSL may accelerate and affect USACE water resource projects in and adjacent to the nation's coastal zone. In other locations, the relative sea-level is dropping, and USACE projects must account for the decrease in water levels and must balance this with the potential for increasing global MSL. The steps below are shown graphically in Figure C-1.

**C-2. Flowchart.**

- Step 1.** Is the project in the coastal/tidal/estuarine zone, or does it border those zones such that project features or outputs are now, or may be in the future, subject to influence by continued or accelerated rate of sea-level rise? YES-NO?
- If YES, go to Step 2.
  - If NO, continue with product development process without considering sea-level change.
- Step 2.** Locate nearest tide station(s) with a current period of record. Is the period of record at least 40 years? YES-NO?
- If YES, go to Step 4.
  - If NO, go to Step 3.
- Step 3.** Identify next closest long-term gauge. Assess whether or not the long-term gauge can be used to artificially extend the record of the short-term gauge. YES-NO?
- If YES, go to Step 4.
  - If NO, Consult with a tidal hydrodynamics expert, such as CO-OPS<sup>1</sup>.
- Step 4.** Assess whether identified long-term gauges can be used to adequately represent local sea-level conditions at project site. YES-NO?
- If YES, go to Step 5.
  - If NO, Consult with a tidal hydrodynamics expert, such as CO-OPS.

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- Step 5.** Assess whether the project site and gauge site have similar physical conditions (coastal/estuarine location, bathymetry, topography, shoreline geometry, and hydrodynamic conditions). YES-NO?
- If YES, go to Step 6.
  - If NO, Consult with a tidal hydrodynamics expert, such as CO-OPS.
- Step 6.** Calculate local historic trends for MSL, MHW, and MHHW at long-term gauge. Use CO-OPS values, if available. If not available, use CO-OPS method for sea-level trend analysis.<sup>1</sup> This historic trend is now the low or baseline trend rate for project alternative analysis (see 8(a)). Go to Step 7.
- Step 7.** Calculate standard error of the linear trend line (use CO-OPS values, if available). Go to Step 8.
- Step 8.** We must now evaluate whether there is a regional mean sea-level trend (see definition) that is different from the eustatic mean sea-level trend of 1.7 mm/year (+/- 0.5 mm/year, IPCC 2007a). See Figure C-2 for one example of such a region. Considering regional geology, is it possible to identify a vertically stable geologic platform within the same region as the project site? YES-NO?
- If YES, go to Step 9.
  - If NO, go to Step 11.
- Step 9.** Calculate regional MSL trend for the identified vertically stable geologic platform within the region, and go to Step 10.
- Step 10.** Estimate local rate of vertical land movement by subtracting regional MSL trend from local MSL trend. Go to Step 12.
- Step 11.** Assume the regional mean sea-level trend is equal to the eustatic mean sea-level trend of 1.7 mm/year (+/-0.5mm/year) and estimate local rate of vertical land movement by subtracting eustatic MSL trend from local MSL trend. Go to Step 12.
- Step 12.** Calculate future values for sea-level change for low (historic or baseline) rate: extrapolate historic linear trend into future at 5-year increments, OR reasonable increments based on both period of analysis and scope of study<sup>2</sup>. Go to Step 13.

<sup>1</sup> CO-OPS method for sea-level trend analysis is described in NOAA Technical Report NOS CO-OPS 36, "Sea Level Variations of the United States 1854-1999."

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**Step 13.** Calculate future values for sea-level change for intermediate rate (modified NRC Curve I), see 8(a)(1): calculate future sea-level change values at 5-year increments OR reasonable increments based on both period of analysis and scope of study by combining incremental values from equations A-2 and A-3 with values obtained by extrapolating rate of local vertical land movement. Go to Step 14.

**Step 14.** Calculate future values for sea-level change for high rate (modified NRC Curve III), see 8(a)(2): calculate future sea-level change values at 5-year increments OR reasonable increments based on both period of analysis and scope of study by combining incremental values from equations A-2 and A-3 with values obtained by extrapolating rates of local vertical land movement. Go to Step 15.

**Step 15.** Assess project performance for each sea-level change scenario developed in Steps 12, 13, and 14. Go to Step 16.

**Step 16.** Calculate the risk for each project design alternative combined with each sea-level rise scenario, as developed in Steps 12, 13, and 14 at 5-year increments OR reasonable increments based on both period of analysis and scope of study. Go to Step 17.

**Step 17.** Assess risk<sup>1</sup> and reevaluate project design alternatives. Consider at a minimum: planning for adaptive management<sup>1</sup>, designing to facilitate future modifications, and designing for a more aggressive future sea-level change scenario. Go to Step 18.

**Step 18.** Select project designs that best accommodate the range of sea-level change scenarios.

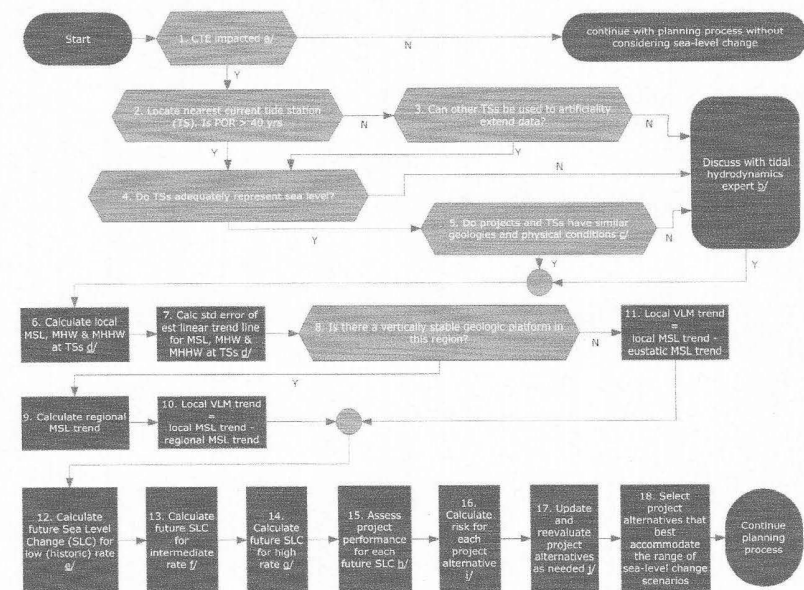
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Figure C-1. Graphical illustration of process to account for changes in mean sea level.

- a) Is my project in or bordering coastal/tidal/estuarine (CTE) zone such that project features or outputs are now, or may be in the future, subject to influence by continued or accelerated rate of rise?
- b) Discuss with tidal hydrodynamics expert, such as CO-OPS (NOAA).
- c) Similar physical conditions such as coastal/estuarine location, bathymetry, topography, shoreline geometry, and hydrodynamic conditions.
- d) Use CO-OPS (NOAA) values, if available.
- e) Low rate: extrapolate historic linear trend into future at selected increments.
- f) Intermediate rate (IPCC-2007, or modified NRC-Curve-I): calculate future SLR values at selected increments by combining incremental values from equations A-2 and A-3 with value obtained by extrapolating rate of local vertical land movement.
- g) High rate (modified NRC-Curve-III): calculate future SLR values at selected increments by combining incremental values from equations A-2 and A-3 with value obtained by extrapolating rate of local vertical land movement.
- h) Consider project design function: performance, design issues; project stability; and project operation and maintenance.
- i) Calculate the risk for each project alternative at selected increments.
- j) Consider at a minimum: planning for adaptive management (updating operational strategies based on new information); designing to facilitate future modifications; and adaptive engineering (designing for a more

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Figure C-2. Example of a region (northern Gulf of Mexico) that may exhibit a regional rate of mean sea-level rise that is different than the eustatic rate of mean sea-level rise. Red numbers represent the rate of local mean sea-level change (mm/yr) at NOAA tide stations, yellow numbers represent the same at USACE tide stations. The rectangle represents an area with a geologic platform that is generally thought to be vertically stable (Step 8). While local mean-sea level trends within this rectangle vary, they are consistently higher than the rate of eustatic mean sea-level rise (1.7 mm/year) and are thought to be indicative of the rate of regional mean sea-level rise (Step 9). This higher rate of regional mean sea-level rise could be used, along with rates of local mean sea-level rise, to estimate rates of local vertical land movement for studies and projects within the region, such as in Mississippi and Louisiana (Step 10). (From Knuuti, 2006<sup>1</sup>).

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### Glossary

**Coastal.** The term coastal as used in this EC refers to locations with oceanic astronomical tidal influence, as well as connected waterways with base-level controlled by sea-level. In these latter waterways, influence by wind-driven tides may exceed astronomical tidal influence. Coastal areas include marine, estuarine, and riverine waters and affected lands. (The Great Lakes are not considered “coastal” for the purposes of this EC.)

**Eustatic sea-level rise.** Eustatic sea-level rise is a change in global average sea level brought about by an increase in the volume of the world ocean [Intergovernmental Panel on Climate Change (IPCC) 2007b].

**Global mean sea-level (GMSL) change.** Sea level can change globally due to (i) changes in the shape of the ocean basins, (ii) changes in the total mass of water and (iii) changes in water density. Sea-level changes induced by changes in water density are called steric. Density changes induced by temperature changes only are called thermosteric, while density changes induced by salinity changes are called halosteric (IPCC 2007b). See Figure B-10.

**Local (i.e., “relative”) sea level.** Sea level measured by a tide gauge with respect to the land upon which it is situated. See mean sea level (MSL) and sea-level change (SLC). Relative sea-level change occurs where there is a local change in the level of the ocean relative to the land, which might be due to ocean rise and/or land level subsidence. In areas subject to rapid land-level uplift, relative sea level can fall (IPCC 2007b). Relative sea level change will also affect the impact of any regional sea level change.

**Mean sea level (MSL).** A tidal datum. The arithmetic mean of hourly heights observed over the National Tidal Datum Epoch (~19 years). Shorter series are specified in the name; e.g., monthly mean sea level and yearly mean sea level (Hicks et al 2000).

**Post-glacial rebound.** The vertical movement of the land and sea floor following the reduction of the load of an ice mass, for example, since the last glacial maximum (~21,000 years ago). The rebound is an isostatic land movement (IPCC 2007b).

**Regional sea-level change.** An increase or decrease in the mean level of the ocean’s surface over a specific region. Global sea level has regional variations and regional sea-level change may be equal to, greater than, or less than global sea-level change due primarily to regional differences in ocean heating and cooling or to changes in bathymetry. Regional sea-level change as used here does not include local geologic effects, such as subsidence or tectonic movement.

**Risk.** Risk is a measure of the probability and severity of undesirable consequences (including, but not limited to, loss of life, threat to public safety, environmental and economic damages).

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Sea-level change. A change in the mean level of the ocean.

Tide station. A device at a coastal location (and some deep-sea locations) that continuously measures the level of the sea with respect to the adjacent land. Time averaging of the sea level so recorded gives the observed secular changes of the relative sea level (IPCC 2007b).

Uncertainty. Uncertainty is the result of imperfect knowledge concerning the present or future state of a system, event, situation, or (sub) population under consideration. There are two types of uncertainty: aleatory and epistemic. Aleatory uncertainty is the uncertainty attributed to inherent variation which is understood as variability over time and/or space. Epistemic uncertainty is the uncertainty attributed to our lack of knowledge about the system (e.g., what value to use for an input to a model or what model to use). Uncertainty can lead to lack of confidence in predictions, inferences, or conclusions.

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**From:** Blair, Jeff  
**Sent:** Sunday, November 08, 2015 12:09 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Comment on ACF DEIS  
**Attachments:** ACF\_DEIS\_Public\_Comment\_Blair.pdf

Hello, Please consider my public comment regarding the DEIS for the ACF River Basin (comment attached).

Regards,  
Jeff Blair

Associate Director  
FCRC Consensus Center  
Florida State University

[Blockedhttp://consensus.fsu.edu](http://consensus.fsu.edu)

***"Facilitating Consensus Solutions, Supporting Collaborative Action."***

“YOU must be the change you want to see in the world.” *Mahatma Gandhi*

“Our lives begin to end the day we become silent about things that matter.” *Martin Luther King Jr.*

**Apalachicola-Chattahoochee-Flint (ACF) River Basin Draft Environmental Impact Statement (DEIS) Comments Submitted on 11/9/15**

Submitted by:  
Jeff Blair residing at

The Apalachicola watershed, especially the Apalachicola Bay, is a biologically rich and economically important habitat that is one of the most productive estuarine systems in the Northern Hemisphere. The Apalachicola Bay supplies 90% of the oysters for the state of Florida and 10% of the oysters for the entire United States. In addition to being economically important, oysters serve as valuable ecosystem engineers through modifying flow, filtering water, and enhancing diversity by providing three-dimensional habitat for hundreds of species.

The quantity and quality of freshwater that supply the system are critical to the social, economic, recreational, educational, and environmental health of the tri-state Region and ultimately for the state of Florida. In addition, water quality and quantity is equally important to the rare, endemic, threatened, and endangered plant and animal species that reside within the Apalachicola River basin, and downstream as I referenced, the estuary is one of the most diverse and productive ecosystems in the world. The estuarine waters provide critical foraging and nursery habitat for diverse fish and invertebrate assemblages that are commercially and recreationally harvested.

A

It is clear that there are serious concerns resulting from the impacts of reduced freshwater input on the biologically rich and economically important habitats of the Apalachicola watershed, and I am urging the Army Corps of Engineers to realize that the reduced flows resulting from Georgia's increased diversion of water from the Apalachicola-Chattahoochee-Flint (ACF) River Basin presents a critical problem when coupled with drought-related water shortages. In updating the Water Control Manual for the ACF it is critical that Florida receives its fair share of water sufficient to ensure the health and productivity of the entire watershed, especially the Apalachicola Bay.

B

The health, productivity and sustainability of the Apalachicola River, the Floodplain, the Bay and the Gulf are critical to our economy and cultural heritage. The Army Corps of Engineers must, and in fact is required, to give fair and equal consideration to Fish and Wildlife Conservation in the Apalachicola ecosystem, just as it does for the other authorized purposes of the ACF river system. Thank you.

C

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- C. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.





November 2, 2015

Commander, U.S. Army Corps of Engineers,  
Mobile District  
Attn: PD-EI (AFC-DEIS)  
P.O. Box 2288  
Mobile, AL 36628

Dear Commander:

I am writing today to express my deep concern for the health of the Apalachicola Bay.

For the last several decades, we have witnessed an explosion in the population along the Chattahoochee-Flint-Apalachicola river system, specifically in the Metro Atlanta area. Because of this massive increase in population, along with the implementation of large agricultural irrigation systems, and severe drought, the health and productivity of the Apalachicola Bay has declined substantially. As you are aware, the health, productivity, and sustainability of this area are critical to the economies of communities such as Apalachicola and East Point, Florida. In the last few years, we have witnessed the largest decline in the number of oysters harvested in the history of the bay. With this decline in numbers of oysters, we have also seen a severe decline in the marine life that relies on the oysters.

A

The Apalachicola River and Bay is the last ecosystem of its kind...anywhere, making this so much more than "a local issue." As a national resource, the Apalachicola Basin is an ecological and cultural treasure!

The river's floodplain is the biological factory that fuels the productivity of Apalachicola Bay. Today, because the Corps management of the river system's dams and reservoirs prioritizes all other authorized uses of the river's water over the conservation, preservation and long-term sustainability of the ecosystem itself, the Apalachicola River receives less and less freshwater and we are losing the ecological functions of the Apalachicola's Floodplain and Bay.

B

Although I am a Georgia resident, I do not think that the state of Georgia should have a greater say-so in the management of the water just because the Chattahoochee and Flint rivers begin here.

As you rewrite/update the operating manual for the Apalachicola-Chattahoochee-Flint (ACF) river system, I would ask you to take into serious consideration the impact that your action will have on the Apalachicola Basin and the people that rely on it.

Kindest Regards,

Clay Robinson

#### Response to ACF043 – Clay Robinson

A. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.

B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.



Dear Commander,

As a local resident and nature lover, I implore you to please take into much consideration of the health, productivity and sustainability of the Apalachicola River, Floodplain, Bay and the Gulf are critical to our economy and cultural heritage!

Please give fair and equal consideration to Fish and Wildlife Conservation in the Apalachicola ecosystem as they do the other authorized purposes of the ACF river system. Many local businesses and families of this region depend solely on the wellbeing of our natural tributaries and sustain themselves with the natural resources the bay and river system provides. As I stated before its a cultural heritage for many people native to this area. And for many the only lifestyle they know of. A large percentage of the nations oysters come from Aplach Bay as I am sure you are aware. Many visitors come from all other states just to see our beautifully preserved and working ecosystem. There are so many native rare and all most extinct plants and animals that depend daily on maintaining a healthy bay and river estuary. Some only exist in this area, or maybe one other in the world.

A

Please keep our little Forgotten Coast in the true spirit of OLD FLORIDA... Show people that come to see Florida what REAL Florida is. Thank you for your time and I pray this finds its way to the right person to make this HUGE decision!

Coastal wishes,



Sharon Stump

#### Response to ACF044 – Sharon Stump

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

## US Army Corps Drought Modeling, ACF River Basin

The impact of drought conditions on Lake Lanier can be modeled in two ways. Your approach examines averages in the 72 year historical record. Your data shows rather quiet variation in Lake Lanier levels, from 1056 feet to 1065 feet. These levels are exceeded in 90 per cent of the 72 year period. This analysis based on historical averages suggests that drought will be an infrequent visitor to the Lake Lanier basin.

But this focus on historical averages surely underestimates the consequences of extreme drought conditions. Dealing with the historical record is “factual” but may not be the best guide to coping with future water supply problems. A better guide to future drought conditions might use risk assessment techniques and predict expected extreme drought years rather than historical averages.

In the most recent drought years, Lake Lanier water levels fell to about 1050 feet, well below the average historical record. The scientific consensus is that global temperatures are rising and that more extreme weather events are likely in future decades. Extreme drought years will probably be more common and more severe in the next 72 years than they were in the last 72 years.

What are the consequences to ACF if Lake Lanier water levels fall to 1050 or 1040 or 1030 feet? For responsible water supply policy making, we need to know the consequences of a worst case scenario. How likely are extreme drought conditions in the next 10, 20 or 30 years? Planning for worst cases provides better insight into future water supply situations than dealing with 72 year historical averages.

With information about possible water supply constraints in the future, policy makers can better consider appropriate policy changes.



A

## Response to ACF045 – Thomas Rasmussen

- A. Results of the HEC-ResSim model enabled an in-depth review of water management for a wide range of hydrologic conditions encountered over a 73-year hydrologic period of record (1939–2011), including several years of extreme drought conditions. In addition, a climate change analysis looked at predictive impacts to USACE reservoir operations as a result of potential changes in hydrology. The evaluations in the EIS include information to support a comparison of median values for flow, lake level, and related values under the alternative plans, which would be representative of conditions typically or routinely encountered. However, values for those parameters also were presented at the 90-percent exceeded level (i.e., values that would be exceeded 90 percent of the time over the modeled period of record) to represent extreme drought conditions. The EIS analysis devoted significant focus to those results as they highlight the differences in the ways the alternative plans would perform when the hydrologic conditions are the most severe. Further, the EIS, when appropriate, considered and compared specific parameters during historic drought periods. Provisions are included for coordinating with appropriate federal, state, and local stakeholders during the occurrence of drought conditions. The importance of drought plans has become increasingly obvious as more demands are placed on the water resources of the basin. During low-flow conditions, the system might not be able to fully support all project purposes. The ACF Basin drought plan includes methods for identifying drought conditions; includes measures to be used to respond to and mitigate the effects of drought conditions; and helps minimize the effect of drought on the ACF Basin water resources.

**CARRABELLE WATERFRONTS PARTNERSHIP**

Designated in 2007

November 14, 2015

Commander, U.S. Army Corps of Engineers, Mobile District  
 Attn: PD-EI (ACF-DEIS)  
 P.O. Box 2288  
 Mobile, AL 36628

RE: Comments ACF – DEIS Water Control Manual

Dear Madame/ Sir:


The Carrabelle Waterfronts Partnership submits the following comments to be considered in the Environmental Impact Statement for the update of the ACF Water Control Manual. We in Franklin County, Florida as users of the ecosystems downstream of the ACF system are dependant on the freshwater releases from reservoirs controlled by the US Army Corp of Engineers (Corps). Increased upstream demands and droughts have adversely impacted the seafood industry employees, the recreational users, and the eco-tourism guides who depend on a healthy, productive Apalachicola River and Bay. As managers of the ACF Waterway it is the responsibility of the Corps to protect the basic flow needs of the ecosystem. The freshwater needs and the saltwater tolerances for the Apalachicola Bay must be considered by the Corps while planning the current and future river flow regime during the update and implementation of the ACF Water Control Manual. A The EIS should analyze and describe the impacts of the proposed freshwater flows on each of the categories listed below:

Biological Resources  
 Cultural Resources  
 Data, Studies & Analytical Tools  
 Drought Operations  
 Flood Risk Management  
 Hydropower  
 National Environmental Policy Act  
 Navigation  
 Socioeconomics and Recreation  
 Water Management Recommendations  
 Water Quality  
 Water Supply  
 Other - Fisheries

B

Thank you for the opportunity to comment.

Lesley Cox, Environmental Chair  
 Carrabelle Waterfronts Partnership



## Response to ACF046 – Lesley Cox

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.



## FLORIDA DEPARTMENT of STATE

**RICK SCOTT**  
Governor

**KEN DETZNER**  
Secretary of State

Mr. Curtis M. Flakes  
Attn: Mr. Lewis Sumner  
Mobile District, US Army Corps of Engineers  
P.O. Box 2288  
Mobile, AL 36628-001

November 9, 2015

Re: DHR Project Review File Number 2015-4760  
*Draft Environmental Impact Statement: Update of the Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin*

Mr. Flakes:

The Florida State Historic Preservation Office reviewed the referenced Draft Environmental Impact Statement (DEIS) in accordance with the National Environmental Policy Act (40 CFR 1500-1508) and Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800.3-13).

The DEIS references two phases of a cultural resources study of the ACF Basin. According to the DEIS, these studies present an archaeological site predictive model and sensitivity model, and an analysis of potential effects to sites based on changes in water level management and increased upstream consumption. Although the DEIS summarizes the results of the reports, this summary does not provide site names, numbers, other identification information, or details of the methodology utilized to obtain the results. It is therefore not possible for us to concur with the Corps' proposed summary of effects to cultural resources/historic properties at this time. Please forward hard copies, and electronic copies, of the study so that we may continue our review.

A

Additionally, changes in water level management and increased upstream consumption have the potential to effect the Apalachicola Historic District (8FR350) and several properties contributing to the district's significance. These resources have recently been proposed as eligible Traditional Cultural Properties (TCPs) by the U.S. Coast Guard in the MC252 (Gulf of Mexico Oil Spill) TCP Inventory. These properties include (but may not be limited to) the Wharf and Mill Pond TCP, the Lafayette Park TCP, and the Battery Park TCP. The study also identified the Apalachicola Bay as contributing to the significance of the Apalachicola Fishing Community Cultural Landscape. The proposed action, and alternatives, presented in the DEIS have the potential to effect these historic properties/cultural resources, as changes in water level management and increased upstream consumption could affect the traditional fishing and cultural practices of the Apalachicola fishing community, which defines the character of Apalachicola Bay and the larger cultural landscape of which it is a part. Furthermore, there may be other unidentified TCPs along the Apalachicola-Chattahoochee-Flint River system that could be effected by the proposed action.

B



Division of Historical Resources  
R.A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399  
850.245.6300 • 850.245.6436 [Fax] flheritage.com  
Promoting Florida's History and Culture VivaFlorida.org



### Response to ACF047 – FLDHR

- A. It is customary not to provide specific site location data in environmental documents that are available to the general public to prevent potentially eligible sites from being vandalized or looted. USACE would be happy, however, to provide the sites evaluated for the Master WCM update directly to the Florida State Historic Preservation Office (SHPO). The data set was collected in 2009 by Brockington and Associates, Inc. upon request by and under contract to USACE, Mobile District as a follow-up to the 1998 study with the same goals. The SHPOs with sites in the study had the opportunity to comment on each of the studies, and concurrence letters regarding their methodologies and results are on file with the district.

The data set was collected in 2009 by Brockington and Associates, Inc. upon request by and under contract to USACE, Mobile District as a follow-up to the 1998 study with the same goals. The SHPOs with sites in the study had the opportunity to comment on each of the studies, and concurrence letters regarding their methodologies and results are on file with the district.

Fifteen sites were selected by Brockington to evaluate both past and possible future impacts from proposed changes in water level. The sites were selected based on their lakeshore or riverbank locations to represent an accurate sample of sites periodically affected by water. Attempts were made to select two sites from each USACE lake project in the ACF Basin (i.e., Lake Lanier, West Point Lake, Lake Walter F. George, Lake Andrews, and Lake Seminole) in addition to a few other sites throughout the ACF Basin. Although Brockington identified past, present, and possible future effects from erosion and established a geomorphologic baseline, questions still remained about site exposure to human impacts—particularly looting.

The most recent study conducted by USACE in 2014 addressed impacts from water management and site exposure. The data set was built using the data from the previous Brockington studies and evaluated using geographic information systems technology.

- B. Public involvement during the Master WCM update process has been rigorous and ongoing since 2008. A detailed summary is included in section 1.4 of the EIS.

USACE appreciates the information provided on newly recommended traditional cultural properties (TCPs) in the ACF Basin; however, based on the nature of the TCPs and projected environmental impacts of the PAA, USACE has determined that the PAA will have no effect on those TCPs. Throughout the NEPA process opportunities for public input have been offered and at no time were TCPs mentioned by the public.

Specifically, the USACE PAA would have little to no effect on flow and water quality conditions in the Apalachicola River downstream of Jim Woodruff Lock and Dam compared to the NAA (current reservoir operations). The PAA is not expected to cause a change in Apalachicola Bay ecological or socioeconomic resources compared to current operations, thus no direct or indirect impacts to the TCPs mentioned are expected.

The PAA is not expected to result in a change to conditions that currently exist for the commercial fishing industry—including oysters—in Apalachicola Bay compared to current reservoir operations (NAA). Physical and ecological conditions that affect the overall abundance or extent of occurrence of commercial species are not expected to change under the PAA. Section 6.5.5 of the EIS addresses the effects of the various WCM update alternatives on the Apalachicola Bay oyster industry, concluding that no direct or indirect impacts to the TCPs mentioned are expected.

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DHR #: 2015-4760  
Page 2

We request that the Corps of Engineers considers potential TCPs and Cultural Landscapes as part of its identification of historic properties responsibilities outlined in 36 CFR 800.4. Our office looks forward to further consultation with the Mobile District as the Section 106 and NEPA processes move forward. If necessary, we can provide guidance and documentation related to the identification and evaluation of Traditional Cultural Properties. We would also welcome the opportunity to discuss the potential effects of the proposed action alternatives in a meeting or conference call.

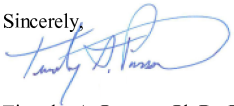
C

- C. USACE concurs with the comment. Additional consultation was conducted for the final EIS under section 106 of the National Historic Preservation Act as outlined. The results are reflected in section 6.7 of the final EIS.

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If you have any questions concerning these comments, please contact me at [Timothy.Parsons@DOS.MyFlorida.com](mailto:Timothy.Parsons@DOS.MyFlorida.com), or at 850.245.6333 or 800.847.7278.

Sincerely,



Timothy A. Parsons, Ph.D., RPA  
Deputy State Historic Preservation Officer  
for Compliance and Review

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**From:** Richard  
**Sent:** Monday, November 09, 2015 3:43 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] ACF management plan

I have attended the public information session today in East Point, FL, and talked to some of the staff answering questions.

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My understanding is that the Corps's preferred alternative, #7, would not change river flows at Apalachicola, even though biological research indicates that current river flows are insufficient for the biological health of Apalachicola Bay. It is important to me and to the economy of this Region that the Corps give fish and wildlife conservation at least equal consideration with the other authorized purposes of the ACF River system. I see no evidence today that the Corps's planning takes the fish and wildlife of the Bay into consideration.

A

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Richard Hopkins  
 Sent from my iPhone

#### Response to ACF048 – Richard Hopkins

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

The purpose of the Master WCM update and EIS is to evaluate and compare alternative plans to update project operations in the ACF Basin to improve upon current operations (i.e., the NAA). The NAA reflects current reservoir operations as they have evolved over time in response to laws, regulations, policy, and new technical information. Basing the NAA for the ACF Basin on a pre-NEPA 1958 WCM or a predam condition to assess the effects of alternative WCM update plans would neither accurately reflect current baseline operations nor be consistent with “no action” as defined in the Council on Environmental Quality’s memorandum of March 23, 1981, Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations. The EIS considered direct, secondary, and cumulative impacts and indicates that there would be essentially no incremental effect on the Apalachicola River and Bay as a result of the PAA as compared to the NAA.

## Response to ACF049 – Lisa Keith-Lucas

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**From:** Lisa Keith-Lucas  
**Sent:** Monday, November 09, 2015 3:49 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] ACF River System

Dear Commander,

As a resident of Franklin County I urge you to give fair and equal consideration to the entire River System, INCLUDING the Apalachicola River, Floodplain, Bay and nearby Gulf, and its health, fish and wildlife. This river is critical to the economy and central to the heritage of our area, and this ecosystem is unique in its richness and diversity.

A

Thank you for your attention to this matter.

Lisa Keith-Lucas  
 Carrabelle9

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.



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**From:** Margaret Dickey Richardson  
**Sent:** Monday, November 30, 2015 1:14 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola Ecosystem

A native to this area who lives in Eastpoint but is now too old to oyster,---- she makes her living serving people food and drinks once told me.....

"This big old Apalachicola Bay is the womb of the Gulf...."

She went on to talk all about the magnificent fishery, and uniquely rich estuary and fishing & breeding grounds.....birds, animals, life of the people dating back many generations

I thought it was a unique way to talk about this fabulous place which is fed by the Flint and Chattahoochee Rivers.

You-all, Army Corps of Engineers, have a responsibility to protect that womb and the offspring that is such an important part of not only our economy, but of **all life for all the Gulf of Mexico.**

You can't stop the fertilizer and pesticide run-off from every golf course, pollution from marinas, junk dumped by some idiots into the rivers, or the fluctuation of the rain....but you can make sure that the womb - the Apalachicola River and Bay..... is treated with care and is afforded its **fair share of freshwater** to assure the health of our oysters and fish and our people. And not only fish depend on the health of the bay....but animals who fish and live on its banks, drink the river's waters....

A

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We are small and remote from the bustle and hurried life of big cities to our north, their demands for new developments, commercial parks and manufacturing and that is part of our magic...we are remote, healthy with fish, oysters, animals and birds an attractive and lovely place that you and your family and friends love to visit. We cannot live our fish and animal world cannot thrive with out enough freshwater.

B

Thank you for taking care of the Womb of the Gulf of Mexico.

Margaret Dickey Richardson

A. The Proposed Action Alternative (PAA) includes fish and wildlife conservation operations throughout the basin (for example, the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam.) Additional information on the PAA can be found in Section 5 of the EIS. The EIS considered and disclosed the expected impacts that the PAA may have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River, and into the Bay, compared to current reservoir operations under the No Action Alternative (NAA). Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, there would be no anticipated incremental effect on fish and wildlife resources in the bay.

B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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**From:** Jazz  
**Sent:** Sunday, November 08, 2015 7:40 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola River

This is a message to the Army Corps of Engineer

A

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*"PLEASE protect our River, our Bay, the Gulf.... our Livelihood.". Our area, our ecosystem, has already been subjected to years of natural and manmade trauma and is already in danger of clasping . We would appreciate continued support.*

B

Thank you,  
 Margene Off

Involved Citizen  
 Property owner  
 Business owner

#### Response to ACF051 – Margene Off

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. The purpose of the Master WCM update and EIS is to evaluate and compare alternative plans to update project operations in the ACF Basin to improve upon current operations (i.e., the NAA). The NAA reflects current reservoir operations as they have evolved over time in response to laws, regulations, policy, and new technical information. Basing the NAA for the ACF Basin on a pre-NEPA 1958 WCM or a predam condition to assess the effects of alternative WCM update plans would neither accurately reflect current baseline operations nor be consistent with "no action" as defined in the Council on Environmental Quality's memorandum of March 23, 1981, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*. The EIS considered direct, secondary, and cumulative impacts and indicates that there would be essentially no incremental effect on the Apalachicola River and Bay as a result of the PAA as compared to the NAA.

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**From:** Donna Legare  
**Sent:** Sunday, November 08, 2015 3:13 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola River

November 8, 2015

Dear Commander, U. S. Army Corps of Engineers,

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We are writing because we are very concerned over the water management plan for the Chattahoochee-Flint-Apalachicola River system, which should also address the Floodplain, Bay and Gulf as well as the three rivers. The Apalachicola River and its floodplain and bay is one of the most biologically diverse places in the nation and needs its share of fresh water in order to maintain this diversity.

What does the river mean to us? Personally, we have canoed its tributaries, hiked its adjacent trails, sailed its bay and motored up and down its river channel. We don't fish or even eat its famous oysters, but we strongly value its seafood industry, both commercial and recreational. We also value the tupelo honey industry that is unique to this river. We value the bird life and insect life along the river, the dolphins in the bay and river, the trees and wildflowers of the floodplain.

A

The Apalachicola River System is a world class treasure and needs world class management and protection if it is to function for future generations. We hope the Army Corps of Engineers will be a leader in preserving this treasure.

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Sincerely,

Donna Legare and Joseph E. (Jody) Walthall

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- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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**From:** chad.hanson  
**Sent:** Saturday, November 07, 2015 8:36 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] apalachicola river and bay

US Army COE:

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Please consider the ecological health and needs of the entire Apalachicola River and Bay system when updating the Corps' manual on the ACF river system. As you surely know, the Apalachicola River needs sufficient and consistent freshwater flow to ensure healthy fish and wildlife populations that inhabit the system. Freshwater flow is critically important not only to the River but to the Bay as well where a seafood industry relies on a healthy ecosystem. Oysters, blue crabs, and numerous fish species life cycles are tied to the flow from the River. Under proper flows, the River pumps out nutrients into the Bay and the Gulf of Mexico that feed the entire ecosystem and help drive the seafood industry, including abundant recreational fisheries. This seafood and recreational fisheries industry are primary economic drivers in the Apalachicola Bay region. Cutting off freshwater flow affects the fish and wildlife, and the fishing and tourism communities. The River and Bay need sufficient and healthy freshwater flows and the Corps needs to have ensure the management plan for the ACF system includes that sufficient flow.

A

B

Thank you for your consideration.

Chad Hanson

#### Response to ACF053 – Chad Hanson

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF054a – Kentucky Parkis

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**From:** kentucky parkis  
**Sent:** Monday, November 09, 2015 9:06 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] APalachicola River

Dear Army Corps of Engineers -  
the health, productivity and sustainability of the Apalachicola River, Floodplain, Bay and the Gulf are critical to our economy and cultural heritage. The Corp of Engineers must give fair and equal consideration to Fish and Wildlife Conservation in the Apalachicola ecosystem as they do the other authorized purposes of the ACF river system.

A

BASSically Yours, Kentucky  
Sent from my 5-String Tobias Bass

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

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**From:** kentucky parkis  
**Sent:** Tuesday, January 26, 2016 10:31 AM  
**To:** ACF-WCM; Juma McCormick  
**Subject:** [EXTERNAL] Your Manual

- *Dear Army Corps of Engineers*

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- As a  
*longtime Floridian, the health, productivity and sustainability of the Apalachicola River and Bay are critical to the economy and cultural heritage of Florida and the entire Gulf Coast. The Corps of Engineers must give the same fair and equal consideration to fish and wildlife conservation in the Apalachicola River ecosystem as they do the other authorized purposes of the ACF river system.*

A

- *It is imperative that the Corps' rewrite of your manual revises the way you manages the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem.*

B

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**Thanks for your attention to this wonderful, unique and revenue-generating watershed. Happy seafooding!**  
**Kentucky Parkis - MA, Jazz Educator**

#### Response to ACF054b – Kentucky Parkis

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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**From:** Diane Brewer  
**Sent:** Thursday, November 12, 2015 1:53 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola

Gentlemen,  
 Understanding you are in process of updating the 1958 Water Manual, I would like to add the following comment as I was unable to attend the public meeting this past Monday.

My husband and I permanently relocated to Apalachicola from Ft. Lauderdale in 2014 after making many visits since the late 1980s when we bought property in the Historic District 1 block away from Apalachicola Bay. We chose to move here because we have always been impressed with the town's layout owing to its 1830 plat, the authenticity of the town's commercial fishing activities and multi-generational population in the seafood industry which give Apalachicola something unique distinguishing it from many others and its history both commercially through timber, sponge and cotton shipping through the Civil War to the modern era where heritage tourism and its related commercial and retail and service components is abundant and increasing. Much has been written documenting its history.

We are not alone. Many of our neighbors have relocated here from California, Kentucky, Colorado, Massachusetts, Georgia, Tennessee and elsewhere for many of the same reasons.

While there have been many changes over the past 25 years, these characteristics MUST be safeguarded.

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Apalachicola is surrounded by water from the Apalachicola River and its creeks and estuaries, all downstream from Georgia's Chatahoochee River, as well as Apalachicola Bay and the Gulf. While I have read the Army Corps of Engineers' jurisdiction stops short of our town, surely you can appreciate the impact of the level and quality of water flowing downstream from waters within your responsibilities.

A

Apalachicola has obtained and is spending millions of dollars to sustain the viability of the Bay from oyster bed re-shelling as well as filtering stormwater run off.

In addition to our waters, land resources outside the town include large acreage covered by the Franklin County and Apalachicola Forests and several State Parks which are home to American Bald Eagles and other birds, bears, deer, boar, turtles and more.

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The commercial seafood business, sport fishing, hunting, eco-tourism and the most beautiful beaches in the State depend on the careful management of our waters and other natural resources. I urge you to consider the entirety of this region as you update the water manual. They are interdependent and its delicate balance could easily go awry. Please help us maintain the uniqueness of Apalachicola River, Bay, town and surrounding forests.

B

Thank you for giving members of the public an opportunity to be heard. It is fundamental to the American way of life.

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Diane K. Brewer

1

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. The economic, social, and cultural resource effects associated with the Master WCM update alternatives are presented in section 6.6 through 6.8 of the EIS. The USACE PAA would have little to no effect on flow and water quality conditions in the Apalachicola River downstream of Jim Woodruff Lock and Dam compared to the NAA (current reservoir operations). Accordingly, the PAA is not expected to cause a change in Apalachicola Bay ecological or socioeconomic resources compared to current operations.

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**From:** Lori Smith  
**Sent:** Monday, November 02, 2015 9:59 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola-Chattahoochee-Flint (ACF) & Environmental Impact Statement

I understand that the U.S. Army Corps of Engineers is updating its operating manual for the Apalachicola-Chattahoochee-Flint (ACF) river system - the river system that Apalachicola Bay depends on for freshwater and nutrients to stay healthy and productive. And that the Corps is accepting public input regarding the Corps' draft Environmental Impact Statement. The ACF Master Water Control Manual was last updated in 1958. Since then, several factors including severe drought, increased population and large agricultural irrigation operations have contributed to a decline in the productivity of Apalachicola Bay.

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*It is imperative that the Corps' rewrite of its manual revises the way it manages the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem. The health, productivity and sustainability of the Apalachicola River, Floodplain, Bay and the Gulf are critical to our economy and cultural heritage. The Corp of Engineers must give fair and equal consideration to Fish and Wildlife Conservation in the Apalachicola ecosystem as they do the other authorized purposes of the ACF river system.*

On October 2, 2015, the US Corps of Engineers released the draft Environmental Impact Statement to the public for review and comment. In response to the Corps' release of the draft Environmental Impact Statement, Florida's congressional delegation issued a joint press release. The Army Corps of Engineers is proposing new regulations for the Apalachicola-Chattahoochee-Flint River, but 22 Florida Congressional Delegation members drafted a letter to the Corps, highlighting their concerns for the Apalachicola Bay. Congresswoman Gwen Graham, Senators Marco Rubio, Bill Nelson and others rallied to voice concerns about the Army Corps of Engineer's proposal. The Corps manages dam systems throughout the river basin. It extends 19,000 square miles across Georgia, Alabama and Florida. The proposed recommendations would reflect regional growth and development. **But Graham says the new plans wouldn't protect the Apalachicola Bay.**

A

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

"It's time for the Army Corps to consider what is one of the most precious and important resources we have in the state of Florida. Not only from an economic standpoint and for the oyster industry but from a heritage standpoint," she said."

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Situated between the River Basin and the Gulf of Mexico, the Apalachicola Bay is an ecologically diverse and sensitive area. Apalachicola Riverkeeper Dan Tonsmeire says it's the most diverse river



system in North America. But the system is struggling due to increased salinity and decreased water flow.

"...1300 plants, forty reptiles, in different species. Those things become so stressed during a drought. During a natural drought, there are normal occurrences, but when we start lowering the flows lower than they've ever been, we can get to this sort of tipping point," he said. For decades, Florida and Georgia have fought over water rights. With Atlanta's booming metropolitan area comes growing water needs, and less water flowing downriver. Graham says that's where the system breaks down. "The failure of the natural flow of freshwater has increased the salinity in the bay. And that delicate mixture of salt and freshwater is what oysters need to grow," she said.

B

Graham says the bay is a vital ecosystem and a point of pride for North Floridians. She hopes the Corps will update plans to reflect the needs of those living downstream.

As an Atlanta resident, I believe we need to do this as well. We need to develop:

"...a solution that's in the best interest of the entire ecosystem, from Atlanta flowing down through Georgia and Alabama into Florida and into the Gulf of Mexico. We all should be interested in and consider the importance of having a healthy ecosystem," Graham said.

**My family has been visiting the Apalaciicola area for the last 16 years for our annual to bi-annual family vacations on St. George Island. As an Atlanta resident who loves the Apalachiicola area for its "Old Florida" charm, hospitality, and rich biological wealth, *this spectacular part of our natural world is one of the richest, most diverse eco-systems in the world.* I have witnessed through the years the decline of the oyster and fishery industries in Apalachiicola. When we first started visiting in 1999, the shore along 98 in Eastpoint, as we approached SGI, and in Apalachicola, held a vast number of vibrant oyster and locally-caught fish businesses. These were business that we visited and purchased oysters and fish! Through the years since the droughts that have hit this region hard from 1999 to 2012, we have watched them - one by one - close their doors. On my last visit there on 10/22/15 to 10/25/15 to Bald Point, just east of Apalachiicola, I was shocked to realize that now, nearly ALL of these oyster businesses are shuttered and dilapidated, almost ALL closed to business. The same holds true for many of the local fish shops in Eastpoint and Apalachicola.**

C

Therefore I am writing you to submit my [Public input](#) regarding the Corps' draft Environmental Impact Statement. The time to address this depletion of resources and livelihoods to area residents is critical! I know that Georgia and Florida have fought for years over water rights. Georgia, quite frankly, uses TOO MUCH, and should be more sensitive to the needs of Florida's citizens, ecosystems and rich wildlife and diversity that this water is CRITICAL to their way of life. A way of life for an entire region may not survive without public intervention into the Corps' management of the water in this river system, specifically the Corps' management of the quantity and timing of the flow of freshwater from the Apalachicola River and to its Bay. I do not believe that Atlanta should have more

D

#### Response to ACF056 – Lori Smith

- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- C. The economic, social, and cultural resource effects associated with the Master WCM update alternatives are presented in section 6.6 through 6.8 of the EIS. The USACE PAA would have little to no effect on flow and water quality conditions in the Apalachicola River downstream of Jim Woodruff Lock and Dam compared to the NAA (current reservoir operations). Accordingly, the PAA is not expected to cause a change in Apalachicola Bay ecological or socioeconomic resources compared to current operations.
- D. Managing and regulating water supply withdrawal is a responsibility generally left to the states. Under the Water Supply Act of 1958, the State of Georgia has requested that USACE consider reallocating a portion of the conservation storage in Lake Lanier to meet future water supply storage needs. USACE has considered various alternatives to address the state's request, including "no action" to reallocate storage, reflected in the NAA and several other alternatives. Model simulation of the proposed reallocation of Lake Lanier conservation storage for water supply, as included in the PAA in the final EIS, found that flow conditions in the Apalachicola River downstream of Jim Woodruff Lock and Dam and continuing to the bay would be essentially the same as the NAA (see section 6.1.1.2.5 of the EIS).

Conservation storage in Lake Lanier, West Point Lake, and Walter F. George Lake is used to support several project purposes—such as hydroelectric power, navigation, and fish and wildlife conservation—without specifically allocating reservoir storage to any one of them. To reallocate a specific amount of storage in one or more of the ACF storage reservoirs from conservation storage to fish and wildlife conservation would require investigations that are outside the scope of the Master WCM update process. The fish and wildlife conservation project purpose applies directly to lands and waters associated with the USACE reservoirs. Under the current ACF Basin reservoir project authorizations, USACE is not required or authorized to provide reservoir releases specifically to benefit fish and wildlife resources or to improve habitat conditions in Apalachicola Bay, except as might be necessary to address the adverse effects of project operations on federally listed endangered or threatened species downstream of Jim Woodruff Lock and Dam.

water usage rights than Alabama or Florida/Apalachicola, making sure that fair and equal consideration is given to the suffering needs of the Gulf oyster and fishery industries.

*I take this as a rare opportunity and my best chance, as an individual concerned about the welfare of Apalachicola River and Bay, to influence the Corps' management of the freshwater flows to the Apalachicola Bay. We need a COLLECTIVE EFFORT to ensure that all of the river basin's riparian communities, and the plants, animals, marine life, and the fishing industry are still here in the future! The economy in our riparian counties depends on the health of our river. The Apalachicola River and Bay is the last ecosystem of its kind...anywhere, making this so much more than "a local issue." As a national resource, the Apalachicola Basin is an ecological and cultural treasure.*

The river's floodplain is the biological factory that fuels the productivity of Apalachicola Bay. Today, because the Corps management of the river system's dams and reservoirs prioritizes all other authorized uses of the river's water over the conservation, preservation and long-term sustainability of the ecosystem itself, the Apalachicola River receives less and less freshwater and we are losing the ecological functions of the Apalachicola's Floodplain and Bay. Therefore *The Corp of Engineers **must give fair and equal consideration** to Fish and Wildlife Conservation in the Apalachicola ecosystem as they do the other authorized purposes of the ACF river system. The ecological purpose of this water system must have as much importance as other uses of the system and it must be given its fair share of propriety and preservation.*

E

**Thank you for this opportunity to submit my comments, and I do hope you give the Apalachicola River and Bay System due consideration.**

Regards,

Lori M. Smith

[Response to ACF056 – Lori Smith](#)

[E. See response to comment A.](#)

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**From:** Kit Dunlap  
**Sent:** Monday, November 16, 2015 3:09 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Comment on ACF WCM EIS

**The Greater Hall Chamber of Commerce and its 1450 members support the ACF Water Control Manual draft . We have examined the draft proposal careful and feel like it is a balanced manual showing current and future drinking water needs / uses...in the metro Atlanta area (which includes our area). This balanced approach will not have downstream adverse impacts. It shows that the level of Lake Lanier can be managed to stay at optimal levels during non-drought years.**

A

A. Comment noted.

Kit Dunlap

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**From:** Gayle Mail  
**Sent:** Monday, November 09, 2015 3:57 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Water management plan

I attended the public meeting at Eastpoint, Florida today. I spoke with several staff and found them helpful.

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I find it alarming that ACE is allowed to disregard the biological health of Apalachicola Bay! I believe you do have the discretionary latitude to treat this as the continuous and connected system that it is, including the bay, and it is a deliberately narrow reading of your mandate to behave otherwise.

A

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I will actively support changes in your legal directive to make that irrefutable to you. I very much want you to treat the ecological health of the entire system as important as every other management goal.

B

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Gayle Muenchow

Sent from my iPhone

#### Response to ACF058 – Gayle Muenchow

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

## Response to ACF059 – Diane Oswald

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**From:** on behalf of dianne oswald  
**Sent:** Saturday, November 21, 2015 10:23 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Comment re: Apalachicola River

Dear Commander:

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I am a lifelong citizen of Jackson County, Fl. My family settled in Florida via this river, and we have enjoyed the benefits of the river and bay for over 200 years. We are concerned about the health, productivity and sustainability of the Apalachicola River, Floodplain, Bay and the Gulf, which are critical to our economy and cultural heritage.

A

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The Corps must give fair and equal consideration to Fish and Wildlife Conservation in the Apalachicola ecosystem as they do the other authorized purposes of the ACF river system. Without the life-giving nutrients of the river, the bay's fish, shellfish, and dependent wildlife will perish.

B

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Thank you.

Dianne Oswald

- A. The economic, social, and cultural resource effects associated with the Master WCM update alternatives are presented in section 6.6 through 6.8 of the EIS. The USACE PAA would have little to no effect on flow and water quality conditions in the Apalachicola River downstream of Jim Woodruff Lock and Dam compared to the NAA (current reservoir operations). Accordingly, the PAA is not expected to cause a change in Apalachicola Bay ecological or socioeconomic resources compared to current operations.
- B. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

## Response to ACF060 – Christina Burtchael Manning

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**From:** Christina Manning  
**Sent:** Monday, November 02, 2015 9:31 AM  
**To:** ACF-WCM  
**Cc:**  
**Subject:** [EXTERNAL] Comments on Draft EIS

Dear Commander,

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In the DEIS, your finding\* noted below is incorrect. The Apalachicola Bay estuary has NOT remained a productive ecosystem, and there is clear evidence as to the decline in productivity and health of the Bay.

A

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In 1827 my ancestor, John Lee Williams, wrote in A View of West Florida about the "extensive oyster bars, covered with excellent flavoured oysters" in Apalachicola Bay. The delicate ecological balance which has provided food and work for so many for more than 200 years is at severe risk, but can be ameliorated by your Corps of Engineers. PLEASE revise the way you manage the flow of freshwater needed to maintain this precious resource.

B

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I am a Florida native living in California, but will come back in the spring, hoping to find that the Corps is responsive and proactive in making the necessary changes.

Sincerely,  
 Christina Burtchael Manning

\*14 Apalachicola Bay estuary faces a variety of anthropogenic pressures. Amid that pressure, even with 15 variable system conditions, the estuary has generally remained a productive estuarine ecosystem. The 16 PAA for update of the Master WCM would likely have negligible effect on the aquatic resources and 17 ecological function of the Apalachicola Bay estuary. Review of HEC-ResSim model outputs for flow on 18 the Apalachicola River at Chattahoochee and Blountstown indicate that the PAA would have little effect 19 on the flow regime in the river at those locations and, consequently, little effect on inflow to the 20 Apalachicola Bay estuary compared to the NAA. Therefore, the PAA, or any of the other alternatives, 21 would be expected to have a negligible incremental effect on the hydrodynamic regime, aquatic resources, 22 and ecological function of the Apalachicola Bay estuary compared to the NAA. Any negligible changes to 23 hydrodynamic conditions in the bay that would occur under the PAA would most likely be 24 inconsequential compared to the cumulative effects of anticipated sea level rise on physical and 25 ecological conditions in the estuary.

- A. The purpose of the Master WCM update and EIS is to evaluate and compare alternative plans to update project operations in the ACF Basin to improve upon current operations (i.e., the NAA). The NAA reflects current reservoir operations as they have evolved over time in response to laws, regulations, policy, and new technical information. Basing the NAA for the ACF Basin on a pre-NEPA 1958 WCM or a predam condition to assess the effects of alternative WCM update plans would neither accurately reflect current baseline operations nor be consistent with "no action" as defined in the Council on Environmental Quality's memorandum of March 23, 1981, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*. The EIS considered direct, secondary, and cumulative impacts and indicates that there would be essentially no incremental effect on the Apalachicola River and Bay as a result of the PAA as compared to the NAA.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF061 – Jim McClellan

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**From:** Jim McClellan  
**Sent:** Monday, November 09, 2015 9:19 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] EIS - Apalachicola River

To the Officers and Leadership of the Mobile District:

You guys have a chance to fix a system that is broken. I recognize that you have plenty of legitimate excuses for why it can't be done, but that's a lazy bureaucrat mindset. I expect highly motivated, professional soldiers and civilian administrators to find a way to do the right thing in spite of the obstacles in front of them. Make this veteran proud and use the Environmental Impact Statement as the foundation to begin the process of restoring fair and equitable flows to the Apalachicola River, its floodplain and the Bay.

A

You can do this and a lot of people are counting on you.

Thank you,

Jim McClellan

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF062 – Caroline Weiler

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**From:** CAROLINE WEILER  
**Sent:** Monday, November 09, 2015 7:24 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] EIS/Apalachicola River

This is an opportunity to make compromise the way of problem solving for the future. It is happening all over the globe. Hop on board.

Use your power for good. It can be a win/win. Some water for those upriver, enough for those at the end of the line when needed to sustain a world heritage site. This estuary is immensely important for too many to mention here. This is a tipping point. Please don't let your decisions add one more water fight over the edge of no return. We can work together, just believe and act accordingly.

A

Thank you for your careful attention to this life changing, human and natural, issue.  
 Caroline Weiler/Apalachicola

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.



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**From:** Robin  
**Sent:** Monday, November 09, 2015 12:25 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] In lieu of Nov 9 Franklin County public comment session...

I am unable to attend the public meeting, so would like to offer my comments here instead.

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I am very concerned that relevant government agencies not neglect the needs of the citizens of Franklin County and the fragile, irreplaceable coastal ecosystem in future planning involving the Apalachicola and other up-river basins.

A

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Our family has had a home in the area since 1938, and know how unique and precious this area and people are. They have taken a huge beating with the BP oil spill, and sufficient water flow is critical to the health of the ecosystem including it's people . Please do not forget the Forgotten Coast now.

B

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Robin McCallister

Sent from my iPad

#### Response to ACF063 – Robin McCallister

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. The economic, social, and cultural resource effects associated with the Master WCM update alternatives are presented in section 6.6 through 6.8 of the EIS. The USACE PAA would have little to no effect on flow and water quality conditions in the Apalachicola River downstream of Jim Woodruff Lock and Dam compared to the NAA (current reservoir operations). Accordingly, the PAA is not expected to cause a change in Apalachicola Bay ecological or socioeconomic resources compared to current operations.

## Response to ACF064 – Douglas Owen

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**From:** Douglas Owen  
**Sent:** Tuesday, November 03, 2015 8:40 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Input on Draft EIS / Apalachicola-Chattahoochee-Flint (ACF) river system

Dear Sir or Madam,

The plight of the Apalachicola River and its Bay reached my attention here in France. I am an American whose roots are in the south, and whose love of the outdoors, kayaking and oysters I am passing to my 11 year old son. When visiting Florida, I see the effect in other parts of the state of less than rigorous preservation of ecosystems.

It is in the power of the Corps of Engineers to recognize the loss of ecological functions of Apalachicola's Floodplain and act to assure that freshwater flow is a priority for fish and wildlife.

Thank you for your consideration.

Douglas Owen  
 Paris, France

A

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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**From:** Virginia Satterfield  
**Sent:** Sunday, November 08, 2015 10:11 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Please protect our Fish and Wildlife heritage!!

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High at the top of your priority list MUST BE the protection of our Fish and Wildlife heritage along the Apalachicola River and its tributaries. You have other things to consider, but this river is and has always been, so critical and important to the natural and cultural heritage of our area.

A

My family has been in North Florida since before it was a territory of the USA. How can we tell our children and grandchildren that a branch acting on behalf of the USA is now going to destroy what is a genuine treasure and so important to protection of fisheries and critical maintenance of the plants and animals we cherish. What will you tell them if you destroy them???

B

Please put conservation FIRST and work out the rest afterward. There are many solutions for manmade problems, but you will not be able to manage or to reinvent the natural life of the River System.

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Be smart; be wise; preserve our heritage.

#### Response to ACF065 – Virginia Satterfield

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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**From:** Barbara Rutherford  
**Sent:** Sunday, November 08, 2015 3:32 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Revised Water Control Manual for Apalachicola River System

Dear Commander of U.S. Army Corps of Engineers:

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I am asking that you please revise your Water Control Manual to allow more fresh water to flow into the Apalachicola River system as the Apalachicola Bay depends on this freshwater to stabilize the increasing salinity of the water in order to maintain life for fish, shrimp, oysters, marine life, plants and animals, including the viability of the fishing industry which is already dying for want of fresh water. A

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This floodplain is a natural and beautiful resource of Northwest Florida and as such, requires protection and help from the Corps of Engineers if it is going to remain viable for future generations to enjoy. Moreover, I fear that without your help and without a water control revision, this beautiful ecosystem will perish. I also feel that this Apalachicola ecosystem is a lot more fragile and in need of freshwater than the thirsty super-green, over fertilized lawns of Atlanta, Ga. B

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Thank you for doing the right thing and revising the ACF Work Plan.

Sincerely,  
 Barbara Rutherford-Dorris

#### Response to ACF066 – Barbara Rutherford-Dorris

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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**From:** Lydia Countryman  
**Sent:** Monday, November 09, 2015 6:48 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] SAVE THE APALACHICOLA BAY

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PLEASE HELP UP PROTECT GOD'S BOUNTIFUL BEAUTY!!!

The health, productivity and sustainability of the Apalachicola River/Floodplain, Bay and the Gulf are CRITICAL to our economy and cultural heritage; not to mention GOD's PRECIOUS GIFT to us all. The Corp of Engineers MUST give FAIR and EQUAL consideration to Fish and Wildlife Conservation in the Apalachicola ecosystem as they do the other authorized purposes of the ACF River System.

A

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There's too much to loose if we are not careful in our consideration to what is happening to the Apalachicola Bay Area. PLEASE make CAREFUL considerations in the preservation of this beautiful and what once was bountiful and productive area.

---

B

Thank you  
 Lydia Countryman  
 St George Island, Florida

#### Response to ACF067 – Lydia Countryman

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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**From:** Dave Dorris  
**Sent:** Sunday, November 08, 2015 4:06 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Subject: Revised Water Control Manual for Apalachicola River System

Dear Commander of U.S. Army Corps of Engineers:

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I am asking that you please revise your Water Control Manual to allow more fresh water to flow into the Apalachicola River system as the Apalachicola Bay depends on this freshwater to stabilize the increasing salinity of the water in order to maintain life for fish, shrimp, oysters, marine life, plants and animals, including the viability of the fishing industry which is already dying for want of fresh water. This floodplain is a natural and beautiful resource of Northwest Florida and as such, requires protection and help from the Corps of Engineers if it is going to remain viable for future generations to enjoy. Moreover, I fear that without your help and without a water control revision, this beautiful ecosystem will perish. I also feel that this Apalachicola ecosystem is a lot more fragile and in need of freshwater than the thirsty super-green, over fertilized lawns of Atlanta, Ga.

---

Thank you for doing the right thing and revising the ACF Work Plan.

#### Response to ACF068 – Dave Dorris

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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**From:** Kathryn Sherlock  
**Sent:** Monday, November 09, 2015 2:14 PM  
**To:** ACF-WCM  
**Cc:** Vivian Sherlock; Mike Sherlock; Ellen Amatea; Leila Jackson  
**Subject:** [EXTERNAL] U.S. Army Corps of Engineers - Last hearing re water flow of the ACF today in East Point, FL

To: Commander  
 U.S. Army Corps of Engineers  
 Mobile District  
 ATTN: PD-EI (ACF-WCM@usace.army.mil.

Dear Sirs:

I am writing to express my concern about the future sustainability of the ecosystems of the Apalachicola River, floodplain, Bay and the Gulf. This unique water-based environment is fragile but critical to our economy, our cultural heritage, and most important, to the survival of the multitude of life forms - plants, sea life, birds, panthers, etc. who have flourished here for centuries. As I learned growing up in Apalachicola, the Apalachicola River Basin is an ecological and cultural treasure!

---

I now hear that the U.S. Army Corps of Engineers is updating its operating manual for the Apalachicola-Chattahoochee-Flint (ACF) river system - the river system that Apalachicola Bay depends on for freshwater and nutrients to stay healthy and productive. The Corps of Engineers last updated its ACF Master Water Control Manual in 1958.

A

Today, because the Corps' management of the river system's dams and reservoirs prioritizes all other authorized uses of the river's water over the conservation, preservation and long-term sustainability of the ecosystem itself, the Apalachicola River receives less and less freshwater, and we are losing the ecological functions of the Apalachicola's Floodplain and Bay.

Since 1958, several factors- including increased population and large agricultural irrigation operations have contributed to a decline in the productivity of Apalachicola Bay. This decline has become quite obvious, especially since the extinction of the the crab industry and then the failure of the oyster crop.

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The U.S. Army Corps of Engineers must give fair and equal consideration to Fish and Wildlife Conservation in the Apalachicola ecosystem as they do the other authorized purposes of the ACF river system. It is imperative that the Corps' rewrite of its manual changes the way it manages the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem. We need a higher level of water flow for the ecosystem to survive.

B

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I urge the Army Corps of Engineers to produce an authentic Environmental Impact Study and consequently, the operation guidance which addresses the larger ecological impact of their water control procedures.

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Thank you for considering my request.

Sincerely,

Kathryn C. ("Kitty") Sherlock, Ph.D.

A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

B. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

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**From:** Bill Browder  
**Sent:** Tuesday, December 08, 2015 7:17 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] ACF water management

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We,re for raising the water level on Lake Lanier to 1072 than spending money to create Glades Reservoir. With the level problems on Lanier, it's rarely at full pool now on a consistent time line.

A

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Have lived on Lanier for over 20 years and the yo-yo effect of the level has cause severe destruction due to silt issues when heavy rains come on bare banks or huge drops are done for down stream that are not justified.

B

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Florida is wasting water to protect their seafood industry, at our expense.

C

Bill & Jane Browder  
 Gainesville, GA

Sent from my iPad

#### Response to ACF070 – Bill and Jane Browder

- A. As stated in section 4.1.1, the Master WCM update is being conducted to determine how the federal projects in the ACF Basin should be operated for their authorized purposes, in light of current conditions and applicable laws. Raising the top of the conservation pool at Lake Lanier would require reallocating storage from the flood control pool and would adversely affect level of flood risk management provided by the project. One of the screening criteria described in draft EIS section 1.4.4 was to maintain at least the current level of flood risk management. Accordingly, raising the conservation pool at Lake Lanier by 2 ft would not meet this criterion and was not carried forward. In accordance with the GAEPD letter dated January 29, 2016, Hall County's certification of need for water supply from Glades Reservoir has been rescinded. Accordingly, USACE has revised the water supply options presented in the final EIS to exclude Glades Reservoir as a reasonably foreseeable action with regard to water supply.
- B. The Buford Dam/Lake Lanier project is a multipurpose reservoir authorized by Congress that was designed to fulfill several authorized purposes. Congress approved a conservation pool that allowed for large changes in elevation. The reservoir receives a varying inflow from the Chattahoochee River and its tributaries upstream of Buford Dam, and varying amounts of water are released during the day, months, and years to serve the multiple authorized water resource needs both within Lake Lanier (e.g., water supply, recreation) and downstream (e.g., flood risk management, hydropower and water supply). As a result of the varying inflows and amounts of water released to support the various authorized purposes, the water surface elevation of Lake Lanier fluctuates. During drier times of the year or drier years, lake levels could decline, exposing unvegetated banks that might erode. Planning for the project accounted for the possibility of erosion and provided storage within the reservoir to accommodate the resulting sediment.
- C. Under section 7 of the Endangered Species Act, USACE consults with the USFWS regarding the effects of existing operations at Jim Woodruff Lock and Dam and releases to the Apalachicola River on federally listed threatened and endangered species and federally designated critical habitat. These consultations developed minimum flow provisions for Jim Woodruff Lock and Dam as part of the overall plan established to avoid and minimize impacts on the listed species. Marine life in Apalachicola Bay might incidentally benefit from these minimum releases, but USACE does not make releases from its reservoirs specifically in support of the seafood industry of Apalachicola Bay.



## Response to ACF071 – Lisa Baker

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**From:** Lisa Baker  
**Sent:** Saturday, December 05, 2015 7:28 PM  
**To:** ACF-WCM  
**Cc:** Lisa Baker  
**Subject:** [EXTERNAL] Apalachicola, FL

Dear Commander,

The health, productivity and sustainability of the Apalachicola River, Floodplain, Bay and the Gulf are critical to our economy and cultural heritage! The Corps **MUST** give fair and equal consideration to FISH and WILDLIFE Conservation in the Apalachicola ecosystem as they do the other authorized purposes of the ACF river system.

A

This is an area that is naturally beautiful. It is also sustains the livelihood of many people who rely on the oyster fishing industry.

Regards,

Lisa Baker

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

## Response to ACF072 – Phyllis Kienzle

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**From:** P. Kienzle  
**Sent:** Sunday, December 06, 2015 10:32 AM  
**To:** ACF-WCM  
**Cc:** pkienzle1@tampabay.rr.com  
**Subject:** [EXTERNAL] Apalachicola, FL

Dear Commander,

The health, productivity and sustainability of the Apalachicola River, Floodplain, Bay and the Gulf are critical to our economy and cultural heritage! The Corps MUST give fair and equal consideration to FISH and WILDLIFE Conservation in the Apalachicola ecosystem as they do the other authorized purposes of the ACF river system.

A

Regards,

Phyllis Kienzle

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

**From:** Marlene Rhodes  
**Sent:** Wednesday, December 16, 2015 1:37 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Water Control Manual update

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

A

1) raise WPL's winter pool to 632.5 and 2) incorporate recommendation from the ACF's Sustainable Water Management Plan into the Corps' operations.

B



Marlene B. Rhodes



[RenasantBank.com](http://RenasantBank.com) [Open an Account](#) [Renasant Email Disclaimer](#)

#### Response to ACF073 – Marlene Rhodes

- A. Flood risk management at West Point Lake is an authorized purpose. Raising the winter pool at West Point Lake would reduce the seasonal flood storage and increase the risk of flooding downstream. This suggestion is not consistent with the screening criteria (see draft EIS section 1.4.4) that any alternative considered by USACE should not increase flood risk above the current level.
- B. The ACF Stakeholder's sustainable water management plan (SWMP) was received by USACE in early June 2015. USACE received the report and its recommendations too late to be fully evaluated and considered in the draft EIS. Further, the SWMP, as initially submitted to USACE, did not include the necessary supporting technical documentation and underlying assumptions to fully evaluate the recommended management measures. The SWMP recommendations were considered to the extent possible in the final EIS.

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**From:** John Moran  
**Sent:** Thursday, December 17, 2015 10:54 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Public comment on EIS No. 20150278  
**Attachments:** Moran comment for Corps ACF.docx

Novemeber 9<sup>th</sup>, 2015

Commander  
 U.S. Army Corps of Engineers  
 Mobile District  
 Attn: PD-EI (ACF-DEIS)  
 P.O. Box 2288  
 Mobile, AL 36628

John Moran

Dear U.S. Army Corps of Engineers,

Please find two comments bellowing regarding the draft Environmental Impact Statement for updates to the ACF River Basin Water Control Manual.

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My present dissertation research in cultural anthropology concerns cultural and natural heritage in Franklin and Wakulla, Counties, Florida, including ecotourism and oystering in Apalachicola Bay. My assessment is that the draft EIS undervalues the cultural and socio-economic significance of the Bay and its dependency on water flow. By treating the oystermen of Eastpoint and Apalachicola as solely a commercial fishery, rather than attempting to assess the historic, cultural claims to water flow by multiple generations of oystermen in Eastpoint, this statement does little to recognize a marginalized population's unique and rare dependency on an environmental resource.

A

Thank you for all the work in putting together this comprehensive assessment.

---

- A. Section 2.1.1.1.8 of the EIS highlights the socioeconomic importance of the Apalachicola Bay ecosystem from a recreation and tourism perspective. Section 2.5.3.3 notes the cultural and socioeconomic significance of the bay from a commercial fishing perspective. Both EIS sections recognize freshwater inflow as an important influence on the bay ecosystem. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, USACE must consider the impacts of its water management activities on all affected resources in the ACF Basin. The EIS analysis indicates that the PAA would result in little or no change to flow conditions downstream of Jim Woodruff Lock and Dam compared to the NAA (which reflects current reservoir operations). USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

Section 2.5.3.3.

Description of Apalachicola Bay, while comprehensive, should highlight the sociological and ecological significance of the site on a global scale. Apalachicola Bay is designated as a UNESCO Man in the Biosphere reserve. Native oyster reefs are in global peril and over the last two centuries, 90% of native oyster reefs have become functionally extinct, as was reported in the journal *BioScience* in 2011.<sup>[1]</sup> That same report, before the BP oil spill, looked to the Gulf of Mexico as the last remaining region globally for sustainable harvest from native oyster reefs; we know that Apalachicola's situation is even more rare considering the subsequent damage. Oysters, particularly in the Pacific Northwest, are heavily threatened by ocean acidification, suggesting that in the coming decades harvest from native reefs in the Bay will likely be even more culturally and ecologically rare and prized.

B

## Response to ACF074 – John Moran

- B. The comment provides some pertinent information and reference material as additional documentation regarding the sociological and ecological significance of the Apalachicola Bay area. Pertinent material from the comment has been incorporated into section 2.5.3.3 and section 2.6 of the final EIS.

Section 6.5.8

The threat of collapse of the oyster industry is an environmental justice issue in Eastpoint, qualifying under low-income community. The oystermen of Eastpoint and Apalachicola are widely recognized in Florida by journalists, travel writers, authors, and social science researchers as a distinct cultural group. This increasingly low-income, often multi-generational population of resource users also relies on subsistence to supplement their diets. The oystermen are facing suicide, homelessness, drug addiction, and other social ills related to resource disaster in the Apalachicola Bay. Some of the oystermen have indigenous heritage. Other oystermen are illiterate and have limited schooling. Professional oral historians, such as Amy Evans for the Southern Foodways Alliance at the University of Mississippi, have documented this unique cultural heritage, including the local invention and manufacture of tongs, the local ecological knowledge of the community, and the transmission of this knowledge across multiple generations, leading back to the first wave of settlers in the community. Based on my training in environmental justice literature at Stanford University's Department of Anthropology, I testify that the oystermen population in Eastpoint are a low-income community whose economic and social health is totally inseparable from the Apalachicola Bay. The need of their community for a functioning estuary must be considered and assessed through an environmental justice framework using quantitative and qualitative data at the municipal, rather than regional, level.

C

- C. Pertinent information from this comment has been incorporated into the environmental justice discussion in the EIS (in sections 2.6.10 and 6.6.8). The EIS indicates that implementing the PAA would have no effect on the Apalachicola Bay ecosystem and commercial fishing/oyster harvesting activities as compared to the NAA. Accordingly, the PAA would not be expected to have an incremental adverse effect on the community.

Thank you,

John Moran

PhD candidate

Department of Anthropology

Stanford University

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[\[1\]](#) Beck, Michael W., Robert D. Brumbaugh, Laura Airoidi, Alvar Carranza, Loren D. Coen, Christine Crawford, Omar Defeo et al. "Oyster reefs at risk and recommendations for conservation, restoration, and management." *Bioscience* 61, no. 2 (2011): 107-116.



**Eufaula Barbour Chamber of Commerce**

Response to ACF075 – Sallie Garrison, Eufaula-Barbour County Chamber of Commerce

December 18, 2015

Commander, Mobile District  
U.S. Army Corps of Engineers  
Attn: PD-EI (ACF-DEIS)  
P.O. Box 2288  
Mobile, AL 36628

Dear Commander,

Please find enclosed a resolution passed by the Eufaula Barbour County Chamber of Commerce Board of Directors on December 15, 2015. Our organization encourages and requests the U.S. Army Corps of Engineers establish flow targets for the middle and lower Chattahoochee River. Currently, these targets are not included in the proposed Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin. The river basin is hugely important to our community with extensive economic impacts. We hope you will consider setting these targets to avoid possible adverse situations in the future.

Most appreciated,

Sallie Garrison  
Executive Director

cc: Billy V. Houston, Executive Director  
Tri Rivers Waterways

333 East Broad Street • Eufaula, Alabama 36027  
Phone: 334.687.6664 • Fax: 334.687.5240 • Visitor Information: 800.524.7520 • [www.eufaulachamber.com](http://www.eufaulachamber.com)

## RESOLUTION 03-2015

**A RESOLUTION BY THE EUFAULA BARBOUR COUNTY CHAMBER OF COMMERCE ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND LOWER CHATTAHOOCHEE RIVER.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin for purposes including flood control, hydropower production, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

A

Response to ACF075 – Sallie Garrison, Eufaula-Barbour County Chamber of Commerce

A. Comment noted.



**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

A

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY THE EUFAULA BARBOUR COUNTRY CHAMBER OF COMMERCE** that the U.S. Army Corps of Engineers is encouraged and requested:

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(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

B

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(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

C

#### Response to ACF075 – Sallie Garrison, Eufaula-Barbour County Chamber of Commerce

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, or inflow, whichever is less” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.

**ADOPTED**, this 15<sup>th</sup> day of December, 2015, by the Eufaula Barbour County Chamber Board of Directors, by unanimous vote.



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**Ed Richardson, Board President**

**ATTEST:**



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**Sallie Garrison, Executive Director**



# Apalachee Audubon Society

P.O. Box 1237, Tallahassee, Florida 32302-1237

## Mission Statement

*Protection of the environment through education, appreciation, and conservation*

December 11, 2015

Col. Jon J. Chytka  
Commander  
U.S. Army Corps of Engineers, Mobile District  
Attn: PD-EI (ACF-DEIS)  
P.O. Box 2288  
Mobile, AL 36628

Re: Draft Environmental Impact Statement for Updated Water Control Manuals for the  
Apalachicola-Chattahoochee-Flint River Basin

Dear Colonel Chytka,

On behalf of the Apalachee Audubon Society, I am submitting these comments in response to the October 2, 2015 public notice concerning the U.S. Army Corps of Engineers (Corps) Draft Environmental Impact Statement (EIS) for Updated Water Control Manuals for the Apalachicola-Chattahoochee-Flint River (ACF) Basin. The Apalachee Audubon Society is a non-profit conservation organization consisting of more than 900 members dedicated to protecting the environment through education, appreciation, and conservation. Our comments focus on the impact of the Corps plan on important bird colonies which utilize Apalachicola Bay as a feeding ground. It is our hope that you will evaluate the entire range of impacts your plan has on the Greater Apalachicola Bay and consider the full suite of authorized purposes for the entire ACF system, including fish and wildlife conservation.

### Introduction

As the draft statement acknowledges, historically, Apalachicola Bay has been "one of the most productive estuaries in the Northern Hemisphere" and is "one of the most important bird habitats in southeastern United States."<sup>1</sup> Indeed, the National Audubon has designated Greater Apalachicola Bay as an Important Bird Area (IBA) because of its importance to breeding and wintering coastal waterbirds.<sup>2</sup>

<sup>1</sup> EIS, p. 2-205.

<sup>2</sup> BirdLife International is a global coalition of more than 100 country partner organizations which has initiated the Important Bird Areas Program worldwide. As the United States Partner of BirdLife International, the National

- A. Potential adverse effects on hydrodynamic and ecological conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA. Consequently, adverse effects on coastal bird colonies and other wildlife are not expected.

There can be no doubt that the Corps' withholding of fresh water is adversely affecting the ecological health of Apalachicola Bay. We find it shocking that in a draft 794-page "environmental impact statement" there is no discussion of the impact of the Corps policies on birds and other wildlife that are dependent on the Bay's continued productivity. We realize that this is not an oversight, but a result of the Corps' decision to only consider options which do not evaluate or meet the ecological flow needs of the Apalachicola River and Bay. Seven alternatives were examined – all of them equally bad, in terms of restoring the Bay to ecological health.

A

Furthermore, the analysis of impacts in the EIS has been improperly restricted by opting to compare the impacts of alternative management regimes only to the presumed health of the ACF Rivers as of 1989, despite the long-term and significant adverse impacts caused by the construction and operation of the ACF system prior to that date. To properly analyze the impacts of the proposed Water Control Manual alternatives, the Corps must define and utilize the historical flow conditions (pre-ACF and pre-non-Federal dams and reservoirs) of the Apalachicola, Chattahoochee, and Flint rivers, with particular attention to the historical flow regime of the Apalachicola River.

B

C

We believe the Corps is required to manage the ACF system in a manner that protects and restores the health of fish and wildlife populations and the ecological health of the Apalachicola River and Bay. A management regime that restores and maintains ecological flows will meet these requirements, protect a national ecological treasure, and support a vibrant economy. Ecological flows are the instream flows needed to: (a) support and reestablish the chemical, physical, biological, and overall ecological integrity of the ACF system; (b) support and reestablish a thriving and resilient Apalachicola River, Apalachicola River floodplain, and Apalachicola Bay; and (c) restore and recover species that are endangered, threatened, or at risk. It is imperative that the Environmental Impact Statement address these ecological flows and select an alternative that will ensure that those flows are established and protected..

D

#### The Impacts on Coastal Waterbirds

We are particularly concerned about the impact of the Corps' plan on birds that rely on forage fish as part of their diet. Forage fish – sometimes known as baitfish or prey fish – play a vital role in the marine ecosystem as a food source for coastal birds. These small, nutrient-rich fish are the crucial link between plankton and predators in the ocean food webs. The schooling behavior and relevant abundance of forage fish make them ideal prey for much larger coastal predators such as terns, pelicans, and ospreys. A recent report from Audubon Florida and The Pew Charitable Trusts, "Fins and Feathers", details how declines in the populations of forage fish in Florida's coastal waters could exacerbate declines of seabirds, wading birds, and other fish-eating birds, particularly species of conservation concern such as Least Terns and Black Skimmers.<sup>3</sup> As the number of Florida's seabird and coastal wading bird colony sites has dropped in recent

E

Audubon administers the IBA Program in the U.S.

3 Fins and Feathers: Why Little Fish Are a Big Deal to Florida's Coastal Waterbirds, The Pew Charitable Trusts, January 2014. The report is available online at <http://www.pewtrusts.org/-/media/legacy/uploadedfiles/peg/publications/report/fins20and20feathers20reportpdf/fins-and-feathers-report.pdf>. A copy of the report is attached as Appendix I.

#### Response to ACF076 – Robert Williams, Apalachee Audubon Society

- B. Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) require consideration of the No Action Alternative (NAA) (40 CFR section 1502.14). In the CEQ's memorandum of March 23, 1981, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*, question no. 3 addresses how the NAA is defined depending on the nature of the specific federal action. The response to question no. 3 states, in part:

The first situation might involve an action ... where ongoing programs initiated under existing legislation and regulations will continue, even as new plans are developed. In these cases, "no action" is "no change" from the current management direction or level of management intensity. To construct an alternative that is based on no management at all would be a useless academic exercise. Therefore, the "no action" alternative may be thought of in terms of continuing with the present course of action until that action is changed.

- Consequently, for purposes of the Master WCM update process, the NAA reflects current reservoir operations as they have evolved over time in response to laws, regulations, policy, and new technical information. Basing the NAA for the ACF Basin on a pre-NEPA 1958 WCM or on a predam condition to assess the effects of alternative WCM update plans would neither accurately reflect current baseline operations nor be consistent with "no action" as defined in the referenced CEQ memorandum.
- C. The purpose of the Master WCM update and EIS is to evaluate and compare alternative plans to update project operations in the ACF Basin to improve upon current operations (i.e., the NAA). The NAA reflects current reservoir operations as they have evolved over time in response to laws, regulations, policy, and new technical information. Basing the NAA for the ACF Basin on a pre-NEPA 1958 WCM or a predam condition to assess the effects of alternative WCM update plans would neither accurately reflect current baseline operations nor be consistent with "no action" as defined in the Council on Environmental Quality's memorandum of March 23, 1981, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*. The EIS considered direct, secondary, and cumulative impacts and indicates that there would be essentially no incremental effect on the Apalachicola River and Bay as a result of the PAA as compared to the NAA.
- D. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- E. The comment provided substantial technical information and references on several important coastal bird species that are present in the Apalachicola Bay area. Pertinent updated or additional background information has been incorporated into the final EIS. The EIS indicates that implementation of the PAA would not change hydrodynamic and ecological conditions (including water quality) in Apalachicola Bay compared to the NAA. Thus, the availability of forage fish for coastal birds in the bay area would not be expected to change under the PAA.

decades, protection of the remaining sites such as the breeding colonies in Apalachicola Bay becomes even more important.

It is well-known that changes in the quantity, quality, and timing of freshwater delivery to estuarine systems can adversely affect the abundance of the forage fish on which coastal bird species depend. In 1999, for example, Jerome J. Lorenz, an Audubon researcher at the Tavernier Science Center in Tavernier, Florida, demonstrated that prey fish productivity is related to water levels and salinity (i.e., freshwater flow) in the southern Everglades.<sup>4</sup> In 2013, Lorenz demonstrated the connection between water levels, prey availability and the nesting success of Roseate Spoonbills.<sup>5</sup> Recently, scientists have correlated diminished forage fish availability with declines in seabird productivity across seven ecosystems all over the world.<sup>6</sup>

Professor Robert J. Livingston of the Department of Biological Science at Florida State University has conclusively demonstrated the importance of river flow to the Apalachicola River-Bay system.<sup>7</sup> Nutrient loading from the river creates the conditions for very high phytoplankton productivity that forms the basis for key food webs in the Bay. Zooplankton that feed on the phytoplankton in turn support high numbers of anchovies (*Anchoa mitchilli*) and gulf menhaden (*Brevoortia patronus*) – both critical species for the coastal waterbirds which forage in the Bay. High salinities and reduced nutrient loadings affect these and other important populations of the Apalachicola estuary including oysters, blue crabs, penaeid shrimp and sciaenid fish. Professor Livingston's conclusions are stark – “It is likely that increased frequency and duration of river flow reductions in the future due to water removal by upstream human activities will eventually result in the loss of the Apalachicola resource. This process has already started in the Apalachicola system.” Moreover, climate change “could lead to exacerbation of current reductions of river flow.”<sup>8</sup>

In order to avoid further habitat degradation and to safeguard the prey base on which the coastal birds of Apalachicola Bay depend, the Corps' plan must ensure that sufficient fresh water is reserved to protect the environmental health of the Bay.

Coastal water birds nest at many sites around the Bay as shown by the map below:

4 J.J. Lorenz, “The Response of Fishes to Physicochemical Changes in the Mangroves of Northeast Florida Bay,” *Estuaries* 22 (1999): 500-17.

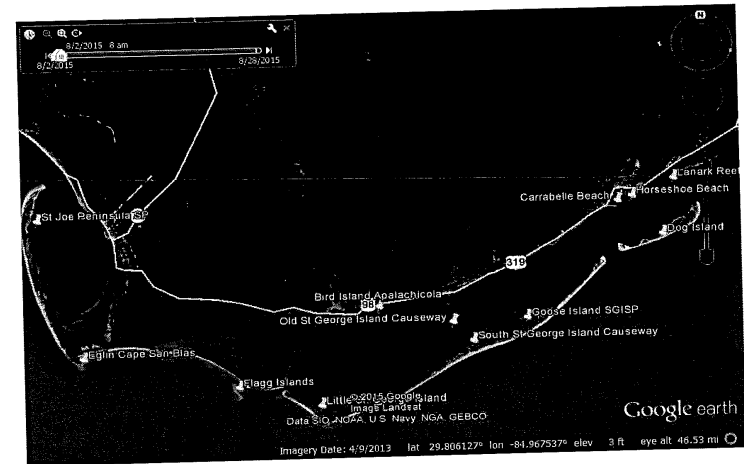
5 J.J. Lorenz, “The Relationship Between Water Level, Prey Availability and Reproductive Success in Roseate Spoonbills Foraging in a Seasonally-Flooded Wetland While Nesting in Florida Bay,” *Wetlands* (2013), doi:10.1/s13157-012-0364-y.

6 Philippe M. Cury et al. “Global Seabird Response to Forage Fish Depletion-- One-third for the Birds” *Science* 334, no. 606 (2011): 1703-06, <http://www.sciencemag.org/content/334/6063/1703.full>.

7 Robert J. Livingston, “Importance of River Flow to the Apalachicola River-Bay System,” Report to the Florida Department of Environmental Protection, September 2008. The report is available online at [http://mayorvanjohnson.com/files/Livingston\\_Report.pdf](http://mayorvanjohnson.com/files/Livingston_Report.pdf).

8 *Id.* at 2.

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Two of the most important breeding colonies are Flag Island and the Old St. George Island Bridge Causeway. Surveys in 2015 on Flag Island recorded 9 pairs of American Oystercatchers, 429 adult Black Skimmers, 29 adult Gull-billed Terns, 19 adult Caspian Terns, 130 adult Royal Terns, 260 adult Sandwich Terns, 377 adult Least Terns, 91 adult Brown Pelicans and 2 adult Laughing Gulls.<sup>9</sup>

In 2004 a new St. George Island Bridge was constructed and the old roadway was disconnected from the causeway, creating a separate island out of the causeway area. This island hosts thousands of birds during the nesting season. In 2015, breeding bird surveys on the Old St. George Island Bridge Causeway reported 39 adult Least Terns, 172 adult Caspian Terns, 820 adult Royal Terns, 300 adult Sandwich Terns, 3 adult Sooty Terns, 6 pairs of American Oystercatchers, 1067 adult Laughing Gulls, and 740 adult Brown Pelicans. The Causeway has been designated a “Critical Wildlife Area” by FWC and signs indicating this designation are placed on the Causeway through nesting season.<sup>10</sup> A number of these species raise serious

9 Personal communication with Bonnie Samuelsen, Project Coordinator, Coastal Bird Stewardship Program, Audubon Florida, based on data from the Florida Shorebird Database, available at <https://public.myfwc.com/crossdoi/shorebirds/index.aspx>

10 Critical Wildlife Areas (CWAs) are established by the FWC under a Florida Administration Code rule to protect important wildlife concentrations from human disturbance during critical periods of their life cycles, such as nesting or migration.

E

conservation concerns as detailed below:

#### *Black Skimmer*

Black Skimmers feed primarily on small fish (2 to 5 inches) supplemented with shrimp. The Black Skimmer's diet is generally less diverse than that of other seabirds. Thus it is more likely affected when some of its major prey species decline than birds which are diet generalists. One study suggests that food supply influences the Skimmer's productivity.<sup>11</sup>

Black Skimmers in Florida are experiencing reduced populations and colony sizes. They have been designated by the Florida Fish and Wildlife Commission (FWC) as a Species of Special Concern (Florida 2015).<sup>12</sup> In 2014, they were placed on the "Watch List" compiled by the North American Bird Conservation Initiative to identify U.S. bird species most in need of conservation action.<sup>13</sup> Black Skimmers are on the "Yellow Watch List"-- species that are either range restricted (small range and population), or are more widespread but with troubling declines and high threats. Although not listed under the Endangered Species Act, Black Skimmers need urgent conservation attention to keep them from becoming threatened or endangered. The Southeast United States Regional Waterbird Conservation Plan identifies Black Skimmers along with Least and Gull-billed Terns as species requiring further conservation action -- "continuing declining population trends and movement of nesting birds away from even those areas with natural resource protection mandates strongly suggests not enough is being done to fully conserve these species..."<sup>14</sup> In November 2015, Gulf Coast Vulnerability Assessment found that the Black Skimmer in the Southern Coastal Plan (including Apalachicola Bay) was "highly vulnerable" to the effects of climate change, sea level rise and land use change.<sup>15</sup>

#### *Least Tern*

Least Terns feed their chicks live fish. Because chicks swallow the fish whole, the parents must

11 R. Michael Erwin, "Black Skimmer Breeding Ecology and Behavior," *Auk* 94 (1977) 709-17.

12 See Black Skimmer Biological Status Review Report, Florida Fish and Wildlife Conservation Commission, March 31, 2011, available online at <http://myfwc.com/media/2273268/Black-Skimmer-BSR.pdf>.

13 Rosenberg, K.V., D. Pashley, B. Andres, P. J. Blancher, G.S. Butcher, W.C. Hunter, D. Mehlman, A.O. Panjabi, M. Parr, G. Wallace, and D. Wiedenfeld. 2014. The State of the Birds 2014 Watch List. North American Bird Conservation Initiative, U.S. Committee. Washington, D.C.

14 W.C. Hunter, W. Golder, S.L. Melvin, and J.A. Wheeler, "Southeast United States Regional Waterbird Conservation Plan," U.S. Fish and Wildlife Service, Atlanta, Georgia (2006) p. 30.

15 Watson, A., J. Reece, B.E. Tirpak, C. K. Edwards, L. Geselbracht, M. Woodrey, M. LaPeyre, and P. S. Dalyander. 2015. The Gulf Coast Vulnerability Assessment: Mangrove, Tidal Emergent Marsh, Barrier Islands, and Oyster Reef. 132 p. Available from: <http://gulfcostprairiecsc.org/science/science-projects/gulf-coast-vulnerability-assessment>. p. 64.

bring tiny fish to younger chicks. Therefore, during chick-rearing time, Least Terns not only need abundant prey but also a variety of prey sizes capable of feeding the adults as well as growing young birds of varying size. A California study has found that reduced prey availability for breeding colonies was related to decreased mean clutch size and chick body weights, increased incidence of egg abandonment, and non-predation chick mortality.<sup>16</sup>

For lack of suitable habitat, 80% of Florida's Least Terns nest on gravel rooftops which are disappearing. Thus it is critical to protect the remaining natural nesting areas. All three subspecies of Least Tern are of conservation concern. The California subspecies and the Interior subspecies are listed as federally endangered; the FWC has designated the Least Tern in Florida as Threatened (Florida 2015).<sup>17</sup>

#### *Gull-billed Tern*

Breeding Gull-billed Terns in Florida experienced an estimated decline in population of 95% from 1975 to 1999. During the middle 1970s the reported number of breeding gull-billed terns in Florida peaked at approximately 534 pairs in 1975. Shortly thereafter, statewide reports of nesting pairs declined precipitously during 1980 to 1989 with the highest number for any year never exceeding 20 breeding pairs or nests. Only 17 breeding pairs were reported in 2000.<sup>18</sup>

The Gull-billed Tern is on the Yellow Watch List. At the federal level this species is included on the U.S. Fish and Wildlife Service's Birds of Conservation Concern (U.S. Fish and Wildlife Service 2002) in three of the seven administrative regions (1, 2, and 4). It is considered a species of high concern in the North American Waterbird Conservation Plan. At the state level it is considered Endangered in Maryland, Threatened in Virginia, North Carolina, and Georgia, and Protected in New York. The species is also a Species of Special Concern or equivalent in South Carolina, Alabama, Louisiana and California.<sup>19</sup>

#### *American Oystercatcher*

Although not a fish eater, the American Oystercatcher as one of the few birds that feeds primarily on marine bivalves is similarly dependent on the ecological health of the Bay. As an obligate coastal species, American Oystercatchers are at risk throughout their range from changing patterns of land use in the coastal zone. The overall population is estimated at only 11,000 individuals in the United States.

16 Jonathan L. Atwood and Paul R. Kelly, "Fish Dropped on Breeding Colonies as Indicators of Least Tern Food Habits," *Wilson Bulletin* 96 (1984): 34-47.

17 See "Biological Status Review for the Least Tern," Florida Fish and Wildlife Conservation Commission, March 31, 2011, available online at <http://myfwc.com/media/2273337/Least-Tern-BSR.pdf>.

18 Henry T. Smith, "A Review and Update of the Conservation Status of the Critically Imperiled Gull-billed Tern in Florida 1998-2006," *Endangered Species UPDATE*, Vol.24 No. 2 (2007) p. 50.

19 Kathy C. Molina and R. Michael Erwin, "The Distribution and Conservation Status of the Gull-billed Tern (*Gelochelidon nilotica*) in North America," *Waterbirds* 29(3)(2006) : 271-295 at 272.

The American Oystercatcher has been designated by the FWC as a Species of Special Concern (Florida 2015).<sup>20</sup> They are on the “Red Watch List” – species with extremely high vulnerability due to small population, small range, high threats, and rangewide declines. The Gulf Coast Vulnerability Assessment has also determined that American Oystercatchers in the Southern Coastal Plain are highly vulnerable.<sup>21</sup> One measure called for in the Vulnerability Assessment is to restore structure and function to threatened coastal ecosystems by reducing the restrictions on freshwater flow to ensure that the needs of downstream ecosystems and species are met.<sup>22</sup>

While these four species which breed in Apalachicola Bay are of special conservation concern, there are also other species of concern that utilize the Bay as a feeding ground including Little Blue Heron, Reddish Egret, Snowy Egret, Roseate Spoonbill, Brown Pelican, Magnificent Frigatebird and Osprey.<sup>23</sup> Increased salinities also may reduce the fiddler crab populations which are the main food source for Wilson's Plover.<sup>24</sup>

More than a dozen other species including Royal Tern, Sandwich Tern, Caspian Tern, Laughing Gull, Double-crested Cormorant, Brown Pelican Great Egret, Snowy Egret, Great Blue Heron, Black-crowned Night Heron, Osprey, Bald Eagle, Common Loon, Red-breasted Merganser, Ring-billed Gull, Herring Gull, Bonaparte's Gull and Forster's Tern regularly forage on the Bay's fish and are also potentially affected by the reduced flows.<sup>25</sup>

**The ACF System Must Be Operated To Protect Fish and Wildlife And The Ecological Health of the Apalachicola River and Bay**

As clearly set forth in the June 2012 Legal Opinion of the Corps' Chief Counsel, fish and wildlife conservation is an authorized purpose of the ACF system of projects:

<sup>20</sup> See “American Oystercatcher Biological Status Review Report,” Florida Fish and Wildlife Conservation Commission, March 31, 2011, available online at <http://myfwc.com/media/2273253/American-oystercatcher-BSR.pdf>.

<sup>21</sup> Watson et al., “Gulf Coast Vulnerability Assessment” at 59.

<sup>22</sup> *Id.* at 80.

<sup>23</sup> The Florida Fish and Wildlife Commission has designated the Reddish Egret, Little Blue Heron, Snowy Egret, Brown Pelican, Osprey and Roseate Spoonbill as Species of Special Concern (Florida, 2015); the Reddish Egret is Red-listed on the 2014 Watch List and the Magnificent Frigate Bird is on the Yellow Watch List.

<sup>24</sup> Watson et al., “Gulf Coast Vulnerability Assessment” at 69. The Vulnerability Assessment determined that Wilson's Plover was highly vulnerable in the Southern Coastal Plain. Wilson's Plover is Red-listed on the 2014 Watch List.

<sup>25</sup> The operation of the ACF reservoirs is also harming the Apalachicola's floodplain forest, one of the richest forests in North America. This bottomland forest sustains a number of specialized species including Mississippi and Swallow-tailed Kites and Prothonotary Warblers which only flourish where there are wide bands of floodplain forest. See Kilgo, J.C., R.A. Sargent, B.R. Chapman, and K.V. Miller, “Effect of stand width and adjacent habitat on breeding bird communities in bottomland hardwoods,” *Journal of Wildlife Management* (1998) 62: 72-83. Both Swallow-tailed Kite and Prothonotary Warbler are on the 2014 Yellow Watch List.

- F. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.



“The system-wide plan of development for the ACF basin was intended to provide benefits for the purpose of hydropower, navigation, and flood control, and also to provide benefits for the purposes of municipal and industrial water supply, recreation, and **fish and wildlife conservation**, which were not quantified in the same manner.”

Legal Opinion at 27 and 31 (emphasis added). The Corps cannot focus on just municipal and industrial supply but must assess the impacts on the ability to achieve the full suite of authorized purposes for the entire ACF system, including fish and wildlife conservation.

Moreover, enhancement of the environment has been an important federal objective for water resources programs for decades. Corps regulations in place since 1980 state that:

“Laws, executive orders, and national policies promulgated in the past decade require that the quality of the environment be protected and, where possible, enhanced as the nation grows. . . . Enhancement of the environment is an objective of Federal water resource programs to be considered in the planning, design, construction, and operation and maintenance of projects. Opportunities for enhancement of the environment are sought through each of the above phases of project development. Specific considerations may include, but are not limited to, **actions to preserve or enhance critical habitat for fish and wildlife**; maintain or enhance water quality; improve streamflow; preservation and restoration of certain cultural resources, and the preservation or creation of wetlands.”

33 C.F.R. § 236.4. (emphasis added).

Clearly, the Corps has the authority, and the obligation, to “preserve and enhance” what has already been designated “a critical wildlife area.”

Unfortunately, the EIS has reduced the goal of fish and wildlife conservation in the ACF to nothing more than protecting three species of endangered mussels, the Gulf Sturgeon, and ensuring riverine fish passage. Totally ignored in the EIS is the rich avifauna and other wildlife that brings thousands of visitors every year to Apalachicola Bay, not to mention the recreationally and commercially harvested species.

The value of these birds to the local economy should not be underestimated. Tourists from around the world have made Florida a destination for wild life watching. The economic impact of visitors and residents who watch birds, dolphins, marine turtles and other wildlife in Florida amounted to \$4.9 billion in 2011. In addition, almost 1 in 5 state residents participate in wildlife viewing. Between 2006 and 2011, the number of people who visited Florida to view wildlife increased 22 percent.

Notwithstanding these very real economic values, perhaps Theodore Roosevelt best expressed what is at stake here, in describing a long-ago visit to a gulf-coast bird sanctuary:

“To lose the chance to see frigate birds soaring in circles above the storm, or a file of pelicans winging their way homeward across the crimson afterglow of the sunset, or a

- G. The authorized fish and wildlife conservation project purpose applies directly to lands and waters associated with the USACE reservoir projects. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay. Additionally, the PAA includes measures necessary to address the adverse effects of project operations on federally listed endangered or threatened species downstream of Jim Woodruff Lock and Dam. In the biological opinion, appendix J of the final EIS, the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.



myriad of terns flashing in the bright light of midday as they hover in a shifting maze above the beach --- why the loss is like the loss of a gallery of the masterpieces of the artists of old time....."<sup>26</sup>

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We cannot afford to lose the national treasure that is the Apalachicola River and Bay, nor do we have the right to waste the heritage of future generations for the short-term economic benefit of a present-day minority.

#### Conclusion

We urge the Corps to develop a water management regime for the ACF system that will protect and restore the ecological health of the Apalachicola River and Bay and the entire Bay system. Fundamental to such a regime is the establishment and maintenance of the ecological in-stream flows needed to protect and restore the chemical, physical and biological integrity of the ACF Rivers and the species that depend on them.

H

Thank you for the opportunity to provide these comments.

Sincerely,



Robert A. Williams, Chairman  
Conservation Committee  
Apalachee Audubon Society

Cc:

The Honorable Jo-Ellen Darcy, Assistant Secretary of the Army (Civil Works)  
Lieutenant General Thomas P. Bostick, USACE Commander General and Chief of Engineers  
The Honorable Christy Goldfuss, Managing Director, President's Council on Environmental Quality  
The Honorable Gina McCarthy, Administrator, U.S. Environmental Protection Agency  
The Honorable Dr. Kathryn Sullivan, Secretary, U.S. National Oceanic and Atmospheric Administration (NOAA)  
The Honorable U.S. Senator Bill Nelson - Florida  
The Honorable U.S. Senator Marco Rubio - Florida  
The Honorable U.S. Representative Gwen Graham -Florida District 2

#### Response to ACF076 – Robert Williams, Apalachee Audubon Society

- H. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

<sup>26</sup> Theodore Roosevelt, *A Book-lover's Holidays in the Open*, 1916.

DRAFT: 12/11/2015

## WADE CLEANERS

**A RESOLUTION BY THE WADE CLEANERS ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND LOWER CHATTAHOOCHEE RIVER.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and

Response to ACF077 – Tripp Wade

A. Comment noted.

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operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY WADE CLEANERS** that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

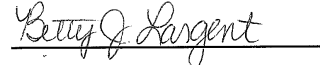
(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

**ADOPTED**, this 16 day of December, 2015, by the WADE CLEANERS, by unanimous vote.

**FOR WADE CLEANERS:**

  
 TRIPP WADE, OWNER/PRESIDENT

**ATTEST:**



A

B

C

#### Response to ACF077 – Tripp Wade

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, *or inflow, whichever is less*” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.

December 15, 2015

Re: Proposed Resolution Urging Flow Targets for Middle and Lower Chattahoochee River

Dear: Colonel Jon J. Chytka

The United States Army Corps of Engineers recently released a Draft Environmental Impact Statement and proposed Water Control Manual for the Apalachicola-Chattahoochee Flint River Basin. The Corps is receiving public comments on its proposal until January 15, 2016.

We are concerned that the Corps has not set flow targets for the middle and lower reaches of the Chattahoochee River. As a result, the Corps can control releases in the upper part of the basin to keep lake levels high, while not providing sufficient flows for southwestern Georgia and southeastern Alabama. For example, in 2009, after the end of drought conditions, the Corps created an “artificial drought,” as it allowed lake levels upstream to rise even as flows in the Middle and Lower Chattahoochee were dangerously low. Under the draft manual, we remain vulnerable to the same scenario.

A

A. See responses to comment C and D.

In order to avoid that situation, the attached resolution urges the Corps to set flow targets for the Middle and Lower Chattahoochee River. We urge you and your organization to adopt this resolution and provide it to the Corps before January 15, 2016. Comments may be provided as follows:

E-mail: ACF-WCM@usace.army.mil

Regular mail: Commander, Mobile District  
U.S. Army Corps of Engineers  
Attn: PD-EI (ACF-DEIS)  
P.O. Box 2288  
Mobile, AL 36628.

Thank you for your consideration. Please feel free to contact me if I can provide additional information or assistance.

Sincerely,



Teresa Tomlinson, Mayor  
Columbus, Georgia

RESOLUTION  
NO. 353-15

C.A. 12-12-15 (4)  
353-15

A Resolution by the Council of Columbus, Georgia encouraging and requesting that the U.S. Army Corps of Engineers establish flow targets for the middle and lower Chattahoochee River.

WHEREAS, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin for purposes including flood control, recreation, water quality, hydropower production, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

WHEREAS, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

WHEREAS, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

WHEREAS, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

WHEREAS, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

WHEREAS, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

WHEREAS, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

WHEREAS, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

WHEREAS, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

WHEREAS, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

WHEREAS, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

B

Response to ACF078 – Teresa Tomlinson, Mayor of Columbus, Georgia

B. Comment noted.

WHEREAS, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

WHEREAS, those targets included a minimum flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

WHEREAS, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states.

NOW, THEREFORE, THE COUNCIL OF COLUMBUS, GEORGIA HEREBY RESOLVES:

That the U.S. Army Corps of Engineers is encouraged and requested:


(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities

Introduced at a regular meeting of the Council of Columbus, Georgia held on the 15<sup>th</sup> day of December, 2015, and adopted at said meeting by the affirmative vote of seven members of Council.

Councilor Allen voting YES.  
 Councilor Baker voting YES.  
 Councilor Barnes voting ABSENT FOR VOTE.  
 Councilor Buck voting ABSENT FOR VOTE.  
 Councilor Davis voting YES.  
 Councilor Henderson voting ABSENT FOR VOTE.  
 Councilor Huff voting YES.  
 Councilor Pugh voting YES.  
 Councilor Thomas voting YES.  
 Councilor Woodson voting YES.

  
 TINA B. WASHINGTON, CLERK

  
 TERESA PIKE TOMLINSON, MAYOR

B

C

D

#### Response to ACF078 – Teresa Tomlinson, Mayor of Columbus, Georgia

- C. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, or inflow, whichever is less” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- D. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.



## City of Phenix City, Alabama

Office of the Mayor  
601 12<sup>th</sup> Street  
Phenix City, Alabama 36867  
Ph. 334-448-2720/Fax 334-448-2721

EDDIE N. LOWE  
MAYOR

CHRIS BLACKSHEAR  
COUNCILMEMBER AT LARGE

JIM CANNON  
COUNCIL MEMBER DISTRICT 1

GAIL N. HEAD  
COUNCIL MEMBER DISTRICT 2

ARTHUR L. DAY, JR.  
COUNCILMEMBER DISTRICT 3

WALLACE B. HUNTER  
CITY MANAGER

CHARLOTTE L. SIERRA  
CITY CLERK

January 5, 2016

Commander, Mobile District  
U.S. Army Corps of Engineers  
Attn: PD-EI (ACF-DEIS)  
P.O. Box 2288  
Mobile, Alabama 36628

RE: Resolution No. 2016-03 Urging Flow Targets for Middle and Lower Chattahoochee River

Commander:

Please see the attached Resolution No. 2016-03 in response to your Draft Environmental Impact Statement and proposed Water Control Manual for the Apalachicola-Chattahoochee Flint River Basin.

The City of Phenix City, Alabama urges the Corps to set flow targets for the Middle and Lower Chattahoochee River. Under the current draft manual, our area remains vulnerable to dangerously low flows even if lake levels upstream rise.

Thank you for your consideration. Please feel free to contact me if I can provide additional information or assistance.

Sincerely,

Mayor Eddie N. Lowe  
The City of Phenix City, Alabama

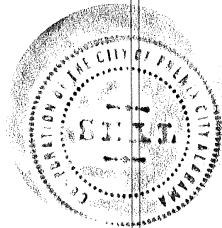
CC: Billy Turner, Director, Troy University Water Resource Economics  
Billy Houston, Executive Director, Tri Rivers Waterway Development Association

STATE OF ALABAMA

COUNTY OF RUSSELL

I, Charlotte L. Sierra, City Clerk of the City of Phenix City, Alabama, do hereby certify that this is a true and correct copy of Resolution No. 2016-03 dated the 5<sup>th</sup> day of January, 2016.

WITNESS my signature, as said City Clerk, under the seal of said City, this the 5<sup>th</sup> day of January, 2016.

  
CHARLOTTE L. SIERRA

## RESOLUTION NO. 2016- 03

**A RESOLUTION BY THE CITY OF PHENIX CITY ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND LOWER CHATTAHOOCHEE RIVER**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

A

Response to ACF079 – Eddie Lowe, Mayor of Phenix City, Alabama

A. Comment noted.



**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states.

**NOW, THEREFORE, BE IT RESOLVED** by the City Council of the City of Phenix City, Alabama, that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River Communities.

**PASSED, APPROVED AND ADOPTED** this 5<sup>th</sup> day of January, 2016.

*Eddie N. Lowe*  
MAYOR

*[Signature]*

*John W. Cannon*

*Paul T. Head*

*Arthur L. Bayle*

MEMBERS OF THE CITY COUNCIL OF  
THE CITY OF PHENIX CITY, ALABAMA

ATTEST:

*[Signature]*  
CITY CLERK

#### Response to ACF079 – Eddie Lowe, Mayor of Phenix City, Alabama

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, or inflow, whichever is less” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.

**A RESOLUTION**

**A Resolution by the Board of Water Commissioners of Columbus, Georgia  
encouraging and requesting that the U.S. Army Corps of Engineers establish flow targets  
for the middle and lower Chattahoochee River.**

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**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin for purposes including flood control, recreation, water quality, hydropower production, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee

River reservoirs of the Corps of Engineers, the Governors of the States of

Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a minimum flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

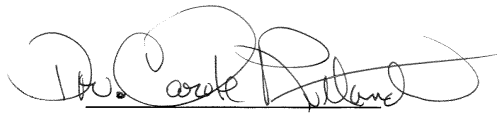
**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF WATER COMMISSIONERS OF COLUMBUS, GEORGIA** that the U.S. Army Corps of Engineers is encouraged and requested:

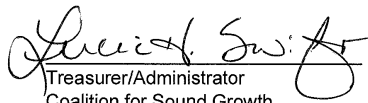
(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

**SO RESOLVED THIS  
18th Day of December, 2015**



Chair/Coordinator  
Coalition for Sound Growth



Treasurer/Administrator  
Coalition for Sound Growth

## Response to ACF080 – Coalition for Sound Growth

A. Comment noted.

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, *or inflow, whichever is less*” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.

## Russell County Resolution

A resolution by the Russell County Commission to encourage and request that the U.S. Army Corps of Engineers establish flow targets for the Middle and Lower Chattahoochee River.

WHEREAS, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Russell County, Phenix City, Alabama, to and from the Gulf of Mexico; and

WHEREAS, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

WHEREAS, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

WHEREAS, the continued and future social, economic, and ecological vitality of communities along Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

A

WHEREAS, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

WHEREAS, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

WHEREAS, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

WHEREAS, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

WHEREAS, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

## Response to ACF081 – Russell County, Alabama

A. Comment noted.

WHEREAS, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

WHEREAS, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

A

WHEREAS, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, Russell County, Phenix City, Alabama and 2000 cfs weekly average at Columbia, Alabama; and

WHEREAS, current operational guidelines of the Corps of Engineers and the draft Water Control Manual are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

NOW, THEREFORE, BE IT RESOLVED BY THE RUSSELL COUNTY COMMISSION that the U.S. Army Corps of Engineers is encouraged and requested:

- (1) To establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia and Russell County, Phenix City, Alabama and 2000 cfs weekly average at Columbia, Alabama; and
- (2) To operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

B


C

ADOPTED, this 23<sup>rd</sup> day of December, 2015, by the Russell County Commission, by unanimous vote.

Signed:

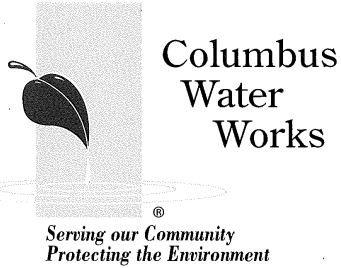
  
 Russell County Commission, Chair

Attest:

  
 County Administrator

SEAL

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., "a daily average target minimum flow of 1,350 cfs, or inflow, whichever is less" (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.



December 15, 2015

Re: Proposed Resolution Urging Flow Targets for Middle and Lower Chattahoochee River

Dear Col. Chytka:

The United States Army Corps of Engineers recently released a Draft Environmental Impact Statement and proposed Water Control Manual for the Apalachicola-Chattahoochee Flint River Basin. The Corps is receiving public comments on its proposal until January 15, 2016.

We are concerned that the Corps has not set flow targets for the middle and lower reaches of the Chattahoochee River. As a result, the Corps can control releases in the upper part of the basin to keep lake levels high, while not providing sufficient flows for southwestern Georgia and southeastern Alabama. For example, in 2009, after the end of drought conditions, the Corps created an "artificial drought," as it allowed lake levels upstream to rise even as flows in the Middle and Lower Chattahoochee were dangerously low. Under the draft manual, we remain vulnerable to the same scenario.

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In order to avoid that situation, the attached resolution urges the Corps to set flow targets for the Middle and Lower Chattahoochee River. We urge you and your organization to adopt this resolution and provide it to the Corps before January 15, 2016. Comments may be provided as follows:

E-mail: ACF-WCM@usace.army.mil

Regular mail: Commander, Mobile District  
U.S. Army Corps of Engineers  
Attn: PD-EI (ACF-DEIS)  
P.O. Box 2288  
Mobile, AL 36628.

Thank you for your consideration. Please feel free to contact me if I can provide additional information or assistance.

Sincerely,

Dr. Carole Rutland  
Chair  
Board of Water Commissioners of Columbus, Georgia

Attachment: A Resolution approved by the Board of Water Commissioners of Columbus, GA.

1421 Veterans Parkway • PO Box 1600 • Columbus, Georgia 31902-1600 • Phone: (706) 649-3400

Response to ACF082 – Columbus Water Works

A. See responses to comments C and D.

## A RESOLUTION

**A Resolution by the Board of Water Commissioners of Columbus, Georgia encouraging and requesting that the U.S. Army Corps of Engineers establish flow targets for the middle and lower Chattahoochee River.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin for purposes including flood control, recreation, water quality, hydropower production, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

B

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of

## Response to ACF082 – Columbus Water Works

B. Comment noted.



Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a minimum flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF WATER COMMISSIONERS OF COLUMBUS, GEORGIA** that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

**SO RESOLVED THIS 14<sup>TH</sup> DAY OF DECEMBER 2015.**

Chair

Treasurer

Member

Member

Member

ATTEST

Secretary

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C

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# Response to ACF082 – Columbus Water Works

- C. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, or inflow, whichever is less” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- D. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.



## Barbour County Commission

**ASSOCIATE MEMBERS:**

Fred M. Cooper, District 5, Vice Chairman  
Henry Franklin, District 1  
W. Frank Straughn, Jr., District 2  
Frances Person-Crews, District 3  
Pat Ivey, District 6  
Trip Horne, District 7

**KENNETH EARL GILMORE**

**CHAIRMAN**  
P.O. BOX 398  
CLAYTON, AL 36016  
TELEPHONE (334) 775-2219  
FAX (334) 775-1102

**STAFF:**

Raye Ann Calton  
County Administrator  
Walter B. Calton  
County Attorney

January 5, 2016

Commander, Mobile District  
U.S. Army Corps of Engineers  
Attn: PD-EI (ACF-DEIS)  
P.O. Box 2288  
Mobile, AL 36628.

Re: Flow Targets for Middle and Lower Chattahoochee River

Dear Commander:

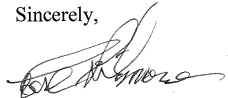
Please find attached Resolution 2016-09 by the Barbour County Commission, Barbour County, Alabama. This resolution requests that the U. S. Army Corps of Engineers

(1) establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

(2) operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

Thank you for your consideration.

Sincerely,



Earl Gilmore, Chairman  
Barbour County Commission

Response to ACF083 – Earl Gilmore

A

A. See responses to comments C and D.

STATE OF ALABAMA )

RESOLUTION NUMBER 2016-09

COUNTY OF BARBOUR )

**A RESOLUTION BY THE BARBOUR COUNTY COMMISSION ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND LOWER CHATTAHOOCHEE RIVER.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

B

B. Comment noted.

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

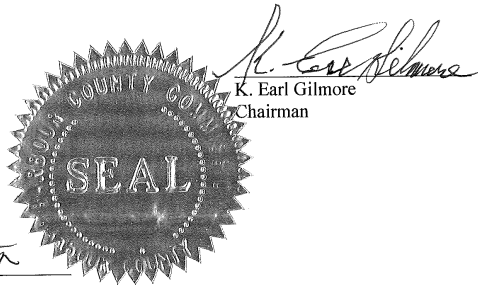
**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

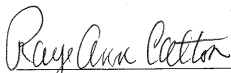
**NOW, THEREFORE, BE IT RESOLVED** by the Barbour County Commission that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

**ADOPTED**, this 5<sup>th</sup> day of January, 2016, by the Barbour County Commission, by unanimous vote.



  
Raye Ann Calton  
Chief Administrator Officer

B

C

D

#### Response to ACF083 – Earl Gilmore

- C. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, *or inflow, whichever is less*” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- D. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.



Response to ACF084 – William Kent

December 28, 2015

Commander, Mobile District  
U.S. Army Corps of Engineers  
Attn: PD-EI (ACF-DEIS)  
P.O. Box 2288  
Mobile, AL 36628

Keep Columbus Beautiful Commission  
P.O. Box 428  
Columbus, Georgia 31902

Re: Proposed Resolution Urging Flow Targets for Middle and Lower Chattahoochee River

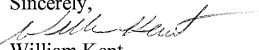
To whom it may concern:

The United States Army Corps of Engineers recently released a Draft Environmental Impact Statement and proposed Water Control Manual for the Apalachicola-Chattahoochee Flint River Basin. The Corps is receiving public comments on its proposal until January 15, 2016.

The Keep Columbus Beautiful Commission (KCBC) is concerned that the Corps has not set flow targets for the middle and lower reaches of the Chattahoochee River. As a result, the Corps can control releases in the upper part of the basin to keep lake levels high, while not providing sufficient flows for southwestern Georgia and southeastern Alabama. For example, in 2009, after the end of drought conditions, the Corps created an “artificial drought,” as it allowed lake levels upstream to rise even as flows in the Middle and Lower Chattahoochee were dangerously low. Under the draft manual, we remain vulnerable to the same scenario. To avoid the 2009 situation, KCBC urges the Corps to set flow targets for the Middle and Lower Chattahoochee River. Please see the attached resolution.

A

Thank you for your consideration. Please feel free to contact me if I can provide additional information or assistance.

Sincerely,  
  
William Kent  
KCBC Vice Chairperson

A. See responses to comments C and D.

**Keep Columbus Beautiful Commission, Columbus, Georgia  
RESOLUTION NO. 2015-1**

**A RESOLUTION BY THE KEEP COLUMBUS BEAUTIFUL COMMISSION  
ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF  
ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND  
LOWER CHATTAHOOCHEE RIVER.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

Response to ACF084 – William Kent

B. Comment noted.

B

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY THE KEEP COLUMBUS BEAUTIFUL COMMISSION** that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

**ADOPTED**, this 23 day of December, 2015, by the Keep Columbus Beautiful Commission (KCBC), Columbus Georgia, by unanimous vote.

Jason Cooper  
KCBC Chairperson

William Kent  
KCBC Vice Chairperson

- C. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, *or inflow, whichever is less*” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- D. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.



**JACK B. TIBBS, JR.**  
MAYOR

**JOY WHITE**  
CITY CLERK/TREASURER  
**COURTNEY R. POTTHOFF**  
CITY ATTORNEY

January 6, 2016

COUNCIL MEMBERS  
**ROBERT D. POWERS**, President  
**JOHNNY A. KNIGHT**, President Pro-Tempore  
**JASON BENNETT**  
**LUCIOUS COBBS**  
**BARBARA C. FLURRY**

Commander, Mobile District  
U.S. Army Corps of Engineers  
Attn: PD-EI (ACF-DEIS)  
P.O. Box 2288  
Mobile, Alabama 36628

RE: Resolution 126-2015 Urging Flow Targets for Middle and Lower Chattahoochee River

Commander:

Please see the attached Resolution No. 126-2015 in response to your Draft Environmental Impact Statement and proposed Water Control Manual for the Apalachicola-Chattahoochee Flint River Basin.

A

The City of Eufaula, Alabama urges the Corps to set flow targets for the Middle and Lower Chattahoochee River. Under the current draft manual, our area remains vulnerable to dangerously low flows even if lake levels upstream rise.

Thank you for your consideration. Please feel free to contact me if I can provide additional information or assistance.

Sincerely,

Jack B. Tibbs, Jr.  
Mayor

Cc: Billy Turner, Director  
Troy University Water Resource Economics

Billy Houston, Executive Director  
Tri Rivers Waterway Development Association

Response to ACF085 – Jack Tibbs

A. See responses to comments C and D.

To Commander USACE - Mobile

RESOLUTION  
126-2015

A RESOLUTION BY THE CITY OF EUFAULA ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND LOWER CHATTAHOOCHEE RIVER.

WHEREAS, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin for purposes including flood control, hydropower production, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

WHEREAS, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

WHEREAS, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

WHEREAS, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

WHEREAS, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

WHEREAS, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

WHEREAS, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

WHEREAS, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

WHEREAS, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

Response to ACF085 – Jack Tibbs

B. Comment noted.

B



WHEREAS, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

WHEREAS, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

WHEREAS, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

WHEREAS, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

WHEREAS, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF EUFAULA that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

B

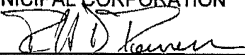
C

D

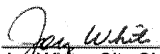
- C. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, *or inflow, whichever is less*” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- D. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.

ADOPTED, this 21<sup>st</sup> day of December, 2015, by the City Council of the City of Eufaula.

THE CITY OF EUFAULA, ALABAMA  
A MUNICIPAL CORPORATION

  
\_\_\_\_\_  
Robert D. Powers, President

ATTEST:

  
\_\_\_\_\_  
Joy White, City Clerk/Treasurer



**Waterway Development Association**  
630 East Broad Street, Eufaula, AL 36027  
334 / 695-1878

January 7, 2016

Commander, Mobile District  
U.S. Army Corps of Engineers  
Attn: PD-EI (ACF-DEIS)  
P.O. Box 2288  
Mobile, AL 36628

RE: Resolution Urging Flow Targets for Middle and Lower Chattahoochee River

Commander: *(Colonel Chytha)*

Please see the attached resolution in response to your Draft Environmental Impact Statement and proposed Water Control Manual for the Apalachicola-Chattahoochee Flint River Basin.

Tri-Rivers Waterway Development Association urges the Corps to set flow targets for the Middle and Lower Chattahoochee River. Under the current draft manual, our area remains vulnerable to dangerously low flows even if lake levels upstream rise.

Thank you in advance for your consideration. Please feel free to contact me if I can provide additional information or assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Billy Houston".

Billy Houston, Executive Director  
Tri-Rivers Waterway Development Association

Cc: Charles Stover, President  
Tri-Rivers Waterway Development Association

Billy Turner, Director

*"Promoting the Effective Development, Utilization and Maintenance of the Apalachicola-Chattahoochee-Flint Inland Waterway and River System"*

Response to ACF086 – Billy Houston

A

A. See responses to comments C and D.

January 4, 2016

**TriRivers Waterway Development Association  
RESOLUTION NO. 2016-1**

**A RESOLUTION BY TRIRIVERS WATERWAY DEVELOPMENT ASSOCIATION  
ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF  
ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND  
LOWER CHATTAHOOCHEE RIVER.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin for purposes including flood control, hydropower production, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to

B

Response to ACF086 – Billy Houston

B. Comment noted.

diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**B**

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY TRIRIVERS WATERWAY DEVELOPMENT ASSOCIATION** that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**C**

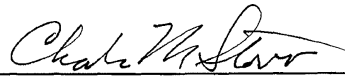
(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

**D**

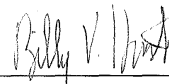
#### Response to ACF086 – Billy Houston

- C. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, *or inflow, whichever is less*” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- D. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.

**ADOPTED**, this 4th day of January, 2016, by TriRivers Waterway Development Association, by unanimous vote.



**Charles Stover, President**  
**TriRivers Waterway Development Association**



**Billy Houston, Executive Director**  
**TriRivers Waterway Development Association**

~~DRAFT: 12/11/2015~~**COLUMBUS BUSINESS IMPROVEMENT DISTRICT****A RESOLUTION BY THE COLUMBUS BUSINESS IMPROVEMENT DISTRICT  
ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF  
ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND  
LOWER CHATTAHOOCHEE RIVER.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and

Response to ACF087 – Richard Bishop

A. Comment noted.

A

operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY COLUMBUS BUSINESS IMPROVEMENT DISTRICT** that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

**ADOPTED**, this 16 day of December, 2015, by the COLUMBUS BUSINESS IMPROVEMENT DISTRICT, by unanimous vote.

**FOR COLUMBUS BUSINESS IMPROVEMENT DISTRICT:**



Richard Bishop, Columbus Business Improvement District

**ATTEST:**



#### Response to ACF087 – Richard Bishop

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, *or inflow, whichever is less*” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.



~~DRAFT: 12/11/2015~~

## UPTOWN COLUMBUS, INC.

**A RESOLUTION BY THE UPTOWN COLUMBUS, INC. ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND LOWER CHATTAHOOCHEE RIVER.**

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**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

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**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and

Response to ACF088 – Richard Bishop

A. Comment noted.

operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY UPTOWN COLUMBUS, INC.** that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

**ADOPTED**, this 16 day of December, 2015, by the UPTOWN COLUMBUS, INC., by unanimous vote.

**FOR UPTOWN COLUMBUS, INC.:**

  
 RICHARD BISHOP, PRESIDENT

**ATTEST:**



A

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#### Response to ACF088 – Richard Bishop

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, *or inflow, whichever is less*” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.

# **TROY UNIVERSITY CENTER FOR WATER RESOURCE ECONOMICS**

## **A RESOLUTION BY TROY UNIVERSITY CENTER FOR WATER RESOURCE ECONOMICS ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND LOWER CHATTAHOOCHEE RIVER.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

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**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for

Response to ACF089 – Billy Turner

A. Comment noted.

reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY TROY UNIVERSITY CENTER FOR WATER RESOURCE ECONOMICS** that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

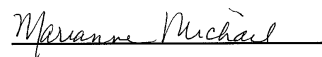
**ADOPTED**, this \_\_\_\_ day of December, 2015, by the Russell County Commission, by unanimous vote.

**FOR TROY UNIVERSITY CENTER FOR WATER RESOURCE ECONOMICS:**



**Billy Turner, Director of Center for Water Resource Economics Troy University**

**ATTEST:**



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#### Response to ACF089 – Billy Turner

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, *or inflow, whichever is less*” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.

Phenix City Campus

One University Place  
Phenix City,  
Alabama  
36869

334-297-1007  
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**TROY**  
UNIVERSITY

January 13, 2016

Col. Jon Chytka, Commander  
U.S. Army Corps of Engineers  
Mobile District  
Attn. PD-EI(ACF-DEIS)  
P.O. Box 2288  
Mobile, AL 36628

Dear Col. Chytka and Staff,

These comments are offered on the "Draft Environmental Impact Statement for the Update of the Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin in Alabama, Florida and Georgia and a Water Supply Storage Assessment(DEIS). These are my personal comments based on a rather complete understanding of the ACF System obtained over the past 45 years during which I played an active role in numerous studies and projects, first as a consultant from 1971-86 while providing leadership for many key projects for water and wastewater facilities of Metro Atlanta area clients, later as President of Columbus Water Works from 1989-2009 and continuing to the present as the Director of the Troy University Center for Water Resource Economics in Phenix City, AL. My comments will be divided into 6 specific areas:

## 1) OVERALL DEIS

I'm sure that developing a report to address all of the required and relevant issues is a huge challenge. However trying to read and digest a document of this magnitude makes it virtually impossible to be certain that all of the facts included have been evaluated and properly assessed. Even with a 39 page table of contents it is very hard to locate specific issues of interest and track their outcomes under the proposed operating plan alternatives.

A

## 2) ECONOMIC CONDITIONS

Attention to any detailed data source showing median annual household income will show that family economic conditions vary from very good to very bad in the



## Response to ACF089 – Billy Turner

A. We acknowledge that the size and complexity of the draft EIS and the draft Master WCM updates are considerable, but we have tried to present the relevant information in as organized and concise a manner as possible. Aside from public review, the Master WCM updates have undergone: district quality control review, agency technical review, and independent external peer review.

ACF Basin. The DEIS includes some data in sections 2.6.7 (Population), 2.6.8 (Income), 2.6.9 (Employment) and 2.6.10 (Environmental Justice) on economic conditions in the ACF but presents them by State and sub sections of the full basin in the ACF. This way of looking at the data tends to mask the areas of poorest economic conditions. By reviewing the information presented on the Justice Map on the internet one can zoom in on more specific sections, and it becomes clear the Upper Chattahoochee portion of the area holds those with higher median annual household income exceeding \$100,000. The region between Columbus, GA and Apalachicola, FL are clearly the lowest with most of the area showing median annual household income under \$23,000. The DEIS in other sections refer to Socioeconomic Conditions, but the focus is only on the need for water supply based on projections of growth. It is therefore unclear how the DEIS addressed EO 12898 (Federal Actions to Address Environmental justice in Minority Populations and Low Income Populations). It would seem that the Upper Chattahoochee with the highest income is the water resource winner and the low income regions of the southeast Alabama, northwest Florida and southwest Georgia are the losers. This distribution of future water resource planning activities by the Corps does not seem to square with the normal federal agency role under the EO 12898.

B



### 3) NAVIGATION

It is quite clear from reading some of the original documents which resulted in the U.S. Congress approving the development of the Corps Dams in the ACF that the primary intention was the improvement of navigation and flood control on the lower part of the river system (from the Gulf of Mexico to Columbus and Bainbridge in Georgia). Hydropower was the main revenue to be generated from the dams. All of the other benefits were considered incidental. With the completion of the Woodruff, Andrews and George projects and the attention of the Corps to dredging mainly on the Apalachicola River the lower ACF system became a powerful economic engine for the AL-FL-GA region that it served. From the completion of these projects in the early 1960's until 1990's, the use of the system grew to provide more than 1,000,000 tons per year of commercial water based

C

#### Response to ACF089 – Billy Turner

B. Language has been added to section 2.6.8 of the EIS to discuss the disparity of incomes throughout the ACF Basin.

C. The PAA of the EIS is to update the water control plans and manuals for the ACF Basin, as directed by Secretary of the Army, Pete Geren, on January 30, 2008. Specifically, the purpose and need for the federal action is to determine how the federal projects in the ACF Basin should be operated for their authorized purposes, in light of current conditions and applicable laws, and to implement those operations through updated water control plans and manuals. Development of a navigation maintenance plan for dredging the Apalachicola River does not fall within the scope of the Master WCM update process, as directed by the Secretary of the Army. Because navigation is one of the congressionally authorized purposes in the ACF Basin, however, it was considered in making operational decisions regarding water management. It is anticipated that little or no dredging of the navigation channel in the Apalachicola River will be possible in the immediate future. Accordingly, USACE explored several options to provide the most reliable navigation season possible, within the constraints of water availability and a lack of dredging. USACE used updated channel survey data from 2009 for the Apalachicola River when developing management measures for navigation. The PAA includes actions, when supported by ACF Basin hydrologic conditions, to increase the availability of a navigable 7-ft channel in the Apalachicola River for a portion of the year (January–April/May) by making additional releases. Augmenting flows at other times of the year would jeopardize the abilities of ACF projects to fulfill other authorized project purposes.

transportation. However, with the decision in the late 1990's by environmental groups and the State of Florida to oppose dredging, and the Corps unwillingness to override the State as it has in the Schuylkill/Delaware Rivers in Philadelphia, PA area in maintaining the navigable channel, the Gulf to Columbus/Bainbridge route has become one of the most economically depressed regions in the US. Prior to 1990 with the advantages of navigation, two large pulp and paper mills (Georgia Pacific and WestRock) and a nuclear power plant located along the river supporting thousands of workers and related business employees. Even though strong efforts continue by organizations such as Tri Rivers Waterway Development Association and local Chambers of Commerce and Development Boards to promote the area no major industry has located on the river since the late 1990's.

The DEIS does respond to navigation in a positive way, since there is currently virtually no navigation, by proposing a 4-6 month channel when water is available to provide 16,000-20,000 cfs in the Apalachicola river. The report does not address the critical element of dredging in the 10-15 miles of the 250+ mile navigable sections of the ACF streams. It is the growing hope of those in the region that the dredging issue could be addressed much like the recent snagging problems were solved by finding a more environmentally acceptable method of dredging and disposing of dredge spoil so that the ACF navigation can be restored to the original intent and assist this very depressed region in addressing its economic needs.

#### 4) CONSUMPTIVE USE (RETURN RATES)

This is a very confusing and difficult issue to most people trying to address water resources. It is critical that the Corps provide a more complete understanding because of the important role it plays in the ACF water balance. As an example, if it were possible to achieve a 100% return ratio then there would be little or no basis for riparian water right issues between upstream and downstream users. The DEIS in Section 5.1.4.1-Return Rates describes return rates ranging from 29% to 117%. A key point based on my long term consideration and attention to return ratios from public water and wastewater systems is that a return rate of more than 100% is

D

#### Response to ACF089 – Billy Turner

- D. The EIS has been revised to better explain return rates used in considering Georgia's 2015 request. The return rates used in the water supply analysis considered the withdrawals of multiple water supply providers and the returns of multiple wastewater treatment facilities discharging either into Lake Lanier or the downstream reaches of the Chattahoochee River. The return rates used for Metro Atlanta include interbasin transfer so that discharges from wastewater treatment plants exceed the amount of water withdrawn. Regulating the return rates of wastewater treatment plants is a local or state responsibility, not USACE. Water Supply Storage Agreements do not contain provisions requiring or giving credit for return flows. Regulation of irrigation uses of water in the ACF Basin is a local or state responsibility, not USACE.



technically impossible and should never be used unless someone can manufacture new water. The return rates used in the DEIS for the MNGWPD are suspect. In all of the deliberations between AL-FL-GA during the Compact negotiation period the lead technical person for Georgia, Harold Reheis, reported a return rate for the Metro Atlanta in the 55-60% range. I know of only one change in the Metro area that might account for the indicated improvement in return rates and that is the capture of more of their combined sewer flows in the City of Atlanta. This could mean on wet weather days that flows exceeding 100% could be measured and counted in return flows but return flows in excess of 100% should be excluded. Further the DEIS data are based on average annual return rates. Return rates during average or better stream flow periods are of little concern but during drought and low stream flow periods the rates of return becomes critical. It is this writers concern and request that the Corps in any water supply contract require effective return rates in the range of 75% for all users and that procedures for regular reporting (preferably daily but at least monthly) be adopted and that exclusion of returns of more than 100% be a requirement.

The selected alternatives shown in DEIS Section 5.1.4.1 with withdrawal from Lake Lanier for 2040 of 225 MGD with a return rate of 40% seems too low and should be raised to the 75% range. The withdrawal below Buford Dam for MNGWMD for 2040 is 408 MGD with a 94% return rate. This return rate seems unachievable and should be lowered to the 75% range. It is interesting that the Corps has not included an evaluation of return rates from farming irrigation in the DEIS. Obviously this is a hard element to address and evaluate. Nevertheless, farm irrigation is a critical piece of the ACF water balance and must be understood especially during management of the ACF during droughts.

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##### 5) MIDDLE CHATTAHOOCHEE WATER COALITION

This is a group of water organizations located in the section of the river from West Point Lake to the Georgia Florida line with common interest in addressing positive action steps about water. The group chose to hire a consultant to help review the



DEIS. The following are excerpts are from a technical analysis by Global Energy and Water Consultants:

“Summary--- While, by definition, the Corps asserts their collective intent to “balance all of the resources” in the basin and to meet all of the authorized purposes in the basin, the DEIS and WCM take a decidedly myopic approach to “balancing.” The DEIS and WCM establish from the outset that water supply for the Metropolitan Atlanta region is by far the most critical issue it addresses. The Corps is so focused on water supply that it draws attention to the Water Supply Storage Assessment (WSSA) in the very first paragraph of the Executive Summary on Volume 1 of the DEIS. The focus is placed ahead of all other authorized purposes and operational responsibilities, stakeholder needs and competing uses even ahead of environmental needs of the basin in the lower reaches including the Apalachicola Reach and the Apalachicola Bay and Estuary. To further reinforce the WSSA importance, the Corps not only evaluates the current water supply needs and criteria but also expands their analysis to include the water supply demands as far into the future as 2040. No other authorized purpose, stakeholder need or environmental impact is evaluated with this time frame in mind.”

“Clearly, the Corps has once again defined the purpose of the revisions to the WCM to specifically meet the Metro Atlanta water supply needs current and into the future 100% of the time and leaving the downstream stakeholders at the mercy of flows left over after satisfying water supply withdrawals and returns. In addition to the Corps focus on water supply alternatives for Metro Atlanta, they have also modified the 1990 WCM to meet certain environmental needs through the use of artfully termed Interim Operating Plans (IPO) and subsequently Revised Interim Operating Plans (RIOP).”

“Conclusions...3) West Point Lake (WPL) and W. F. George storage will be called on for downstream flow augmentation to the point that all of the Conservation Storage will routinely be evacuated resulting in the reservoir elevation decreasing to Elev. 620-622 and Elev. 185 routinely. 4) While WPL and WF George are operated to utilize the full storage in the Conservation Storage, the Preferred Action Alternative (PAA) and the Corps have established Elev. 1050 as

E

#### Response to ACF089 – Billy Turner

- E. Addressing the water supply storage at Lake Lanier has been an issue in the ACF Basin for many years and was the focus of much of the past litigation. In its 2011 decision, the 11th Circuit Court of Appeals instructed USACE to reconsider whether it has the legal authority to operate the Buford project to accommodate Georgia's request, in light of the legal authority conferred by Congress in the River and Harbor Act of 1946; Public Law 84-841 (July 30, 1956) (1956 Act); and the Water Supply Act of 1958. USACE determined it had the authority to meet that request, but needed to conduct an environmental analysis and consider public comments to determine how much, if any, of that request it should meet. The 11th Circuit Court of Appeals remanded the issue to USACE to consider in updating the Master WCM and in the associated EIS. Therefore, USACE has attempted to propose and evaluate water management measures and alternatives that balance across all authorized project purposes, while considering Georgia's water supply storage request as directed by the 11th Circuit Court of Appeals. In doing so, USACE has considered both the stakeholder needs and the competing uses throughout the system. Based on model simulation over a 73-year hydrologic period of record, daily flow needs at Columbus (as reflected by the established Federal Energy Regulatory Commission license targets for the Georgia Power projects between Columbus and West Point Lake) would be met on 95 percent of the days for the NAA; this reflects current operations. Under the PAA, those flows needs would be met on 94 percent of the days. Flows at Columbus, Georgia would experience little change under the PAA. The authorized purposes of the federal ACF system do not include a specific directive to meet flow targets at Columbus, Georgia.

the absolute minimum elevation for Lake Lanier even during the most extreme droughts events. At Elev. 1050 there continues to be 15 feet of Active storage remaining in the Conservation Pool. 5). The flows at Columbus do not cause additional releases for WPL based on the modeling of the No Action Alternative (NAA) and PAA. As a matter of fact, all of the parameters for Columbus flows appear to be unchanged from the NAA to PAA. The critical issue for Columbus is not the Average Annual flows or even the monthly or weekly flows but the daily flows and how these will be met by Georgia Power Company under criteria the Corps established for releases from Buford and WPL.”

#### 6) ACF Stakeholders, Inc

Information about this organization can be found at its web site, <http://acfstakeholders.org>. This organization consists of representatives of virtually all of the water users in the ACF Basin, including those who withdraw water for use and those who admire and use it in its natural or man-made environment. The ACFS members have toiled for more than 5 years raising money (no state or federal sources), hiring consultants, deliberating over 1000's of pages of documents to try to find a solution to the disagreements over water in the ACF. In May 2015 the ACFS released its Sustainable Water Management Plan (SMWP). ACFS has officially provided the SMWP to the Corps over the signature of Chairperson Betty Webb to serve as its major comments on the DEIS. However due to a non-disclosure decision created by a few ACFS members (ACFS operates by consensus so one vote rules) certain documents the ACFS Consultant, Georgia Water Resources Institute (GWRI) have been withheld. Prior to the non-disclosure decision in late 2013 ACFS shared many draft documents with the Corps. The withheld documents consist mostly of ACF models and Apalachicola models. It is well known that GWRI didn't sign the full disclosure agreement. It is therefore this writer's opinion and most ACFS members that the Corps have interface with GWRI and consider availing itself of GWRI information in the interest of achieving an outcome for the Water Control Plan that affords maximum benefit to all users in the ACF Basin.

F

#### Response to ACF089 – Billy Turner

- F. USACE requested that the ACF Stakeholders organization provide the technical supporting documentation for the recommendations in the ACF sustainable water management plan (SWMP), with their formal comments on the draft EIS, so that they may be fully evaluated and considered in the Master WCM update process. Unfortunately, the technical supporting documentation was not provided to USACE. The SWMP recommendations have been considered to the extent possible with the limited technical information available. GWRI did not provide information or data to support the ACFS alternative. It is inappropriate to approach the ACF Stakeholder's consultant independently to request technical information that the ACF Stakeholder organization was unable to make available to USACE. Furthermore, there was no way to validate that any information submitted by GWRI was the information that underpinned the ACF Stakeholder submittal. Where information was not available, USACE made assumptions to develop an additional alternative that is evaluated in the final EIS. GWRI did not approach USACE to volunteer information regarding the ACFS SWMP. See section 4.1.4 of the final EIS for a discussion of the ACF Stakeholders' SWMP.

In conclusion, my strongest desires and requests are for the Corps to use all of its water management capability to meet all of the needs in the ACF system. Because of where I have lived for the past 27 years I have a strong interest in the Middle and Lower Chattahoochee portion of the system. To meet the sustainable needs of the section of the river on the Alabama-Georgia border the Corps needs to improve navigation and provide specific flow targets at the Columbus, GA USGS gage and the Columbia, AL gage. These flows have been defined in the attached resolution. Thank you for the opportunity to provide comments on this most important issue facing the inhabitants of the ACF region.

Sincerely,



Billy G Turner  
Director  
Center for Water Resource Economics  
(334) 329-2791

#### **TROY UNIVERSITY CENTER FOR WATER RESOURCE ECONOMICS**

#### **A RESOLUTION BY TROY UNIVERSITY CENTER FOR WATER RESOURCE ECONOMICS ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND LOWER CHATTAHOOCHEE RIVER.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for

reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY TROY UNIVERSITY CENTER FOR WATER RESOURCE ECONOMICS** that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

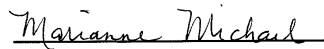
(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

**ADOPTED**, this \_\_\_\_ day of December, 2015, by the Russell County Commission, by unanimous vote.

**FOR TROY UNIVERSITY CENTER FOR WATER RESOURCE ECONOMICS:**

  
 Billy Turner, Director of Center for Water  
 Resource Economics Troy University

**ATTEST:**



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**From:** Lee Grant  
**Sent:** Friday, January 08, 2016 8:48 AM  
**To:** ACF-WCM  
**Cc:** Don Freeman; Sharon Lawrence  
**Subject:** [EXTERNAL] Flow Targets for the Middle and Lower Chattahoochee River  
**Attachments:** 20160108094216596.pdf

Please find attached a Resolution by the W. C. Bradley Co. regarding the establishment of Flow Targets for the Middle and Lower Chattahoochee River.

Should you have any questions regarding this Resolution, please contact Donald Freeman, General Counsel for W. C. Bradley Co.

Thank you,  
Lee

Lee Grant  
Exec Asst to Chairman, President & CEO, SVP & CFO W. C. Bradley Co.

**W. C. BRADLEY COMPANY****A RESOLUTION BY THE W. C. BRADLEY COMPANY ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND LOWER CHATTAHOOCHEE RIVER.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and

Response to ACF090 – Lee Grant

A. Comment noted.

A

operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

A

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY W. C. BRADLEY COMPANY** that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

B

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

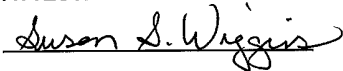
C

**ADOPTED**, this 30<sup>th</sup> day of December, 2015, by the W. C. BRADLEY COMPANY, by unanimous vote.

**FOR W. C. BRADLEY COMPANY:**

  
STEVE BUTLER, CHAIRMAN OF THE BOARD OF DIRECTORS

**ATTEST:**



#### Response to ACF090 – Lee Grant

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, *or inflow, whichever is less*” (*emphasis added*). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.

## Response to ACF091 – Betty Cummins

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**From:** Betty  
**Sent:** Tuesday, January 12, 2016 9:11 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Public comment regarding The U.S. Army Corps of Engineers update of its operating manual for the Apalachicola-Chattahoochee-Flint (ACF) river system

This email is being submitted as a public comment regarding The U.S. Army Corps of Engineers update of its operating manual for the Apalachicola-Chattahoochee-Flint (ACF) river system – the river system that Apalachicola Bay depends on for freshwater and nutrients to stay healthy and productive.

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The Apalachicola River and Bay is the last ecosystem of its kind anywhere, making this so much more than “a local issue”. As a national resource, the Apalachicola Basin is an ecological and cultural treasure.

The river’s floodplain is the biological factory that fuels the productivity of Apalachicola Bay. Today, because the Corps management of the river system’s dams and reservoirs prioritizes all other authorized uses of the river’s water over the conservation, preservation and long-term sustainability of the ecosystem itself, the Apalachicola River receives less and less freshwater and the ecological functions of the Apalachicola’s Floodplain and Bay are being lost.

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A way of life for an entire region may not survive unless the Corps’ management of the quantity and timing of the flow of freshwater to the Apalachicola River and to its Bay is adequate to sustain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem. It is critical that the update of the operating manual for the Apalachicola-Chattahoochee-Flint (ACF) river system give equal consideration to the needs of the downstream residents and ecosystem along the Apalachicola River in Florida.

B

Betty Cummins  
 Resident of Franklin County, Florida

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.



**W. C. BRADLEY COMPANY****A RESOLUTION BY THE W. C. BRADLEY COMPANY ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND LOWER CHATTAHOOCHEE RIVER.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

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**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and

Response to ACF092 – Steve Butler

A. Comment noted.

operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY W. C. BRADLEY COMPANY** that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

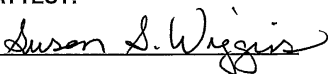
(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

**ADOPTED**, this 30<sup>th</sup> day of December, 2015, by the W. C. BRADLEY COMPANY, by unanimous vote.

**FOR W. C. BRADLEY COMPANY:**

  
STEVE BUTLER, CHAIRMAN OF THE BOARD OF DIRECTORS

**ATTEST:**



A

B

C

#### Response to ACF092 – Steve Butler

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, or inflow, whichever is less” (emphasis added). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.

**LANCE R. LeFLEUR**  
DIRECTOR



Alabama Department of Environmental Management  
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**ROBERT J. BENTLEY**  
GOVERNOR

January 11, 2016

Colonel Jon J. Chytka  
Commander and District Engineer (acf-wcm@usace.army.mil)  
U.S. Army Corps of Engineers, Mobile District  
ATTN: PD EI (ACF-DEIS)  
P.O. Box 2288  
Mobile, Alabama 36628

**RE: Draft Environmental Impact Statement for the Master Water Control Manual of the Apalachicola-Chattahoochee-Flint (ACF) River Basin**

Dear Colonel Chytka:

The Alabama Department of Environmental Management (ADEM) has received and reviewed the Draft Environmental Impact Statement (DEIS) prepared by the United States Army Corp of Engineers-Mobile District (USACE) pursuant to the National Environmental Policy Act (NEPA) for the update to the Master Water Control Manual for the Apalachicola-Chattahoochee-Flint (ACF) River Basin.

Based upon our review, ADEM finds that the DEIS contains several procedural and technical flaws that should be addressed. ADEM also believes that the USACE has obligations under NEPA, the Federal Water Pollution Control Act (Clean Water Act), and the USACE's own regulations which are not adequately addressed in the DEIS and that should be remedied before a Record of Decision is issued.

ADEM does not concur with the USACE's proposed plans for the ACF and asserts that the proposed actions will be in violation of the Federal Clean Water Act, Alabama's Water Pollution Control Act, and Alabama's Water Quality Standards, all of which serve to protect Alabama's waters from such actions. Enclosed you will find our comments which support our opposition to the proposed action.

ADEM appreciates the opportunity to provide comments on the DEIS developed for the ACF Water Control Manual revisions. ADEM stands ready to cooperate in any way possible to ensure that the updated manual provides protection of Alabama's water quality standards while maintaining the necessary flexibility to operate the very complex system of reservoirs in the ACF River Basin. ADEM looks forward to assisting where needed in additional efforts to implement an effective water quality monitoring program to ensure the USACE operation of the ACF system complies with Alabama's water quality regulations.

**Birmingham Branch**  
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**Decatur Branch**  
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Decatur, AL 35603-1333  
(256) 353-1713  
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**Mobile Branch**  
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Mobile, AL 36615-1131  
(251) 450-3400  
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**Mobile-Coastal**  
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Colonel Jon J. Chytka  
January 11, 2016  
Page 2 of 2

If there are questions regarding these comments or a need for additional clarification, please contact Mr. Chris Johnson within ADEM Water Division at 334-271-7827 or email at [cljohnson@adem.state.al.us](mailto:cljohnson@adem.state.al.us).

Sincerely,

Lance R. LeFleur  
Director

LRL/CLJ/GLD/ghe

Enclosure

cc: Glenda L. Dean, Chief, Water Division, ADEM  
Chris L. Johnson, Chief, Water Quality Branch, ADEM  
Brian Atkins, Chief, Office of Water Resources, ADECA  
Nick Nichols, Chief, Division Freshwater Fisheries Section, ADCNR  
Chris Militscher, Chief, NEPA Program Office, EPA Region 4  
James Giattina, Director, Water Protection Division, EPA Region 4  
James A. Capp, Chief, Watershed Protection Branch, GAEPD  
Bill Pearson, Field Supervisor, Daphne Field Office, USFWS

ADEM's Comments on the Draft EIS for the  
ACF Water Control Manual  
January 11, 2016

General Comments

1. The Water Management Alternative 1 No Action Alternative (NAA) plan is supposed to be based on current conditions. Section 4.2.1.1 of the DEIS states, "Water Management Alternative 1 represents no change from the current management direction or level of management intensity. This alternative would represent continuation of the current water control operations at each of the federal projects in the ACF Basin." While the NAA does include an acceptable, albeit barely, representation of mean and median flows for current conditions, it grossly misrepresents minimum and maximum flows. As can be seen from Table 1 below, the 10<sup>th</sup> percentile flows at some of the modeled locations for the NAA are close to 100% higher than the actual observed flows. The 7Q<sub>10</sub>, computed using the Pearson Type III methodology, for the NAA at some of the modeled locations is 50% and 60% higher than the computed 7Q<sub>10</sub> of the observed flows. These increased low flow conditions could ultimately cause large misrepresentations of actual water quality since a majority of water quality parameters and conditions are affected by flow. Increased 7Q<sub>10</sub> flows represent more water flowing through the system during drought conditions than are observed. More water and ultimately more flow during drought conditions could depict lower nutrient and chlorophyll-*a* values and higher DO values than what is actually present. Furthermore, if the NAA models are not representative of actual flows, the Proposed Action Alternative (PAA) can't accurately represent what the conditions will be when the proposed changes are made. Subsequently, if the PAA is not accurately represented, a comparison to actual current conditions to determine how water quantity and ultimately water quality is affected will not be accurate.

A

**Table 1**

W.F. George Lake					George W. Andrews Lake				
	Observed	NAA	PAA	% Difference (Observed vs. NAA)		Observed	NAA	PAA	% Difference (Observed vs. NAA)
Mean	9396	9129	9094	-2.8%	Mean	10335	10063	10029	-2.6%
Median:	6919	6563	6692	-5.2%	Median:	7611	7213	7338	-5.2%
10th %tile:	1834	3627	3423	97.8%	10th %tile:	2018	4064	3857	101.4%
90th %tile:	19046	18318	18258	-3.8%	90th %tile:	20950	20143	20123	-3.9%
Max:	163721	107795	107809	-34.2%	Max:	180,093	118186	118200	-34.4%
Min:	0	10	10		Min:	0	92	63	
7Q10	1187	1783	1721	50.2%	7Q10	1306	2085	2011	59.7%

- A. The discussion in section 6.0 of the EIS has been revised with language indicating that the Hec-ResSim model was not "calibrated" to observed data and, therefore, would not be expected to necessarily simulate observed data for high or low flows. The HEC-ResSim model follows the operating plan when, in actuality, deviations from the operating plan might have been approved that the model cannot capture precisely. As stated in section 4.2.1.1 of the draft EIS:

Water Management Alternative 1 represents no change from the current management direction or level of management intensity. This alternative would represent continuation of the current water control operations at each of the federal projects in the ACF Basin. Basinwide management for all seven project purposes (i.e., flood risk management, hydroelectric power generation, navigation, fish and wildlife conservation, recreation, water quality, and water supply) is also considered in the alternative.

Model simulations of the current management direction do not necessarily represent observed conditions as in cases in which deviations are requested, as stated in section 6.10:

As in past years, working closely with states and affected stakeholders, special releases from USACE projects might be made to assist with public health and safety throughout the ACF Basin. USACE will periodically notify users when such releases are made, and water users can also directly notify USACE of their needs for special releases.

Historic special releases were not simulated in this modeling effort as the intent of the model was not to mimic historic conditions but to evaluate the effects of changes in USACE's current management direction.

Water quality misrepresentations can be seen when comparing actual water quality data to the modeled data. ADEM has been routinely monitoring reservoirs within the ACF River Basin since 1992. When comparing actual data to modeled data, the HEC-5Q model utilized by USACE does not represent actual conditions Alabama has observed for reservoirs in the ACF. If calibrated/verified water quality models are not developed to represent actual conditions observed over time, they are deemed useless in making any kind of informed management decision. One prime example of this disparity can be seen when comparing the modeled growing season average chlorophyll-*a* values to the actual growing season average chlorophyll-*a* values. This comparison is illustrated in Table 2 below. The NAA modeled values are significantly lower than the observed values. This is one of many examples, documenting why the USACE's HEC-5Q model is inaccurate and does not represent actual conditions observed in the ACF, nor can it be used to make informed decisions.

Table 2

WESC-3 (West Point Mid-Lake) Chl-a				
Year	Observed	NAA Modeled	PAA Modeled	% Difference (Observed vs. NAA)
2004	15.3	5.8	6.4	-62.05%
2007	15.0	9.4	9.8	-37.35%
2008	11.5	10.7	11.2	-7.22%
GEOH-4 (W.F. George Mid-Lake) Chl-a				
Year	Observed	NAA Modeled	PAA Modeled	% Difference (Observed vs. NAA)
2004	14.7	7.0	7.7	-52.54%
2007	16.0	9.0	9.5	-43.73%
2008	11.7	9.3	10.1	-20.83%

2. The USACE's proposed alternative must comply with the Clean Water Act and USACE regulations.

Section 101. (b) of the Clean Water Act states, in part: "It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this Act."

In addition, Section 313. (a) states, in part: "Each department, agency, or instrumentality of the executive, legislative, and judicial branches of the Federal Government (1) having jurisdiction over any property or facility, or (2) engaged in any activity resulting, or which may result, in the discharge or runoff of pollutants, and each officer, agent, or employee thereof in the performance of his official duties, shall be subject to, and comply with, all Federal, State, interstate, and local requirements, administrative authority, and

#### Responses to ACF093 - ADEM

- B. The ability to predict individual values was not emphasized. The HEC-5Q model is not a calibrated regulatory model. Therefore, the word "calibration" was not used in the report. The HEC-5Q model coefficients were adjusted using the observed data to provide reasonable long-term, systemwide approximations of water quality concentrations. HEC-5Q model coefficients and parameters are within reported ranges listed in the published literature. Those coefficients were selected to cover the entire range of conditions for the ACF Basin. None of the model coefficients were skewed just to fit the data. Therefore, the focus of the analysis was to achieve reasonable responses over the system for the entire analysis period, using a consistent set of model coefficients derived from observed data.

USACE selected the term "model adjustment" instead of "model calibration." Similarly, USACE chose the more accurate term "demonstration of model performance" instead of "model validation." Plots and descriptions of the model adjustment process are detailed in the water quality modeling report (appendix D of the draft EIS).

- C. USACE has minimum flow requirements for water quality control below the Buford and West Point projects. In addition to always meeting those low-flow requirements, USACE also has a minimum flow requirement at Peachtree Creek pursuant to the River and Harbor Act of 1946. The ACF Basin is a federal navigation system, and USACE followed all applicable laws in updating the WCMs and preparing the EIS.

process and sanctions respecting the control and abatement of water pollution in the same manner, and to the same extent as any nongovernmental entity including the payment of reasonable service charges. The preceding sentence shall apply (A) to any requirement whether substantive or procedural (including any recordkeeping or reporting requirement, any requirement respecting permits and any other requirement, whatsoever), (B) to the exercise of any Federal, State, or local administrative authority, and (C) to any process and sanction, whether enforced in Federal, State, or local courts or in any other manner. This subsection shall apply notwithstanding any immunity of such agencies, officers, agents, or employees under any law or rule of law.”

Federal regulation at 40 CFR §130.12 (c) states: “Each department, agency or instrumentality of the executive, legislative and judicial branches of the Federal Government having result, in the discharge of runoff of pollutants shall comply with all Federal, State, interstate and local requirement, administrative authority, and process and sanctions respecting the control and abatement of water pollution in the same manner and extent as any non-governmental entity in accordance with section 313 of the CWA.”

Furthermore, Title 22, Section 22-22-1 *et seq.*, Code of Alabama 1975, includes as its purpose “...to conserve the waters of the State and to protect, maintain and improve the quality thereof for public water supplies, for the propagation of wildlife, fish and aquatic life and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses; to provide for the prevention, abatement and control of new or existing water pollution; and to cooperate with other agencies of the State, agencies of other states and the federal government in carrying out these objectives.”

Under ADEM Administrative Code Chapter 335-6-10, ADEM has promulgated water quality standards, including narrative and numeric criteria, to “protect, maintain and improve the quality” of the waters of the State of Alabama. *Id.*

USACE’s regulations mandate that “Federal facilities shall comply with all federal, state, interstate, and local requirements in the same manner and extent as other entities.” ER 1110-2-8154 at 2 (Water Quality and Environmental Management for Corps Civil Works Projects). Through these regulations, the USACE has committed “to develop and implement a holistic, environmentally sound water quality management strategy for each project.” *Id.* The regulations recognize that “the management of [Corps] projects affects environments distant from [their] property boundaries and is influenced by actions of others also distant from [their] properties.” *Id.* Thus, the regulations dictate that “Corps management responsibilities extend throughout the area influenced by and influencing the water” that the Corps manages. “The thrust of [the Corps’] policy is to protect all existing and future uses including assimilative capacity, aquatic life, water supply, recreation, industrial use, hydropower, etc.” *Id.*

Section 8 of the regulation describes the management of USACE projects and states, in part:

Divisions should adopt and implement the following general water quality management objectives for all Corps water resource projects:

- a. Ensure that water quality, as affected by the project and its operation, is suitable for project purposes, existing water uses, and public health and safety and is in compliance with applicable Federal and state water quality standards.”

...

- k. Ensure that the project and its operation offer the lowest stress possible to the aquatic environment.

ER 1110-2-8154 at 3-4

The USACE’s proposed action fails to comply with the foregoing obligations of the Corps. The DEIS details numerous adverse downstream environmental impacts that will result from reduced flow conditions and increased water withdrawals and treated wastewater returns. ADEM questions the validity of these analyses and argues that the impacts could be more adverse, and that there could be other negative environmental impacts not pointed out in the DEIS. ADEM’s concerns are based on the fact that the flow and water quality models used are inaccurate and the actual impacts have not been evaluated and are thus unknown (See comment 1). Rather than complying with its obligation to “protect all existing and future uses including assimilative capacity,” the Corps also suggests that the State will dictate that existing permit holders may have to restrict their discharges in order to alleviate the impacts of the Corps’ proposed action. ADEM submits that the Corps is obligated to comply with its own regulations and other applicable laws to protect existing uses and to avoid causing or contributing to adverse downstream environmental conditions.

3. The USACE has proposed no water quality monitoring plan (as required by ER 1110-2-8154) to ensure that the PAA does not cause or contribute to violations of Alabama’s water quality standards, nor Georgia or Florida’s water quality standards, or otherwise result in adverse downstream environmental impacts.

The DEIS specifically states that adverse effects to the environment are likely and recognizes that changing conditions may necessitate updates to the Water Control Manual for the ACF, but there is no mention of specific monitoring plans to detect these changes. USACE regulations at ER 110-2-8154 (Water Quality and Environmental Management for Corps Civil Works Projects) describes specific management objectives for all USACE projects, including the development and implementation of a water quality data collection program for each project.

Section 8 of the regulation provides:

Division-wide water quality management programs are required. Specific water quality management objectives must be developed by the districts for each

#### Responses to ACF093 - ADEM

- D. Section 2.1.1.3 of the draft EIS describes monitoring for water quality control in the ACF Basin, including ongoing monitoring largely accomplished by others. Additionally, section II of the Master WCM describes water quality monitoring occurring in the basin. USACE requirement to meet downstream state water quality flow standards on systems authorized for navigation is caveated. Improvement of downstream conditions is an objective for all authorized USACE projects and, when consistent with project purposes, has been the subject of extensive consideration and dialogue with interested parties for a number of years. USACE water quality monitoring efforts are described for each project in their respective WCMs, specifically in sections 4-08; 5-02; 7-07; and 8-04.

D



project, and procedures must be outlined and implemented to meet those objectives. These objectives will be included in the project water control plans. These plans must be reviewed and updated as needed but not less than every 10 years. The plans must achieve environmentally sustainable overall use of the resource. The water quality management plans should be scoped to include all areas influencing and influenced by the project. Divisions must ensure that water quality management is an integral part of the water control management program. Division water control/quality elements are responsible for approval of deviations from water control manuals and should provide guidance in developing water quality data collection activities. Divisions should adopt and implement the following general water quality management objectives for all Corps water resource projects:

- a. Ensures that water quality, as affected by the project and its operation, is suitable for project purposed, existing water uses, and public health and safety and is in compliance with applicable Federal and state water quality standards.

...

- k. Ensure that the project and its operation offer the lowest stress possible to the aquatic environment.

ER 1110-2-8154 at 3-4

This regulation provides additional detail on the necessary elements of a water quality data collection program and states: "A continuing water quality data collection program is necessary for each Corps project. This data collection is essential in order to understand and manage the environmental resources of the Corps' water projects effectively." *Id.* At 4. Objectives of the water quality data collection program are detailed in Section 10. *Id.* At 4-5. The Corps' preferred alternative fails to include an adequate water quality management program as Corps regulations require. *Id.* at 3.



### Specific Comments

1. Section 6.1.2.4.1, Page 6-138 – In the first paragraph of the No Action Alternative discussing nitrogen criteria USACE states, “TN concentrations at Lake Lanier and West Point Lake are not to be less than 4 mg/L...” This statement is incorrect. The State of Georgia’s TN criterion for Lake Lanier and West Point Lake are actually not to exceed 4.0 mg/L in the photic zone. The DEIS should accurately reflect Georgia’s Water Quality Standards. E
  
2. Section 6.1.2.5.1, Page 6-148 – In the first paragraph of the No Action Alternative section discussing chlorophyll *a* criteria, USACE states, “According to Georgia water quality standards, the growing season average of chlorophyll *a* for West Point Lake should not exceed 27 µg/L at the LaGrange water intake (Table 2.1-29).” This statement is incorrect. The State of Georgia’s chlorophyll *a* criterion for West Point Lake at the LaGrange water intake is actually not to exceed 24 µg/L. The DEIS should accurately reflect Georgia’s Water Quality Standards. F
  
3. Section 6.1.2, Various Pages & Figures – The use of different definitions of the growing season throughout the evaluation of alternatives is confusing and makes a direct comparison of impacts in different portions of the ACF Basin problematic. The USACE has incorrectly defined the State of Alabama’s growing season as applied to its water quality standards regulations as April – November (see Appendix K – HEC-5Q Water Quality Modeling Report, Section 4.3.3, Page 4-18). ADEM water quality regulations at Chapter 335-6-10-.11(c) The Chattahoochee River Basin, define the growing season for purposes of implementing chlorophyll *a* criteria as April through October. Including model results for November in the calculation of median growing season concentrations will skew the results downward for most parameters and upward for dissolved oxygen. The DEIS should accurately reflect Alabama’s Water Quality Standards. G

### Responses to ACF093 - ADEM

- E. Table 2.1-29 accurately states the standard. Text in section 6.1.2.4.1 has been updated to correct the error. Correction of this typographical error does not affect the evaluation of effects.
  
- F. This is a typographical error in the draft EIS. The draft EIS presented Georgia’s water quality standards approved in 2012. EPA approved the most recent standards for Georgia in May 2015. Table 2.1-29 and section 6.1.2 have been updated. Correction of this typographical error does not affect the evaluation of effects.
  
- G. Section 6.1.2 evaluates nutrients based on an April–October growing season consistent with ADEM standards as illustrated in draft EIS figures. Text in section 6 has been updated to clearly indicate that the growing season evaluation is from April–October. The HEC-5Q appendix has been updated to state that the correct growing season is from April–October. DO and temperature were evaluated based on a period from May–October to coincide with the needs of aquatic species. However, the determination of effects in the EIS for temperature is on the basis of an evaluation of annual results. Updates to the use of May–October or April–October would not alter the determination of impacts presented in the draft EIS.

## Responses to ACF094 – Ron Veal

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**From:** RON VEAL  
**Sent:** Friday, January 15, 2016 3:06 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Lake lanier/ Chatahoochee waterflow

I think the answer to all these lawsuits about the water flow out of lake Lanier, West Point etc. all the way down the Chattahoochee river is quite simple. After the lakes are filled, you let no more water out than the amount coming in. In times of drought there will be less output and in times of heavy rain there will be more output. That is what would occur naturally if this were a free flowing river system. This way Florida and Alabama should have no complaints. The dams were not put in to give them a steady supply of water, but for either reservoirs or for flood control depending on the dam.

A

- A. The dams in the ACF Basin were authorized by Congress and constructed by USACE to serve multiple water resource purposes. The proposal to let no more water out than the amount coming in would not provide for the requirements of the various authorized project purposes and runs counter to congressional intent of the projects.

Ron Veal

**From:** Mark Sramek - NOAA Federal  
**Sent:** Friday, January 15, 2016 2:16 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] PD-EI (ACF-DEIS)  
**Attachments:** NOAA NMFS SERO ACF DEIS Comments January 15, 2016.pdf

Attached, please find NOAA's National Marine Fisheries Service (NMFS) comments on the Update of the Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin in Alabama, Florida, and Georgia, Draft Environmental Impact Statement (DEIS) and the accompanying water supply storage assessment for Lake Lanier, Georgia. The NMFS provides the comments pursuant to the National Environmental Policy Act, the Magnuson-Stevens Fishery Conservation and Management Act, and the Endangered Species Act.

Thank you for the opportunity to comment on the DEIS.  
 Mark



**UNITED STATES DEPARTMENT OF COMMERCE**  
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**JAN 1 5 2016**

Colonel Jon J. Chytka, Commander  
 U.S. Army Corps of Engineers, Mobile District  
 Attention: PD-EI (ACF-DEIS)  
 P.O. Box 2288  
 Mobile, Alabama 36628-0001

Dear Colonel Chytka:

NOAA's National Marine Fisheries Service (NMFS) has reviewed *Update of the Water Control Manual for the Apalachicola-Chattahoochee-Flint (ACF) River Basin in Alabama, Florida, and Georgia, Draft Environmental Impact Statement (DEIS)* and the accompanying water supply storage assessment (WSSA) for Lake Lanier, Georgia. The U.S. Army Corps of Engineers (USACE) proposes to modify operation of several federal water-control projects in the ACF River Basin. The result would be an updated Master Manual for the basin and a new water control manual (WCM) for each federal project. The NMFS provides the comments below pursuant to the National Environmental Policy Act (NEPA), the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and the Endangered Species Act (ESA). The comments include an essential fish habitat (EFH) conservation recommendation and a conservation recommendations to further the ESA consultation.

#### **National Environmental Policy Act (40 C.F.R. §1503.2)**

The NEPA directs federal agencies to comment on draft environmental impact statements when the federal agency has jurisdiction by law or special expertise with respect to any environmental impact resulting from an agency action, such as the USACE modifying the Water Manual and WCMs for the ACF River Basin.

#### Description of the Proposed Action

The ACF River Basin comprises 19,573 square miles in the States of Alabama, Florida, and Georgia. The USACE operates five reservoir projects in the basin: (1) Buford Dam and Lake Lanier; (2) West Point Dam and Lake; (3) Walter F. George Lock, Dam, and Lake; (4) George W. Andrews Lock, Dam, and Lake; and (5) Jim Woodruff Lock and Dam and Lake Seminole. Federal legislation enacted in the 1940s establish the purpose of each of these federal projects. Section 2 of the River and Harbor Act of 1945 approved a plan for developing flood control, hydroelectric power generation, water supply, and navigation projects within the ACF River Basin. Project objectives and purposes also derive from authorities applicable to all USACE reservoirs, such as fish and wildlife conservation under the Fish and Wildlife Coordination Act and conservation of threatened and endangered plants and animals and the habitats in which they are found under the ESA. Consequently, the USACE operates and manages the ACF River Basin projects as one system for (1) flood risk management, (2) hydropower, (3) navigation, (4)



fish and wildlife conservation, (5) recreation, (6) water quality, and (7) water supply. The DEIS and WSSA address a request from the State of Georgia, initiated May 16, 2000, and modified on January 11, 2013, to reallocate water storage within Lake Lanier to satisfy future water supply needs of several communities in northern Georgia through approximately the year 2040. Allocating additional water within Lake Lanier to water supply requires reducing the amount of water available for other project purposes.

#### Development of Screening Criteria and Alternatives Analysis

The USACE used stakeholder comments in response to the 2008, 2009, and 2012 scoping announcements to identify water resource and management issues for consideration during development of the new Master Manual and project-specific WCMs. From this input, the USACE developed six objectives for its management of ACF River Basin projects: (1) define reservoir action zones on a scientific basis, (2) develop and implement a basin-wide reservoir drought operation plan, (3) reduce or eliminate the chances of prematurely returning to drought operations, (4) reduce or eliminate the adverse effect of system operations on federally listed threatened and endangered species, (5) improve system performance to achieve congressionally authorized project purposes, and (6) increase the reliability of navigation in the ACF Rivers.

To accomplish these objectives, the USACE developed a suite of specific water management measures affecting (1) reservoir water level guide curves and action zones, (2) drought operations, (3) minimum flows at Peachtree Creek, (4) hydropower operations, (5) navigation water depths, (6) basin inflows, (7) fish and wildlife conservation actions, and (8) water supply demands. DEIS Table ES-2, “Summary of Water Management/Water Supply Alternatives,” groups various combinations of these water management measures into the seven specific water management alternatives evaluated in the DEIS. Based on these evaluations, the USACE identified Water Management “Alternative 7H” Preferred Action Alternative (PAA).

#### Recommendation

While DEIS Table ES-6, “Summary of Effects,” indicates the USACE has determined there would be “No change” to estuarine fish and aquatic resources from any of the alternatives, including PAA 7H, the NMFS believes this conclusion is not based on a thorough review of the effects of freshwater inflows on Apalachicola Bay. Water flows less than 5,000 cubic feet per second (cfs) below the Jim Woodruff Lock and Dam may result in adverse impacts to downstream estuarine resources, including EFH, in Apalachicola Bay (Livingston et al., 2000; Meeter et al., 1979; Wang et al., 2008; Wilber 1992). DEIS Section 6.1.1.3.9, “Alternative 7H (PAA),” states the PAA is expected to trigger drought operations 22 times over the modeled period of record, seven times more often than the No Action Alternative (3 occurrences). Drought operations would be in effect 18.1 percent of the modeled period, which would be equivalent to 158 months, or a total of about 13 years of the 73-year period of record (versus 6.7 percent of the time for the No Action Alternative). The NMFS recommends the revised DEIS quantify the effects of these reduced freshwater inflows to Apalachicola Bay and specifically its oyster productivity.

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A. Alternative 7H was the Proposed Action Alternative in the draft EIS. This alternative is no longer a viable alternative because of revised water supply needs provided by the state of Georgia in December 2015. Alternative 7K is the new selected PAA and is described in the final EIS. Based upon HEC-ResSim modeling, extreme drought operations under the PAA would be triggered one time and would result in flows between 5,000 and 4,500 cfs during about 3 months over the 73-year hydrologic period of record, or about 0.3 percent of the days. Under the NAA, extreme drought operations would not be triggered. Occurrences of flows between 5,000 and 4,500 cfs under the PAA would be extremely rare and of short duration when they occur. Thus, the effect of operations under the PAA on conditions in Apalachicola Bay would be negligible. It is correct that drought operations would be triggered more frequently under the PAA. However, the PAA reflects a more proactive approach to operate in a slightly more conservative manner to conserve reservoir storage with the onset of drier conditions in the basin, while continuing to fulfill project purposes and water needs throughout the ACF Basin. The drought plan reflected in the PAA will tend to make the ACF Basin more drought resilient than under current operations (i.e., the NAA), particularly when the most severe drought conditions occur in the basin. However, median flows for the NAA and PAA as shown in Figure 6.1-54 of the final EIS are essentially the same. Additionally, Table 6.1-12 of the final EIS shows the percent of days over the modeled period of record in which flows would equal or exceed selected flow values at the gage in Chattahoochee, Florida. On the basis of the data in this table, the difference between the percent of days in which flow is greater than or equal to 6,000 cfs for the NAA is 0.5 percent as compared to the PAA. Efforts to assess the effects of water management activities on salinity in the Apalachicola Bay were conducted as part of the ongoing coordination between the USACE Mobile District and the USFWS under the Fish and Wildlife Coordination Act.

### Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)

DEIS Section 6.4.2.3, "Apalachicola Bay and Estuary," briefly describes the importance of freshwater flows in maintaining the delivery of material and energy critical to estuarine productivity and abundant and diverse estuarine habitats. The DEIS states anticipated changes in salinity and other water quality parameters in Apalachicola Bay and estuary would be negligible, given little to no change in flows in the Apalachicola River at Chattahoochee, Florida. Further, the USACE concludes because neither the flows nor the quality of the water entering Apalachicola Bay from the river would change appreciably under any of the proposed alternatives, no EFH for commercial fisheries in Apalachicola Bay would be adversely affected by implementing any of the alternatives.

The NMFS believes this conclusion is premature and remains concerned with potential impacts to oyster, seagrass, and estuarine emergent marsh habitats within Apalachicola Bay by reduced flows of 5,000 cfs or less below the Jim Woodruff Lock and Dam. Longley (1994) lists the roles of freshwater inflows in sustaining estuarine ecosystems such as the Apalachicola Bay and estuary:

- Dilution of seawater. A primary role of freshwater inflows is the mixing with seawater to create brackish conditions typical of most bays and estuaries utilized by many commercially and recreationally important fish and invertebrate and associated prey species during some portion(s) of their life cycle.
- Dilution of contaminants. Freshwater inflow into bays and estuaries carry contaminants from land surfaces throughout the watershed. Consequently, contaminants are transported into bays and estuaries where they are diluted through a greater volume of water.
- Creation and maintenance of nursery habitats. Freshwater inflows are critical to the creation and maintenance of estuarine habitats which provide food and protection to many organisms including finfish, crustaceans, birds, reptiles, and mammals throughout the watershed.
- Reduction of metabolic stresses in estuarine dependent organisms. Salinity concentrations in bays and estuaries are variable; many estuarine organisms have a range of tolerable salinity concentrations based on their ability to regulate concentrations of internal body salts relative to environmental salinity. Drastic changes in salinity regimes can impair an organism's ability to maintain osmotic balance triggering metabolic stresses.
- Transportation medium for beneficial sediments and nutrients, cycling, and the removal of metabolic waste. Freshwater flows provide for the transport of suspended particulate matter including sediments, detritus, and organisms such as phytoplankton.
- Creation of a resource partitioning mechanism among estuarine plants and animals. The combined effects of inflow on salinity, temperature, and turbidity influence the distribution of ecological producers and consumers in the estuary.
- Distribution and vertical movement of organisms in the water column related to stimulation of positive phototaxis (upward, toward light) or negative geotaxis (upward, against gravity) behavioral response. Changes in salinity, triggered by changes in freshwater inflows, have been shown to have an effect on phototaxis and geotaxis behaviors of estuarine organisms, especially in larval finfish and crustaceans.

- Creation of cutting and filling mechanisms affecting erosion and deposition in the bays and estuaries. Freshwater inflows play an important role in the physical characteristics of bays and estuaries because they influence circulation patterns and can increase the erosion of bay shorelines and habitats. Freshwater inflows also provide a transport mechanism for the accretion of sediments on bay shorelines or deposition in the open bay.
- Creation of a salt wedge and mixing zone in concert with tidal action.
- Transportation of remote nutritive materials into bays and estuaries as a function of topography, rainfall, and watershed drainage area size.
- Migration and orientation of migratory organisms including penaeid shrimps and many marine fishes. Movement of organisms throughout estuaries is dependent on seasonal physical cues including tides, temperature, photoperiod, and salinity. Commercially valuable shrimp are dependent on currents and tides for their large scale movement within the estuary.
- In addition to the estuarine organisms deemed as beneficial or benign by humans, noxious organisms such as naturally occurring red tide algae and the pathogenic bacteria *Vibrio* and fecal coliforms are present in estuaries. Populations of these undesirable organisms are limited by certain physical conditions including temperature and salinity. In the case of fecal coliform bacteria, freshwater inflow serves as a mechanism to transport bacteria from the watershed to the bay. In the case of red tide and *Vibrio vulnificus*, adequate freshwater inflows can inhibit their growth, preventing adverse impacts to finfish, shellfish, and humans.

The ecology of Apalachicola Bay is closely associated with freshwater input from the Apalachicola River, and the distribution of epibenthic organisms in the estuary follow a spatial relationship with river flows (Livingston, 2008). Further, observations by Livingston (2008) indicated reduced freshwater flows into the Apalachicola estuary resulted in increased salinity thus allowing offshore marine species to enter Apalachicola Bay and increasing predation pressure on estuarine species. Livingston calculated a time-averaged model for summer oyster mortality by running a regression analysis with averaged predictors derived from a hydrodynamic model and observed mortality rates throughout the Apalachicola estuary. Results of the model indicated high salinity, low velocity current patterns, and the proximity of oyster habitats to entry points of high salinity Gulf water into the bay contributed to increased oyster mortality from disease and predation (Livingston et al., 1999). Through influencing salinity levels and current patterns throughout the bay, freshwater flow from the Apalachicola River was determined to be important in controlling oyster mortality.

### EFH Discussion and EFH Conservation Recommendation

Estuarine habitats in Apalachicola Bay are identified by the Gulf of Mexico Fishery Management Council (GMFMC) as EFH for postlarval, juvenile, and subadult shrimp; postlarval, juvenile, and adult red drum; postlarval, juvenile, and adult gray snapper; juvenile red and gag groupers; and juvenile and adult yellowtail and lane snappers. The area has also been designated as EFH by the NMFS for highly migratory species including bull, lemon, and bonnethead sharks. Detailed information on federally managed fisheries and their EFH is provided in the 2005 Generic Amendment of the Fishery Management Plans for the Gulf of

Mexico prepared by the GMFMC and in the 2009 Amendment 1 to the Consolidated Atlantic Highly Migratory Species Fishery Management Plan prepared by the NMFS as required by the Magnuson-Stevens Act.

In addition to being designated as EFH for federally managed species, oyster reefs, seagrass, and estuarine emergent marsh provide nursery, foraging, and refuge habitat for other economically important fish and shellfish, such as blue crab, bay scallop, bluefish, striped mullet, spotted seatrout, and tarpon, as well as for forage species such as pinfish, killifish, and gulf menhaden. Seagrass also provides important fishery support functions, including (1) providing a physically recognizable structure and substrate for refuge and attachment, (2) improving water quality by trapping sediments and assimilating pollutants, (3) preventing erosion, (4) collecting organic and inorganic material by slowing currents, and (5) being a source of nutrients and detrital matter to adjacent waters (Zieman and Zieman 1989). Oyster reefs serve as habitat by providing structure, protection, and trophic support to juvenile and adult finfish. The voids between and among the oysters and other sessile organisms provide refuge for larval and juvenile fish (see *Final Environmental Impact Statement for the Generic Essential Fish Habitat Amendment of the Gulf of Mexico 2004*, available from [gulfcouncil.org](http://gulfcouncil.org)).

The 1996 amendments to the Magnuson-Stevens Act require NMFS, regional fishery management councils, and other federal agencies to identify and protect important marine and anadromous fish habitat. The EFH provisions of the Magnuson-Stevens Act support one of the nation's overall marine resource management goals – maintaining sustainable fisheries. Critical to achieving this goal is the conservation and enhancement of the quality and quantity of suitable marine and estuarine fishery habitats. The NMFS believes flows in the Apalachicola River should be maintained above the minimum 5,000 cfs under the new water control plan. Minimum flows greater than 5,000 cfs are more supportive of the EFH within Apalachicola Bay and estuary. Further, improved river flows during the migratory season for diadromous fish species (January to May) would also support restoration of spawning areas used by Alabama shad, Gulf sturgeon, and striped bass.

#### EFH Conservation Recommendation

Section 305(B)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH Conservation Recommendations for any federal action or permit which may result in adverse impacts to EFH. Therefore, the NMFS recommends the following to ensure the conservation of EFH and associated fishery resources:

- The Master Manual and project WCMs allow a minimum flow of 5,000 cfs at the Jim Woodruff Lock and Dam to minimize impacts resulting from reduced freshwater flows to the Apalachicola Bay and estuary.

Please be advised the Magnuson-Stevens Act and the regulation to implement the EFH provisions (50 CFR Section 600.920) require the USACE to provide a written response to this letter. That response must be provided within 30 days and at least 10 days prior to final agency action. A preliminary response is acceptable if final action cannot be completed within 30 days. The USACE's final response must include a description of measures to be required to avoid, mitigate, or offset the adverse impacts of the activity. If the response is inconsistent with the

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- B. As discussed in section 6.1.1.2.5 of the EIS, the simulation of ACF project operations over a 73-year hydrologic period of record indicates that flows for the PAA would be expected to equal or exceed 5,000 cfs of 99.8 percent of days (see Table 6.1-9 in the EIS). Flows would decline below 5,000 cfs to no less than 4,500 cfs for a period of only about 60 days over the entire period of record under the most severe drought conditions. Flows slightly below 5,000 cfs for that short period would not likely have an effect on river or bay resources, or designated essential fish habitat. The minimum flow provisions contained in the revised interim operating plan would be continued; however, the PAA would trigger a one-time extreme drought release of 4,500 cfs. Since final agency action on the Master WCM update and EIS was not scheduled to occur until several months after the close of the comment period on the draft EIS (January 30, 2016) and USACE received a letter from the National Marine Fisheries Service (NMFS) dated January 15, 2016, USACE provided a preliminary response to the NMFS by letter dated February 2, 2016.

EFH Conservation Recommendation, the USACE must provide an explanation of the reasons for not implementing the recommendation.

#### **Endangered Species Act (16 U.S.C. §§ 1531 et seq.)**

The ESA-listed Gulf sturgeon (*Acipenser oxyrinchus desotoi*) occurs in the ACF River Basin and Apalachicola Bay. Alabama shad (*Alosa alabamae*), which the NMFS is in the process of evaluating for listing under the ESA, also occurs in the ACF River Basin. The NMFS expects to complete the 12-month status review for Alabama shad in June 2016.

#### Gulf sturgeon

Gulf sturgeon is under the joint jurisdiction of the NMFS and the U.S. Fish and Wildlife Service (FWS). The FWS has jurisdiction when Gulf sturgeon are in freshwater environments, and the NMFS has jurisdiction in estuarine and marine environments. The NMFS will rely on the FWS to more thoroughly comment and provide recommendations on the DEIS for Gulf sturgeon protection and conservation in the riverine portions of their range. The NMFS will provide recommendations for Gulf sturgeon protection and conservation in the estuarine portion of their range.

Gulf sturgeon spawn in freshwater and then migrate to feed and grow in estuarine and marine waters. In the fall, movement from the rivers into the estuaries and associated bays begins in September (at water temperatures around 23 degrees Centigrade) and continues through November (Foster and Clugston, 1997; Huff, 1975; Wooley and Crateau, 1985). The adult and large subadult sturgeon have spent at least six months fasting or foraging sparingly on detritus in the rivers; therefore, it is presumed they immediately begin foraging upon reaching the estuary. Telemetry data indicate Gulf sturgeon are found in high concentrations near the mouths of their natal rivers with individual fish traveling relatively quickly between foraging areas where they spend an extended period of time (Edwards et al., 2007; Edwards et al., 2003).

Most subadult and adult Gulf sturgeon spend the cool winter months (October/November through March/April) in bays, estuaries, and the nearshore Gulf of Mexico (Clugston et al., 1995; Fox et al., 2002; Odenkirk, 1989). Tagged fish have been located in well-oxygenated shallow water (less than 7 meters) areas that support burrowing macro invertebrates (Craft et al., 2001; Fox and Hightower, 1998; Fox et al., 2002; Parauka et al., 2001; Rogillio et al., 2007; Ross et al., 2001; Ross et al., 2009). These areas may include shallow shoals 5 to 7 feet (1.5 to 2.1 meters), deep holes near passes (Craft et al., 2001), unvegetated sand habitats such as sandbars, and intertidal and subtidal energy zones (Abele and Kim, 1986; Menzel, 1971; Ross et al., 2009). Subadult and adult Gulf sturgeon overwintering in Choctawhatchee Bay (Florida) were generally found to occupy the sandy shoreline habitat at depths of 4 to 6 feet (2 to 3 meters) (Fox et al., 2002; Parauka et al., 2001). These shifting, predominantly sandy, areas support a variety of potential prey items including estuarine crustaceans, small bivalve mollusks, ghost shrimp, small crabs, various polychaete worms, and lancelets (Abele and Kim, 1986; AFS, 1989; Menzel, 1971). Preference for sandy habitat is supported by studies in other areas that have correlated Gulf sturgeon presence to sandy substrate (Fox et al., 2002).

A wide range of threats continue to dictate the status of Gulf sturgeon and their recovery. Modification of habitat by dams, the operation of dams, and dredging particularly impact Gulf sturgeon. The presence of dams reduces the amount of available spawning habitat or entirely impedes access to it, while ongoing operation of these dams affects downstream water quality parameters such as depth, temperature, velocity, and concentration of dissolved oxygen (DO). In addition, operation of these dams has the potential to affect estuary salinity and thus the microbenthic community of the estuary. This could affect prey availability for Gulf sturgeon in these important foraging habitats.

Specific to the DEIS, the Apalachicola River and Apalachicola Bay are identified as critical habitat for Gulf sturgeon (March 19, 2003; 68 FR 13370). The Apalachicola River was identified as critical habitat due to suitable spawning and resting habitat, confirmed spawning, and young-of-year and juvenile feeding. The Apalachicola Bay provides winter feeding migration habitat for the Apalachicola River Gulf sturgeon subpopulation. Observed substantial weight gains and the presence of suitable habitat for prey items indicate that Gulf sturgeon are feeding while within the Bay (Wooley and Crateau, 1985; Odenkirk, 1989).

#### *Conservation Recommendation*

The NMFS recommends maintaining water release levels from Jim Woodruff Lock and Dam at the levels in the Revised Interim Operation Plan discussed in the DEIS (pages 2-70 to 2-74). The seasonally variable minimum flow rates currently utilized at the Jim Woodruff Lock and Dam provide riverine spawning and resting habitat and young-of-year and juvenile feeding habitat for Gulf sturgeon. Additionally, these flow rates minimize impacts to winter feeding and migration habitat resulting from reduced freshwater flows to the Apalachicola Bay and estuary. The NMFS believes these seasonally implemented minimum flow rates are essential to the conservation of Gulf sturgeon.

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C. The seasonally variable minimum discharge rates at Jim Woodruff Lock and Dam described for current ACF operations would not change under the PAA (see Table 5.4-3 in the EIS).

#### Alabama shad

Alabama shad prefer cooler river waters with high concentrations of DO and high pH levels (Mickle et al., 2010). Though there have been no studies on the thermal tolerances of Alabama shad, other *Alosa* species cannot tolerate higher water temperatures (greater than 32 degrees Centigrade); therefore, it is likely that Alabama shad cannot tolerate high water temperatures (Beitinger et al., 2000).

Water temperatures between 18 and 22 degrees Centigrade and moderate current velocities (0.5 to 1.0 meters per second) promote successful spawning (Laurence and Yerger, 1967; Mills, 1972). It is hypothesized that spring floods (increased river flows) are a vital environmental cue for spawning adults as well as an important aspect for successful hatching. If environmental circumstances are unfavorable, mature Alabama shad will sometimes abandon their upstream spawning movement (Young, 2010).

Smaller, younger shad tend to prefer the slightly shallower, more protected areas over sandbars, while the older, larger shad can be found in channel and bank habitats. Sandbars within the bends of rivers that are less than 2 meters deep often support juveniles in the early summer (Mickle, 2010). As the fish grow, they move to bank (greater than 2.5 meters deep) and channel



(1.5 to 2.5 meters deep) habitats, though the shift is not always consistent (Mickle, 2010). Presumably, this allows the juveniles to avoid predators, fulfill foraging needs, and provides suitable thermal ecology (Byström et al., 2003; Mickle et al., 2010; Mickle, 2010). This species also appears to prefer clear water with minimal benthic algal growth (Buchanan, 1999).

The ACF River Basin is believed to have the largest population of Alabama shad in its range. Population estimates fluctuated widely from 2005 to 2013 and the greatest range in number was between two successive years. In 2011, 26,193 Alabama shad were estimated to be in the system. The following year (2012), the estimate of Alabama shad peaked at 122,578, followed by the lowest estimate of 2,039 individuals in 2013. Sammons and Young (2012) noted that the population sizes of species in the *Alosa* genus commonly fluctuate widely. Researchers in the ACF River Basin believe Alabama shad populations may be responding to conservation efforts in the system (Schaffler et al., 2015). They also note that population variability may be linked to environmental conditions. For example, Sammons and Young (2012) believe that heavy rainfall in 2009 may have led to strong year classes in 2010 and 2012.

The DEIS discusses fish passage at the Jim Woodruff Lock and Dam between March and May to facilitate downstream to upstream passage of Alabama shad and other anadromous fishes. Fish passage is accomplished slightly differently each year by the USACE, but generally two fish locking cycles are performed each day between 8 a.m. and 4 p.m.; one in the morning and one in the afternoon. While studies are ongoing to determine the most appropriate technique and timing for the locks, the DEIS indicates the number of lock cycles per day will not change.

#### *Conservation Recommendations*

The NMFS recommends the USACE continue its operation of the lock passage at the Jim Woodruff Lock and Dam to allow Alabama shad access to upstream spawning habitat. The NMFS believes the Flint River currently has the appropriate water velocities based on successful spawning of Alabama shad in the river. Therefore, we recommend that the water velocities be maintained to ensure a 0.5 to 1.0 meters per second velocity in the Flint River. As discussed above, it is believed that Alabama shad populations may be responding to conservation efforts in the system (Schaffler et al., 2015) and we believe the lock passage is an essential component of these conservation efforts. Additionally, the recommended current velocities promote successful spawning (Laurence and Yerger, 1967; Mills, 1972) and as discussed in the DEIS, recent otolith analysis of juvenile Alabama shad from the Apalachicola River indicated that 97 percent of the juvenile Alabama shad were spawned in the Flint River (Schaffler et al., 2015). The NMFS believes fish passage at the Jim Woodruff Lock and Dam and appropriate water velocities in the Flint River are necessary for the conservation of Alabama shad.

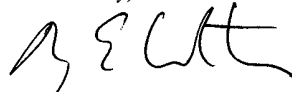
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D. Under the PAA, fish passage operations at Jim Woodruff Lock and Dam would continue as described in section 2.1.1.2.4.4 of the draft EIS. USACE does not control water velocities in the Flint River. No additional feature of the PAA would have an effect on water velocities in the Flint River.

## Closing

Thank you for the opportunity to comment on the DEIS. Please direct questions or comments on Magnuson-Stevens Act issues to Mark Sramek at (727) 824-5317 or Mark.Sramek@noa.gov. Please direct questions or comments on ESA issues to Mr. Jason Reuter at (727) 824-5350 or Jason.Reuter@noaa.gov.

Sincerely,



Roy E. Crabtree, Ph.D.  
Regional Administrator

cc: F/SER – Strelcheck  
F/SER – Silverman  
F/SER2 – McGovern  
F/SER3 – Bernhart  
F/SER4 – Fay  
F – Leathery  
NOAA– Kokkinakis

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**From:** Jim Franks  
**Sent:** Wednesday, January 20, 2016 11:18 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Water Levels

I would like to be able to put my dock in the deep water side of my property but have been unable to get a decision out of the Corps since 2000. They say they need an environmental evaluation to move ahead and the local Mgr. does not want a dock where I would like to put it (where the previous owner had the dock but did not renew their dock approval). My dock is presently am in a shallow cove where for every one foot of water being dropped or raised I have to move the dock 22 feet to stay in the water. When the winter level of 628 is reached we have quite a mud view. I would like to see the Corps set a level for summer and winter and hold to it instead of making the lake a "yo-yo" lake....up and down and up and down numerous times. I would think that 630 for the winter would be a more sensible number and for the summer the 635 is fine.

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James R. Frankse

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#### Response to ACF096 – Jim Franks

- A. Addressing individual permit issues at USACE reservoirs is outside the scope of this Master WCM update process.
- B. The West Point Dam and Lake project is a multipurpose reservoir, a man-made facility for the storage, regulation, and controlled release of water; it was authorized by Congress and designed to serve several authorized purposes. Congress approved a conservation pool that allowed for large changes in elevation. The reservoir receives a varying inflow from the Chattahoochee River and its tributaries upstream of West Point Dam, and varying amounts of water are released during the day, months, and years to serve the multiple authorized water resource needs both within West Point Lake (e.g., water supply, recreation) and downstream (e.g., flood risk management, hydropower). As a result of the varying inflows and amounts of water released to support the varying authorized purposes, the water surface elevation of West Point Lake fluctuates. Winter pool levels at West Point Lake generally follow the established guide curve for the project. The winter drawdown in the guide curve provides additional flood storage capacity to fulfill the congressionally authorized flood risk management purpose of the project; the 628 guide curve was established to provide flood protection for downstream communities. As stated in in section 4 of the draft EIS, "It is not the purpose of this EIS to investigate the feasibility of eliminating or reducing the level of flood protection afforded downstream communities by West Point Lake." Therefore, an increase in the winter guide curve level was not considered.

[Response to ACF097 – Terri Jondahl](#)

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**From:** Terri Jondahl  
**Sent:** Monday, January 18, 2016 10:19 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Comments to EIS WCM Jan 2016.pdf  
**Attachments:** Comments to EIS WCM Jan 2016.pdf

Please see attached comments.

Thanks.

**Terri Jondahl**  
CEO



Links to Our Social Media





5411 Cole Road  
Buford, Georgia, USA 30518

January 18, 2016

U.S. Army Corps of Engineers, Mobile District  
Attn: PD-EI (ACF-DEIS)  
PO Box 2288  
Mobile, AL 36628

RE: COMMENTS – DRAFT EIS AND WATER CONTROL MANUAL FOR APALACHICOLA-  
CHATTAHOOCHEE-FLINT RIVER BASIN

Please consider these two important issues in review of the EIS/WCM:

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1. Allow for increasing full pool elevation to 1073 feet to provide for added water storage which is a logical means for increasing reservoir capacity at lowest possible cost, while also increasing the baseline level of water for management during future drought conditions.

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2. Adopt a policy or process that would provide an incentive for the return of high quality water to Lake Lanier from sources like Gwinnett County's F. Wayne Hill Water Resource Center. Providing credit for high quality return flows is a needed incentive that would benefit both Lake Lanier and the entire downstream river system. This additional return flow to the system would allow the Corps of Engineers increased flexibility in managing the overall lake/river system and could minimize some adverse impacts, such as low lake levels, during future drought conditions.

B

Thank you for your consideration.

Terri Jondahl  
CEO  
CAB Incorporated  
And Lake Lanier Homeowner

- A. As stated in section 4.1.1, the Master WCM update has been conducted to determine how the federal projects in the ACF Basin should be operated for their authorized purposes, in light of current conditions and applicable laws. Raising the top of the conservation pool at Lake Lanier would require reallocating storage from the flood control pool and would adversely affect the level of flood risk management provided by the project. One of the screening criteria described in EIS section 1.4.4 was to maintain at least the current level of flood risk management. Accordingly, raising the conservation pool at Lake Lanier by 2 ft would not meet this criterion and was not carried forward.
- B. It appears the commenter is suggesting that USACE provide credit to a water supply withdrawer for return flows. Providing credit for return flows by water supply providers with Water Supply Storage Agreements is a nationwide issue being considered by USACE Headquarters. It is current USACE practice to not give credit for return flows to an individual water supply withdrawer.

**From:** Tommy Thompson  
**Sent:** Friday, January 15, 2016 8:00 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Environmental Impact Statement - Apalachicola River - Public Comment

As a life-long advocate for sustainability of our environment and the responsible use and distribution of our collective natural resources, it is my hope that the Corp of Engineers will review and amend the current water allocation to the Apalachicola River. This needs to be done to reflect the collective health, productivity and sustainability of the Apalachicola River, Floodplain, Bay and the Gulf. The water usage of northern Georgia continues to grow with abandon while the economy, environment and culture of the lower reaches of the watershed is damaged beyond repair by the current water-flow allocation. The Corp of Engineers' decisions, using environmental science and projections for sustainability, must reflect a fair and equal consideration to fish and wildlife conservation in the Apalachicola ecosystem as they do the other authorized purposes of the ACF river system. Please increase the water flow to the ACF watershed.

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Respectfully,

Tommy Thompson



Florida Kayak School  
 Tallahassee, FL  
[Blockedwww.FloridaKayakSchool.com](http://www.FloridaKayakSchool.com)

#### Response to ACF098 – Tommy Thompson

- A. Conservation storage in Lake Lanier, West Point Lake, and Walter F. George Lake is used to support several project purposes, such as hydroelectric power, navigation, and fish and wildlife conservation, without specifically allocating reservoir storage to any one of them. To reallocate a specific amount of storage in one or more of the ACF storage reservoirs from conservation storage to fish and wildlife conservation would require investigations that are outside the scope of the Master WCM update process. The fish and wildlife conservation project purpose applies directly to lands and waters associated with the USACE reservoirs. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay. Additionally, the PAA includes measures necessary to address the adverse effects of project operations on federally listed endangered or threatened species downstream of Jim Woodruff Lock and Dam. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- B. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

1/11/16

**COUNTY OF HOUSTON  
RESOLUTION NO. 2016-[ 0 ]**

**ARE SOLUTION BY HOUSTON COUNTY, ENCOURAGING AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS ESTABLISH FLOW TARGETS FOR THE MIDDLE AND LOWER CHATTAHOOCHEE RIVER.**

**WHEREAS**, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin for purposes including flood control, hydropower production, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

**WHEREAS**, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

**WHEREAS**, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

**WHEREAS**, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

**WHEREAS**, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

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**WHEREAS**, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff requirements without augmenting flows from its Chattahoochee River reservoirs; and

**WHEREAS**, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevation levels to maintain and even increase; and

**WHEREAS**, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

**WHEREAS**, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

**WHEREAS**, it is inconceivable that Congress, in authorizing the construction and

Response to ACF099 – Mark Culver

A. Comment noted.



operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

**WHEREAS**, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

A

**WHEREAS**, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

**WHEREAS**, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

**WHEREAS**, current operational guidelines of the Corps of Engineers and the draft Water Control Manual are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

**NOW, THEREFORE, BE IT RESOLVED BY HOUSTON COUNTY** that the U.S. Army Corps of Engineers is encouraged and requested:

(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

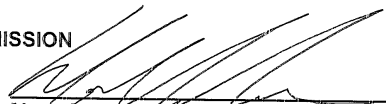
B

(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.


C

**ADOPTED**, this 11<sup>TH</sup> day of January, 2016, by the Houston County Commission, by unanimous vote.

**FOR THE HOUSTON COUNTY COMMISSION**

  
Mark Culver, Chairman

**ATTEST:**

  
Bill Dempsey, C.A.O.

#### Response to ACF099 – Mark Culver

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, or inflow, whichever is less” (emphasis added). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.

Res. No. *01-16*

**RESOLUTION OF HARRIS COUNTY, GEORGIA, ENCOURAGING  
AND REQUESTING THAT THE U.S. ARMY CORPS OF ENGINEERS  
ESTABLISH FLOW TARGETS FOR THE  
MIDDLE AND LOWER CHATTAHOOCHEE RIVER**

WHEREAS, Congress authorized the construction of locks and dams in the Apalachicola-Chattahoochee-Flint River Basin, which serve multiple purposes including flood control, hydropower production, water quality, recreation, and navigation from Columbus, Georgia, and Phenix City, Alabama, to and from the Gulf of Mexico; and

WHEREAS, flows from Corps of Engineers reservoirs on the Chattahoochee River provide important and necessary water resources for downstream municipalities and industries; and

WHEREAS, cities and businesses on both sides of the Chattahoochee River, in reliance and anticipation of flows from Corps of Engineers reservoirs, have made substantial investments in water infrastructure, industrial facilities, and steam-driven electrical generation; and

WHEREAS, the continued and future social, economic, and ecological vitality of communities along the Middle and Lower Chattahoochee River depends on the Corps of Engineers providing a steady and reliable source of flow; and

WHEREAS, the Corps of Engineers has accorded special legal status to flow targets at Peachtree Creek and the Jim Woodruff Dam; and

WHEREAS, from time to time, the Corps of Engineers is able to rely on uncontrolled flows from the Flint River to satisfy Jim Woodruff Dam requirements without augmenting flows from its Chattahoochee River reservoirs; and

WHEREAS, the Corps of Engineers has allowed flows in the middle and lower sections of the Chattahoochee River to fall to dangerously low levels while flows from Lake Lanier, the largest storage reservoir on the system, were controlled so as to allow reservoir elevations to maintain and even increase; and

WHEREAS, the Corps of Engineers justifies operating in that manner by citing a lack of a binding flow target in the Middle and Lower Chattahoochee River; and

WHEREAS, as a consequence, the Corps of Engineers favors one region at the direct expense of another, through water management decisions that allow one region to improve through the refilling of water storage while another region worsens due to diminished flow; and

WHEREAS, it is inconceivable that Congress, in authorizing the construction and operation of projects in the Apalachicola-Chattahoochee-Flint River Basin, intended for reservoir operations to favor one region over another; and

WHEREAS, despite protracted conflict and controversy over the management of Chattahoochee River reservoirs of the Corps of Engineers, the Governors of the States of Alabama, Florida, and Georgia in 2003 reached an agreement that set forth principles to allocate water flow among the three states; and

WHEREAS, those principles included flow requirements to be included in a water allocation among the states, to be met in part by state action and in part through operation of Corps of Engineers reservoirs; and

A

Response to ACF100 – Harry Lange

A. Comment noted.

WHEREAS, those targets included a flow of 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

WHEREAS, current operational guidelines of the Corps of Engineers and the draft Water Control Manual, are, therefore, inconsistent with both statutory requirements and flows agreed upon by the three states;

NOW, THEREFORE, BE IT RESOLVED BY THE COUNTY OF HARRIS that the U.S. Army Corps of Engineers is encouraged and requested:


(1) to establish and honor the flow requirements identified by the Governors of Alabama, Florida, and Georgia, namely, 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average at Columbus, Georgia, and 2000 cfs weekly average at Columbia, Alabama; and

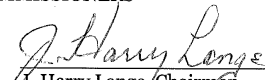
(2) to operate the Chattahoochee River reservoirs as an integrated system in the service of all the populations along the full extent of the river, without reliance on uncontrolled flows from the Flint River as a basis to reduce support for certain Chattahoochee River communities.

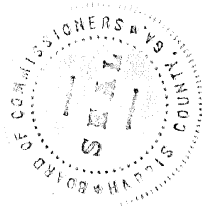
ADOPTED this 5<sup>th</sup> day of January, 2016, by the Board of Commissioners of Harris County, Georgia, by a vote of 5 to 0.

HARRIS COUNTY BOARD OF COMMISSIONERS

Attest:

  
Nancy D. McMichael, County Clerk

  
J. Harry Lange, Chairman



#### Response to ACF100 – Harry Lange

- B. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, or inflow, whichever is less” (emphasis added). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). The Alabama Office of Water Resources and the Southern Nuclear Operating Company have identified a daily average flow need of 2,000 cfs at Columbia, Alabama, to support continued operation of the Farley Nuclear Plant. Model results indicate that the daily average flow need at Columbia would be met 95 percent of the days over the period of record compared to 96 percent under the NAA.
- C. One of the key objectives of the Master WCM update process has been to develop a plan to operate the USACE reservoir projects more effectively as an integrated system in accordance with authorized project purposes. Even with an updated WCM, there will be a greater dependence on releases from the USACE Chattahoochee River reservoirs to meet minimum flow requirements for endangered species conservation below Jim Woodruff Lock and Dam under drought conditions, when uncontrolled flows from the Flint River could be abnormally low. Conversely, abnormally high Flint River flow conditions would not necessarily trigger a corresponding reduction in releases from the Chattahoochee River reservoirs, which would adversely affect middle and lower Chattahoochee River communities. Releases from the USACE Chattahoochee River reservoirs under normal or abnormally high flow conditions in the ACF Basin are governed by project guide curves, action zones, hydropower needs, and other considerations associated directly with each individual reservoir. The rules contain provisions for opportunities to refill the federal storage reservoirs on the Chattahoochee River during periods when endangered species flow requirements can be met primarily by Flint River flows. Refilling the reservoirs is a critical component of managing the system to fulfill authorized project purposes under various hydrologic conditions. During the refill period, USACE continues to manage releases from its reservoirs to fulfill authorized purposes throughout the system.



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS UNITED STATES ARMY MANEUVER CENTER OF EXCELLENCE  
1 KARKER STREET  
FORT BENNING, GEORGIA 31905-5000

IMBE-PW

11 January 2016

MEMORANDUM FOR Commander, South Atlantic District, United States Army Corps of Engineers, 60 Forsyth Street SW, Room 10M15, Atlanta, GA 30303-8801

SUBJECT: Fort Benning River Flow and Water Requirement

1. I request your assistance in establishing sustainable river flows in the Chattahoochee River to meet the water needs of the Maneuver Center of Excellence and Fort Benning (MCoE). Although we requested it during the public comment period in 2013 for the update to the ACF Water Control Manual (WCM), a Columbus/Fort Benning flow control is not included in the Draft Environmental Impact Statement for the WCM released by Mobile District on 1 October 2015. This is a significant vulnerability that should be rectified by adding the node to the WCM. Fort Benning relies on the Chattahoochee River for high-quality drinking water, wastewater assimilations, and recreation. The Corps of Engineers' ongoing denial of a flow control node places these priorities at risk for the Fort Benning/Columbus region and increases our vulnerability in terms of sustainable, reliable, and continuous flow of Chattahoochee River water necessary for current and future essential water needs of the region.

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2. I support Columbus Water Works' request for minimum flows at the requested Columbus node of 800cfs (continuous), 1350cfs (daily), and 1850cfs (weekly). Maintaining these flow rates will ensure no disruption to the Army's mission at Fort Benning. Additionally, these flows are supported by the Federal Energy Regulatory Commission's license issued to Georgia Power Company for the Middle Chattahoochee Hydro Project for the purpose of meeting flow for wastewater assimilation as mandated by the Clean Water Act.

B

3. The Corps of Engineers already has a solid track record of meeting these flow requirements the vast majority of the time. However, during the few times when the river does not meet these flows, we face the possibility of Clean Water Act violations and other risks. Therefore, I ask that our minimum requirements be ensured by the addition of a flow control node at Columbus/Fort Benning.

C

4. Point of contact is Mr. Taylor, Director, MCoE Directorate of Public Works, and may be reached via e-mail at [donald.c.taylor50.civ@mail.mil](mailto:donald.c.taylor50.civ@mail.mil) or phone 706-545-2330.

AUSTIN S. MILLER  
Major General, USA  
Commanding

Response to ACF101 - MG Austin Miller

A. A node for Columbus, Georgia, was included in the HEC-ResSim model (see Figure 2 of appendix E) and HEC-5Q model (See Figure 2.1 of appendix K) of the draft EIS. The authorized purposes of the federal ACF system do not include a specific directive to meet flow targets at Columbus. Nonetheless, USACE's modelling of the PAA over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9). . Flows at Columbus for the various alternative considered are discussed in section 6.1.1.2.3 of the draft EIS and water quality is discussed in various portions of section 6.1.2 of the draft EIS.

B. The authorized purposes of the federal ACF system do not include a specific directive to meet flow targets at Columbus, Georgia. Daily and weekly average flow targets at Columbus, are established in the 2004 Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., "a daily average target minimum flow of 1,350 cfs, or inflow, whichever is less" (emphasis added). Model results over the 73-year hydrologic period of record indicate that a daily average daily flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9).

C. A node for Columbus, Georgia, was included in the HEC-ResSim model (see Figure 2 of appendix E) and HEC-5Q model (See Figure 2.1 of appendix K). USACE already provides a minimum flow of 670 cfs at West Point to aid wastewater assimilation downstream of West Point dam. USACE meets this obligation 100% of the time. The authorized purposes of the federal ACF system do not include a specific directive to meet flow targets at Columbus, Georgia. Nonetheless, USACE's modelling of the PAA over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9).



### South Fulton Municipal Regional Water & Sewer Authority

P.O. Box 190 • 509 Toombs Street • Palmetto, GA 30268

January 15, 2016

Via Electronic Mail to: [ACF-WCM@usace.army.mil](mailto:ACF-WCM@usace.army.mil)

Commander

U.S. Army Corps of Engineers

Mobile District

Attn: PD-EI (ACF-DEIS), P.O. Box 2288, Mobile, AL 36628

Re: Comments regarding ACF-WCM

Commander:

The South Fulton Municipal Regional Water and Sewer Authority (Authority) was created in 2000 by the Georgia General Assembly (Georgia House Bill 1421) to secure a water supply for its three member cities: Fairburn, Union City and Palmetto. On February 13, 2009, the Authority filed a Section 404 Permit application for the construction of a reservoir on Bear Creek in Chattahoochee Hills, Georgia (the Bear Creek Reservoir). The Bear Creek Reservoir is in Chattahoochee Basin and is included in the ACF-WCM as a reservoir in the permitting process. The Authority reviewed the ACF-WCM and makes the following comments as it relates to the Bear Creek Reservoir:

#### ***1. Description of the Bear Creek Reservoir operations***

The operational scheme for the Bear Creek Reservoir stated in Section 2.1.1.1.6.0 (Page 2-51) of the Draft Environmental Impact Statement Vol 1 was revised at the request of the Georgia Environmental Protection Division in 2013. The approved operational scheme is as follows:

- Phase I: The reservoir will yield up to 7 mgd from inflows from Bear Creek and basin runoff. Minimum instream flows will be met by releases from the reservoir. There will be no supplemental pumping from the Chattahoochee River or any other source during Phase I.
- Phase II: A pump station will be constructed upstream of the Bear Creek confluence and water will be pumped from the Chattahoochee River directly into the reservoir to achieve the required yield up to 16.44 mgd. The maximum pump capacity required is 13.9 mgd.

This revised operational scheme was modeled in the Authority's "Report of Safe Yield and Downstream Impacts Analyses: Proposed Bear Creek Reservoir" dated March 27, 2013, revised October 11, 2013, and January 15, 2014 in consultation with the USACE (the "Report"). The

Response to ACF102 – South Fulton Municipal Regional Water & Sewer Authority

- A. Pertinent updates to the general description of the Bear Creek Reservoir project can be found in section 2 of the EIS. The permit application for the project was withdrawn by the applicant by letter dated September 8, 2015. Bear Creek Reservoir has been deleted from the HEC-ResSim model for the analysis presented in Appendix E the final EIS.

A

October 11, 2013, and January 15, 2014 in consultation with the USACE (the “Report”). The Report and associated methodology was approved by James Hawthorne, Chief, Water Management Section for the US Army Corps of Engineers Mobile District on January 13, 2014. The Report includes a safe yield analysis and downstream impacts analysis using the US Army Corps of Engineers approved ResSim Model. A copy of the Report is attached for your reference.

## 2. *Peachtree Creek Flows*

The Authority respectfully requests that prior to amending the current minimum flows at Peachtree Creek, special consideration be given to impacts to water quality and water quantity for downstream users. Within the EIS the USACE provides that setting minimum flow targets to ensure compliance with water quality standards is the responsibility of the State not the USACE. Although the State is responsible for determining water quality concerns, any decision to reduce downstream flows below Buford Dam must consider impacts to water quality given the wastewater discharges in the Chattahoochee River between Buford Dam and West Point Lake in accordance with the National Environmental Policy Act.

B

The EIS provides that Buford Dam will release a minimum of 650 cfs and Morgan Falls Dam will release any additional flows required to meet the water quality flow of 750 cfs. The USACE must examine the implications on water quality should Morgan Falls fail to meet the flow requirement given the USACE position that it will not modify release flows to meet State set water quality parameters for wastewater assimilation (ES-11). The EIS analysis assumes that release flow requirements for Buford Dam were made in accordance with the Chattahoochee River Management System to support the current authorized withdrawals by Atlanta area water providers of 277 mgd with an 82% return rate (227.14 MGD). Georgia’s 2013 request provided that there were permitted withdrawals of 245.7 MGD with an anticipated return rate of 78% (191.64 mgd). Please clarify the discrepancy in withdrawals and returns so as to avoid adverse impacts to water quality for downstream users.

C

## 3. *Bear Creek Reservoir Critical Yield*

The critical yield for the Bear Creek Reservoir is incorrectly stated in the EIS (Page 2-106) as 16 cfs and should be corrected to 16.44 MGD. The maximum diversion to the reservoir from the Chattahoochee River will be 13.9 mgd. Please let us know if you need additional information to reconcile these yield estimates (See Draft Environmental Impact Statement, Vol 1, Page 2-106).

D

## 4. *Downstream Flow Impact Analysis of Bear Creek Reservoir*

The Bear Creek Reservoir and the Glades Reservoir are combined for purposes of determining impacts on downstream flows within the EIS (Vol 1, Page 2-106). To provide perspective on the impacts to West Point critical yield, data on Glades independently as well as collectively with the Bear Creek project should be provided so as to differentiate the independent projects.

E

The downstream impacts of Bear Creek Reservoir with and without the Glades Reservoir were modeled in the “Report of Safe Yield and Downstream Impacts Analyses: Proposed Bear

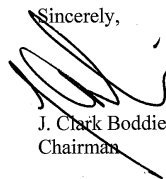
- B. The PAA includes a provision to seasonally reduce the minimum flow target at Peachtree Creek to 650 cfs from November through April, while retaining the current 750 cfs minimum flow target from May through October. GAEPD requested that the minimum flow at Peachtree Creek be reduced to 650 cfs during drought periods. In response to that request, USACE investigated reducing the minimum flow value to 650 cfs from November through April. USACE conducted an environmental assessment in 2008 and concluded that reducing the minimum flow requirement at Peachtree Creek to 650 cfs during that period would not have significant adverse effects on water quality. Over the past decade, USACE has reduced the minimum flow seasonally at Peachtree Creek several times. Monitoring data is available from GAEPD during those periods. Except for that minor change, the PAA anticipates that discharges from Buford Dam and the Georgia Power Company’s Morgan Falls Dam would continue as they have in the past. USACE knows of no reason that Georgia Power Company would not continue to operate Morgan Falls Dam as they have in the past if the PAA is implemented.
- C. Appendix 3 to Georgia’s 2013 request presented information regarding 2011 water supply withdrawals (rather than permitted amount) from the Chattahoochee River by four Metro Atlanta water utilities. The total average annual withdrawal rate for these four utilities was 245.7 mgd. In the HEC-ResSim modeling, 277 mgd was used as the gross river withdrawal by the Metro Atlanta water utilities for 2007. In the HEC-ResSim modeling, withdrawals at the 2007 level were used because that was the year of greatest consumption basinwide. Additional language has been included in the section 5.1.4.1 of the final EIS to clarify return rates used in the analysis.
- D. The text for the USACE critical yield analysis results in section 2.1.1.2.9.6 of the EIS has been revised to clarify that the yield in the USACE analysis for Bear Creek Reservoir differed somewhat from the South Fulton Municipal Regional Water and Sewer Authority yield analysis and permit application documentation. Nonetheless, Bear Creek Reservoir would have a negligible effect on critical yield at West Point Dam, even considering the different Bear Creek Reservoir yield values. The permit application was withdrawn by the applicant by letter dated September 8, 2015. Accordingly, Bear Creek Reservoir was deleted from the HEC-ResSim model for the analysis presented in Appendix E of the final EIS.
- E. Additional information was added to Appendix E of the final EIS to remove Glades Reservoir and Bear Creek Reservoir from the HEC-ResSim modeling



Creek Reservoir" referenced above and attached hereto. The Report concludes that the Bear Creek Reservoir would have a minimal impact on downstream flows (less than 11 cfs at West Point Lake) and on pool elevations at Lake Lanier and West Point Lake (less than 0.01 feet).

Thank you for your consideration of our comments. If you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,



J. Clark Boddie  
Chairman

cc: Mario Avery, Mayor, Fairburn  
Vince Williams, Mayor, Union City

## **REPORT OF SAFE YIELD AND DOWNSTREAM IMPACTS ANALYSES PROPOSED BEAR CREEK RESERVOIR**

**South Fulton Municipal Regional  
Water and Sewer Authority  
Fulton County, Georgia**

Schnabel Reference 11717017  
March 27, 2013  
(Revised October 11, 2013)  
(Revised January 15, 2014)



**REVISED SAFE YIELD ANALYSIS AND DOWNSTREAM IMPACTS ANALYSIS  
SOUTH FULTON MUNICIPAL REGIONAL WATER AND SEWER AUTHORITY  
PROPOSED BEAR CREEK RESERVOIR AND ANCILLARY FACILITIES  
FULTON COUNTY, GEORGIA**

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March 27, 2013  
(Revised October 11, 2013)  
(Revised January 15, 2014)

Wm. Thomas Craig, Esq.  
Law Office of Wm. Thomas Craig, LLC  
PO Box 1587  
1144 College Avenue  
Covington, GA 30015

**Subject: Revised Safe Yield Analysis and Downstream Impacts Analysis, South Fulton Municipal Regional Water and Sewer Authority, Proposed Bear Creek Reservoir and Ancillary Facilities, Fulton County, Georgia (Schnabel Reference 11717017)**

Dear Mr. Craig:

**SCHNABEL DAM ENGINEERING, INC.** (Schnabel) is pleased to present this revised report documenting the safe yield analyses for the proposed Bear Creek Reservoir Project, and the computed associated impacts of the proposed reservoir on West Point Lake and Lake Lanier.

**BACKGROUND**

The South Fulton Municipal Regional Water and Sewer Authority (Authority) was authorized during the 2000 session of the Georgia General Assembly to establish a regional approach to provide for the existing and future water supply needs of the cities of Fairburn, Palmetto and Union City located in the southern portion of Fulton County. In an effort to provide for the future water supply needs, the Authority began evaluating locations for a raw water supply reservoir. Upon completion of the evaluations, a location on Bear Creek approximately 2,400 ft upstream of the confluence with Chattahoochee River was selected for the construction of a dam to impound a 440-acre reservoir capable of meeting the future needs of the community. The location of the proposed reservoir is shown in Figure 1, and a USGS map of the site is shown in Figure 2.

Preliminary evaluations of the proposed Bear Creek Reservoir were performed by Keck & Wood, Inc. in 2003. In December 2005, Infratec Consultants (Infratec) completed a safe yield analysis for the proposed reservoir that established the normal operating level of the pool at EL 754 ft to attain a safe yield of 5.4 million gallons per day (mgd) assuming the Monthly 7Q10 as the minimum instream flow (MIF). In 2006 and 2007, large tracts of land were annexed into the cities of Fairburn, Palmetto and Union City. The future needs of the cities were revised in February 2008, which resulted in a 2050 water supply need of 16.44 mgd. Previous analyses by Infratec indicated that the safe yield of the proposed reservoir could be increased to 16.44 mgd by constructing a diversion system from the Chattahoochee River with a



Law Office of Wm. Thomas Craig, LLC  
Bear Creek Reservoir Safe Yield and Downstream Impacts Analyses

maximum diversion pump rate of 6.4 mgd, while also providing recirculation pumping of the Bear Creek required MIF to the base of the dam. However, the Infratec safe yield analyses were based on the correlated flows from the Snake Creek at Whitesburg Gage, which are only valid until construction of the Snake Creek Reservoir Dam began in 2000. Therefore, the safe yield analyses needed to be updated with unimpaired gage data containing the more recent drought of record (2007-09).

The Bear Creek Reservoir project is proposed for development in two phases. In the initial phase, the safe yield will be derived entirely from the Bear Creek reservoir and associated reservoir inflows. During the build-out phase, a pump station will be constructed on the Chattahoochee River that will divert flows to the reservoir.

#### SCOPE OF SERVICES

This study is based on Schnabel's Scope of Services dated September 19, 2011, and as modified by the following (copies of the documents are contained in Appendix A):

- US Army Corps of Engineers (USACE) Letter dated November 29, 2011.
- Conference Call (SAS-SAM-Wm. Thomas Craig-Schnabel) Summary of December 9, 2011, regarding Georgia Environmental Protection Division (GA EPD) requirements for analysis.
- Wm. Thomas Craig letter dated September 25, 2012, regarding modeling of the post-Glades Reservoir scenario relative to the Bear Creek analysis.

In summary, the scope and subsequent modifications are to perform a safe yield analysis and downstream impacts analysis as follows:

- Develop stream flows for Bear Creek and the Chattahoochee River (at the confluence with Bear Creek) from appropriate USGS Gages.
- Obtain MIF and Non-Depletable Flow (NDF) values for Chattahoochee River and Bear Creek from Georgia EPD.
- Perform safe yield analyses (for each phase) using USGS-derived flows. Evaluation period should include the 1999-2001 and 2007-2009 droughts.
- Perform safe yield analyses with and without consideration of the effects of the proposed Glades Reservoir.
- Define the long-term percentage of Chattahoochee River water relative to total supply for the ultimate safe yield condition, with and without Glades Reservoir.
- Define pre- and post-project discharges downstream of Bear Creek using the ultimate demand models (with and without the proposed Glades Reservoir).
- Develop flow-duration curves and streamflow hydrographs for drought years, highest pumping year, normal year, and wet year for inflow to West Point Reservoir.
- Evaluate the impacts to Lake Lanier and West Point Reservoirs by providing elevation-duration curves for each.

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Bear Creek Reservoir Safe Yield and Downstream Impacts Analyses

#### SAFE YIELD ANALYSIS

##### Definition

Reservoir safe yield is generally defined as the reliable withdrawal rate of water with acceptable quality that can be provided by reservoir storage through the critical drought period. The critical drought period in the State of Georgia is defined as the drought of record and in any given drainage basin can vary depending on reservoir size and other factors. The timeframe of 2007-2009 is generally recognized as the drought of record for the Chattahoochee River Basin in the Piedmont Region of Georgia.

Safe yield was simulated using a constant average annual demand. The justification for this method of modeling is that while total water demands after declaration of a drought condition are usually less than normal, this situation is typically offset by higher than average demands prior to declaration of the drought condition. Safe yield is dependent upon the storage and hydrologic (rainfall/runoff/evaporation) characteristics of the source and source facilities, the selected critical drought, upstream and downstream permitted withdrawals, and the MIF requirements.

##### Development of Flow Data for Analyses

As noted above, determination of safe yield requires an assessment of reservoir performance during the drought of record. A USGS stream gage was active on Bear Creek for a short time in the mid-1990s, which provided an opportunity to correlate flows in Bear Creek with an active, longer-record gage. Given that the Snake Creek stream gage has been impaired since 2000 due to the construction of Snake Creek Reservoir, an alternative gage was necessary for simulation of Bear Creek flows. At the suggestion of GA EPD, the New River Gage at GA 100 near Corinth (USGS 02338660) was used to simulate flows in Bear Creek. Table 1 provides a summary of the relevant data for the two gages.

Table 1: Gage Summary for Bear Creek Flows

USGS Gage	Gage Name	Record Period	Drainage Area (mi <sup>2</sup> )
02337320	Bear Creek At GA 70, Near Rico	04/29/95 – 01/12/98	27.5
02338660	New River at GA 100, Near Corinth	10/01/78 – Present	127

Two small wastewater treatment plants (WWTP) were in operation in the Bear Creek watershed during the active period for that gage. Approximate monthly WWTP discharges were obtained from EPD data and subtracted from the recorded flows. A scatter plot was then developed to compare concurrent daily unit discharges (cfs/mi<sup>2</sup>) for the Bear Creek and New River Gages. As shown in Figure 3, regression lines and equations were developed from the data to correlate the two data sets. The correlation equations were then applied to the full record period flows from the New River Gage to simulate long-term flows in Bear Creek.

Flows in the Chattahoochee River at the confluence with Bear Creek were estimated using the Chattahoochee River at Fairburn Gage. Table 2 provides a summary of the relevant data for the Chattahoochee Gage. The drainage area of the Chattahoochee River at the confluence with Bear Creek is approximately 2,130 mi<sup>2</sup>, with flow at the confluence estimated as a direct proportion of drainage areas.

Table 2: Gage Summary for Chattahoochee River Flows

USGS Gage	Gage Name	Record Period	Drainage Area (mi <sup>2</sup> )
02337170	Chattahoochee River at Fairburn	07/16/65 – Present	2060

The modeled safe yield period extends from 1978 to 2011, and includes four droughts (1981, 1986, 1999-2002, and 2007-2009). The previous analysis by Infracore Consultants, Inc. used the Snake Creek near Whitesburg Gage (USGS 02337500) to simulate Bear Creek flows. The Infracore model period extended from 1954 to 1999, omitting the 1999-2002 and 2007-2009 droughts because of the construction of Snake Creek Reservoir and the effects on the validity of the gage data. By letter dated July 1, 2011, the USACE requested that these more recent extreme droughts be included in the safe yield analyses. Additionally, the GAEPD reviewed regional gage data and determined that streams west of the Chattahoochee were non-conservative for estimating Bear Creek flows. The GAEPD instead requested that Schnabel use the New River at GA 100 Gage (USGS 02338660) to more appropriately simulate Bear Creek flows. The New River period of record begins in 1978. The use of the New River Gage, whose record begins in 1978, resulted in a shortened model period for the current model. However, the end of the model period was able to be extended to include recent droughts.

#### Reservoir Storage

Reservoir storage was calculated using GIS topography having a 2-ft contour interval (Figure 4). Stage-area and stage-storage curves are presented as Figure 5 in Appendix B, and regression equations relating storage to area and storage to elevation for use in the safe yield analyses are presented as Figure 6. At the proposed normal pool (EL 754 ft), the surface area of the reservoir is 440 acres and the total storage volume was computed as 2.19 BG. Dead storage was estimated to be 20% of total storage (0.44 BG) to allow for sediment storage and poor water quality in lower strata of the reservoir. Accordingly, approximately 1.75 BG of usable storage would be available for water supply. The bottom elevation of usable storage is estimated to be at EL 738 ft.

#### Minimum In-Stream Flow

Low flow requirements provided by the GA EPD are presented in Table 3. The Chattahoochee River values are a combination of Monthly 7Q10 and NDF values, while the Bear Creek values are separately indicated. The GA EPD Low Flow Requirements are the lesser of inflow and the values shown in the table below. As part of the project development, a gage will be provided upstream of the reservoir to measure inflows, and a gage will be installed downstream of the dam to measure discharges.

Table 3: GA EPD Low Flow Requirements

Month	Chattahoochee River Upstream of Bear Creek M7Q10 + NDF CFS (MGD)	Bear Creek Below Dam		
		NDF CFS (MGD)	MIF = A7Q10 CFS (MGD)	Total GA EPD Low Flow Requirement CFS (MGD)
January	1133 (732)	2.0 (1.3)	1.1 (0.7)	3.1 (2.0)
February	1174 (759)			
March	1221 (789)			
April	1154 (746)			
May	1058 (684)			
June	1002 (648)			
July	977 (631)			
August	946 (611)			
September	955 (617)			
October	970 (627)			
November	1001 (647)			
December	1056 (682)			

\*NDF = non-depletable flow (commitment to downstream permitted withdrawals)

#### Phased Development

As noted above and further described below, the Bear Creek Reservoir project is proposed for two phases of development:

- In the initial phase, the project safe yield will be derived entirely from the Bear Creek Reservoir and basin runoff.
- In the build-out phase, a pump station will be constructed on the Chattahoochee River (upstream of the Bear Creek confluence) that will divert flows to Bear Creek Reservoir.

#### Yield Assessments and General Reservoir Operations

A reservoir operations model was developed to incorporate daily gage data from the selected USGS Gages and reservoir shape parameters for calculation of storage and evaporation. The following assumptions were incorporated into the analysis for the estimation of safe yield:

1. For the build-out condition of the Bear Creek project, pump station diversions were assumed to be from the Chattahoochee River just upstream of the confluence with Bear Creek. Diversions were assumed to occur whenever the reservoir level fell below 80% of full reservoir storage, and diversions would continue until the reservoir storage returned to 80% of full reservoir storage. Pumped diversions were assumed to be bounded by pumping capacity and by flow restrictions on the Chattahoochee River (noted above).
2. Return flow from future South Fulton wastewater discharges upstream of the pump station were not included in the safe yield analysis. Return flows will be discharged to the Chattahoochee River upstream of the proposed diversion to Bear Creek Reservoir. However, to provide a level

of conservatism to the quantity of water available in the Chattahoochee River, the return flows were assumed to occur downstream of the diversion to Bear Creek Reservoir.

3. Evaporation loss was computed based upon historical evaporation rates recorded at the Allatoona Dam (Station 181). The maximum day of average evaporations for each month of the record period were used in the analysis. Lake evaporation was assumed to be equal to 70% of pan evaporation during each month and, conservatively, evaporation was not reduced by precipitation (this approach provides a level of conservatism when estimating safe yield). Evaporation loss for each day was computed as the product of surface area and the daily lake evaporation rate, with surface area approximated by a regression equation relating storage to surface area (Figure 5, Appendix B).
4. Total seepage losses would be less than the MIF requirements and; therefore, were not separately considered.
5. The dam will have an uncontrolled spillway crest; therefore, there would be no flood control operations.

For each day of the synthesized record, the yield analyses accounted for losses from the reservoir storage due to evaporation, NDF & MIF releases, spillway overflow, and water supply deliveries. Additions to storage include basin runoff and pumped diversions from the Chattahoochee River. The mass balance equation used in the analysis is as follows:

#### Reservoir Storage Balance

$$\text{Ending Storage} = \text{Initial Storage} - \text{Evaporation} + \text{Basin Runoff} - \text{Water Supply} - \text{Spillway Overflow} - \text{NDF} - \text{MIF} + \text{River Diversions (refill)}$$

If the reservoir is below 80% of the full storage volume at the end of the day (without diversion pumping), the lesser of the following volumes was computed and delivered to the reservoir:

- The amount of pumping needed to refill the reservoir to 80% capacity
- The designated diversion pumping capacity
- The diversion volume that can be accommodated considering Low Flow Requirements in the Chattahoochee River

The end-of-day storage volume was then assigned as the beginning storage for the next day. The daily operations are then repeated as described above.

The safe yield model also includes columns for pre- and post-Bear Creek and Chattahoochee River flows.

#### Results

The model, as described above, was run to estimate safe yield for the assumed conditions. Table 4 presents the results of the analyses.

**Table 4: Safe Yield Analysis Results Using  
 USGS Flows in Chattahoochee River**

Phase	Safe Yield (mgd)	Details
Initial (On-stream)	7.0	No diversion pumping. Reservoir releases for NDF & MIF.
Build-Out (Pumped Diversions)	16.44	10.6 mgd maximum diversion to reservoir. Reservoir releases for NDF & MIF.

For the build-out phase, the average pump rate on pumping days was calculated as 10.4 mgd, and the overall average for all days in the 1978- 2012 modeling period was calculated as 3.9 mgd. The percentage of water supply taken from the Chattahoochee River over the modeling period was calculated as 21%. This percentage is greater than the previously-calculated percentage of 7.0% contained in the Infracore analysis. The reasons for this are:

- The more recent droughts are more severe in intensity and duration than those contained in the previous analysis. Thus, the average streamflows during the current 1978-2012 analysis period are significantly less than average streamflows during the previous analysis (1954-1999).
- The current analysis period is shorter (because of available gage data), and therefore does not include many historical wet periods that were included in the previous analysis.
- EPD requires that both the MIF and NDF be released from the reservoir, neither of which was considered in the previous analysis for the build-out phase.
- Because of the previous reasons, the required diversions are greater, and the corresponding pump capacity is larger.

At the request of EPD, Schnabel evaluated whether the safe yield would be affected if diurnal variations in flow were considered. We obtained 15-minute flow data for the Chattahoochee River at Fairburn for the period of 2007-2009 and identified all days where any 15-minute increment fell below the sum of EPD-Required Low Flow, diversion pump capacity, and circulation pumping. For all identified days, we deleted any diversion pumping. The deletion of pumping for all diurnal low-flow days did not affect required pump capacity to attain the safe yield of 16.44 mgd.

#### Safe Yield Using ResSim Flows

Schnabel also evaluated the required pump capacity using Chattahoochee River flow data from the ResSim model (described below). Flow data was taken from the post-Bear Creek Reservoir scenarios (with and without Glades Reservoir) just upstream of the Bear Creek confluence, and the diversion to Bear Creek Reservoir was added to the computed flow to reflect flow prior to Bear Creek diversions. The developed flows were then inserted into the safe yield spreadsheet for estimation of the required diversion pump rates. The results are presented in Table 5.

**Table 5: Safe Yield Analysis Results Using  
 ResSim Flows in Chattahoochee River**

Scenario	Pump Capacity for Safe Yield = 16.44 mgd	Details
No Glades Reservoir	13.7 mgd	Reservoir Releases for NDF + MIF
With Glades Reservoir	13.9 mgd	

As can be seen by comparison of Tables 4 and 5, the required pump capacity increases by approximately 3.3 mgd when using ResSim flows versus USGS flows to calculate safe yield. An evaluation of the ResSim safe yield model indicates that between the end of May and mid-December 2007 (critical drawdown period), there were 46 and 49 days when pumping could not be performed for the No-Glades and With-Glades scenarios, respectively. This compares with 0 days of no pumping during the same time period when using USGS flows. This apparently indicates that the actual releases during the period referenced exceeded those that would be indicated by the ResSim modeled 2012 Revised Interim Operating Plan (RIOP). Regardless of the actual releases and for conservatism, we recommend that a pump capacity of 13.9 mgd be incorporated into the project.

#### DOWNSTREAM IMPACTS ANALYSIS

The USACE developed a reservoir simulation model for the Apalachicola-Chattahoochee-Flint (ACF) River Basin using HEC-ResSim 3.1 RC3 Build 42.exe for the period of January 19, 1939, to December 31, 2008. Schnabel requested the most recent HEC-ResSim model from the USACE through a Freedom of Information Act (FOIA) request and received the model provided above. The model reflects the 2012 RIOP for the ACF River Basin developed by the USACE in August 2010. The four major federal reservoir projects in the ACF system [Buford Dam (Lake Sidney Lanier), West Point Dam and Lake, Lake Walter F. George Dam and Lake, and Jim Woodruff Dam (Lake Seminole)] are operated by the USACE in general accordance with the RIOP.

#### ResSim Model Methodology

This section of the report documents the impact of the proposed Bear Creek Reservoir Project on West Point Lake, Lake Lanier (Buford), and Walter F. George Reservoir by incorporating the operational rules for the proposed reservoir, and Schnabel's hydrologic model for the ACF River Basin (with and without the proposed Bear Creek and Glades Reservoirs). Impacts to Lake Seminole can be found in the ResSim model.

The analysis includes the following steps:

1. Copy USACE's ACF ResSim model, dated August 2010.
2. Save alternative ProAction2 as PA2\_2007, and revise the withdrawals to be 2007 withdrawals instead of historic withdrawals. In addition, diversions at the Morgan Falls node were revised to use 2007 withdrawals. These changes were made in accordance with recommendations from USACE. PA2\_2007 will serve as the baseline alternative for this analysis.
3. Create the Pre-Bear network based on the USACE 2009 network. This network models existing conditions with nodes at the confluence of Bear Creek with the Chattahoochee River.

4. Add two nodes, Bear Creek and US Bear Creek, which are located at the confluence of Bear Creek and just upstream of the confluence, respectively.
5. Add withdrawals to the US Bear Creek node, which considers withdrawals between the Atlanta and Bear Creek nodes. Revise the net withdrawals (withdrawals less returns) at the Whitesburg node to include only withdrawals from Bear Creek to Whitesburg. The net withdrawal calculations are described in the Data Preparation section of this report.
6. Subdivide the Whitesburg drainage area into three separate subdrainage areas (see Figure 7):
  - a. US Bear Creek (680 mi<sup>2</sup>), which includes the Chattahoochee drainage area upstream of the confluence with Bear Creek, minus the drainage area at the Atlanta node.
  - b. Bear Creek (28.5 mi<sup>2</sup>), which includes the Bear Creek drainage area at the proposed Bear Creek Reservoir. Note that the Bear Creek drainage area will be excluded from the total area when calculating drainage area ratios.
  - c. Whitesburg (revised) (271.5 mi<sup>2</sup>), which is the Chattahoochee drainage area between Bear Creek and Whitesburg. It is calculated as the drainage area between Atlanta and Whitesburg, minus the drainage areas of US Bear Creek and Bear Creek.
7. Calculate inflow for Bear Creek, as described in the "Development of Flow Data for Analysis" section of this report.
8. Calculate local inflow for US Bear Creek and Whitesburg (revised), using the Whitesburg local inflow from the PA2\_2007 alternative, subtract the Bear Creek inflow, and use a ratio of the drainage areas. The ratios for US Bear Creek and Whitesburg (revised) are 0.71 and 0.29, respectively.
9. Add a diversion at the Buford\_IN node for the proposed Glades Reservoir. Note that this diversion will be set to zero for alternatives that do not consider Glades Reservoir. In accordance with the conference call of September 25, 2012, for the post-Glades Reservoir scenario, consider a constant net withdrawal of 21.75 mgd, which assumes a yield of 72.5 mgd with presumptive 70% return flows.
10. The Pre-Bear network is used for the Pre-Bear, Pre-Glades Scenario and the Pre-Bear, Post-Glades Scenario.
11. Create the Post-Bear network based on modifying the Pre-Bear network. The time series developed for the Bear Creek subbasin was taken from the Safe Yield Analysis Spreadsheet.<sup>1</sup> The modifications for the post-Bear network include:
  - a. Changing the Bear Creek flows from "inflow" to "spillway overflow" plus "letby" (NDF+MIF) from the proposed Bear Creek Reservoir. Note that different time series are used for spillway overflow for the Pre-Glades and Post-Glades Scenarios.
  - b. Adding a node, DS Bear Creek, downstream of the confluence of Bear Creek.
  - c. Adding a diversion to pump water from the Chattahoochee River into Bear Creek Reservoir. Note that different time series are used for diversion pumping for the Pre-Glades and Post-Glades Scenarios.
  - d. Adding return flows from the South Fulton Service Area to the Chattahoochee River downstream of the confluence with Bear Creek. Although return flows will be discharged to the Chattahoochee River upstream of the proposed diversion to Bear Creek Reservoir,

<sup>1</sup> Spreadsheet modeling for safe yield is more efficient and easily adjusted for unique situations. Schnabel's scope of work was defined in 2011, which indicated that the safe yield analyses would be performed by spreadsheet, and which would be used to develop ResSim input data. The USACE approved the scope and approach by letter dated November 29, 2011 and again during a December 9, 2011 conference call.

Law Office of Wm. Thomas Craig, LLC  
 Bear Creek Reservoir Safe Yield and Downstream Impacts Analyses

the return flows were assumed to occur downstream of the diversion to Bear Creek Reservoir, to provide a level of conservatism to the quantity of water available in the Chattahoochee River. After consulting with City officials and their water treatment engineer, return flows in excess of 80% are anticipated. A return flow of 70% was selected for conservatism.

12. The Post-Bear network is used for the Post-Bear, Pre-Glades Scenario and the Post-Bear, Post-Glades Scenario.
13. Discuss the hydrological impacts of the proposed Bear Creek Reservoir Project on Lake Lanier, West Point Lake, and Walter F. George Reservoir.
14. Plot hydrograph, flow-duration, and elevation-duration curves to identify the potential hydrologic impacts of the proposed Bear Creek Reservoir on Lake Lanier, West Point Lake, and Walter F. George Reservoir.

#### Estimate Net Withdrawals at Bear Creek and Whitesburg (Revised) Subbasins

GA EPD provided Schnabel with a spreadsheet that details the recorded withdrawals and returns located within the ACF River Basin. The spreadsheet identifies 9 withdrawal locations and 15 return flow locations between Peachtree Creek (PTC) and Whitesburg. Note that "PTC" in the spreadsheet corresponds with the "Atlanta" node in the ResSim model. Based on the EPD data, three of the withdrawal locations and four of the return locations are located between PTC and Bear Creek.

Using 2007 monthly net withdrawal data (withdrawals minus returns), Schnabel developed a ratio of net withdrawals between PTC and Bear Creek to net withdrawals between PTC and Whitesburg. To establish US Bear Creek subbasin net withdrawals, the ratio was multiplied by the Whitesburg subbasin net withdrawals from the PA2\_2007 alternative in the ACF ResSim model. The net withdrawals at the Whitesburg node were revised to subtract the net withdrawals accounted for at the Bear Creek node. Appendix C provides a summary of revised net withdrawals at Bear Creek and Whitesburg.

#### RESULTS

Various parameters were evaluated for the build-out phase (16.44 mgd) operation of Bear Creek Reservoir. Parameters evaluated to reflect the impact of the proposed reservoir on the Chattahoochee River include:

- Chattahoochee River inflow into West Point Lake (hydrographs and flow-duration curves)
- Bear Creek flow downstream of Bear Creek Reservoir (hydrographs and flow-duration curves)
- Lake Lanier (Buford), West Point Lake, and Walter F. George Reservoir pool elevations (elevation-duration curves)

The figures in Appendix D include flow data from four time periods, including:<sup>2</sup>

- The period of record (1979-2008)
- Drought Year/Highest Pumping Year (2007)

<sup>2</sup> We preliminarily plotted several Flow Duration curves using a log axis; however, the log axis did not provide improved comparisons (the two lines were nearly indiscernible from each other). Since low to moderate flows are the main interest for this project and these displayed well on the linear axis, linear axis were maintained on the figures.

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 Bear Creek Reservoir Safe Yield and Downstream Impacts Analyses

- Typical Wet Year (2005)
- Typical Normal Year (1991)

The analyses indicate that the average inflow to West Point Lake would be reduced by 2 to 11 cfs for the various conditions analyzed, as presented below:

**Table 6: Differences in West Point Lake Average Inflow due to Operation of Bear Creek Reservoir**

Period	No Glades Reservoir (cfs)	With Glades Reservoir (cfs)
Analysis Period (1979-2008)	-10	-9
Dry Year (2007)*	-3	-2
Wet Year (2005)	-8	-8
Typical Year (1991)	-11	-10

\*2007 is also the maximum pumping year

The analyses also indicate that Lake Lanier, West Point, and Walter F. George mean pool elevations are reduced by no more than 0.01 ft as indicated in Tables 7, 8, and 9 below.

**Table 7: Differences in Lake Lanier Mean Pool Elevation due to Operation of Bear Creek Reservoir**

Period	No Glades Reservoir	With Glades Reservoir
Analysis Period (1979-2008)	0.00	0.00
Dry Year (2007)*	-0.01	-0.01
Wet Year (2005)	-0.01	0.01
Typical Year (1991)	-0.01	0.00

\*2007 is also the maximum pumping year

**Table 8: Differences in West Point Mean Pool Elevation due to Operation of Bear Creek Reservoir**

Period	No Glades Reservoir	With Glades Reservoir
Analysis Period (1979-2008)	-0.01	-0.01
Dry Year (2007)*	0.00	0.00
Wet Year (2005)	0.00	0.01
Typical Year (1991)	-0.01	0.00

\*2007 is also the maximum pumping year

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 Bear Creek Reservoir Safe Yield and Downstream Impacts Analyses

**Table 9: Differences in Walter F. George Mean Pool Elevation  
 due to Operation of Bear Creek Reservoir**

Period	No Glades Reservoir	With Glades Reservoir
Analysis Period (1979-2008)	-0.01	0.00
Dry Year (2007)*	0.00	0.00
Wet Year (2005)	0.00	0.00
Typical Year (1991)	0.00	0.00

\*2007 is also the maximum pumping year

Flow differences in Bear Creek downstream of the dam are significant during low to moderate flow periods, and relatively insignificant during periods of high flow. The figures in Appendix D present the pre- and post-Bear Creek hydrographs and flow duration curves. As noted in Schnabel's letter of September 7, 2012, the backwater effects on Bear Creek from the Chattahoochee River are significant; therefore, the flow depth effects on Bear Creek are reduced by these backwater effects.

#### CONCLUSIONS

##### Safe Yield

The initial phase safe yield of the system is 7.0 mgd. This assumes that the lesser of inflow and the sum of NDF (1.3 mgd) plus MIF (0.7 mgd) is released from the reservoir. The build-out phase safe yield is 16.44 mgd, and assumes the lesser of inflow and MIF+NDF is released from the reservoir, and water from the Chattahoochee River is pumped to the reservoir. Using USGS flows for the Chattahoochee River, the required pump capacity is 10.6 mgd. Using ResSim flows for the Chattahoochee River, the required pump capacity is 13.7 and 13.9 mgd for the No-Glades and With-Glades scenarios, respectively. Flows for the Chattahoochee River as obtained from ResSim were imported into the spreadsheet model as a supplemental check on the diversion capacity required to obtain the project safe yield. For conservatism, we recommend that a pump capacity of 13.9 mgd be incorporated into the project design.

##### Downstream Impacts Analysis

Based on the simulation of both the long term and drought periods while adhering to the 2012 RIOP, the following conclusions have been reached regarding the impact of Bear Creek Reservoir on Lake Lanier and West Point Lake.

- The proposed dam and water supply withdrawal, at its proposed 16.44 mgd yield, would have a negligible impact on the flow in the Chattahoochee River and on Lake Lanier and West Point Lake pool elevations.
- The reduction in mean pool elevations for Lake Lanier and West Point Lake due to Bear Creek Reservoir is negligible for the entire period of record for both the Pre- and Post-Glades Reservoir conditions.
- The proposed dam has a significant effect on flows in Bear Creek during low to moderate flow periods, and notably smaller effect during periods of moderate to high flow. The effects on flow depth are lessened by Chattahoochee River backwater.

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 Bear Creek Reservoir Safe Yield and Downstream Impacts Analyses

#### LIMITATIONS

We have endeavored to prepare this report in accordance with generally accepted engineering practice and make no warranties, either express or implied, as to the professional advice provided under the terms of our agreement and included in this report.

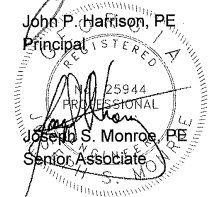
We appreciate the opportunity to be of service for this project. Please contact one of the undersigned if clarification is needed for any aspect of this report.

Sincerely,

**SCHNABEL DAM ENGINEERING, INC.**

*Melinda Dirdal*

Melinda L. Dirdal, PE  
 Project Engineer

*John P. Harrison*  
 John P. Harrison, PE  
 Principal  
  
*Joseph S. Monroe*  
 Joseph S. Monroe, PE  
 Senior Associate

MLD:JPH:DBC:PIW:JSM:hcf

- Appendix A: Scope of Services and Related Documentation
- Appendix B: Figures
- Appendix C: Data
- Appendix D: Results
- Appendix E: CD of Spreadsheets and ResSim Files

#### Distribution:

Law Office of Wm. Thomas Craig, LLC (12)  
 Attn: Mr. Wm. Thomas Craig

## APPENDIX A

### SCOPE OF SERVICES AND RELATED DOCUMENTATION

#### PROJECT BACKGROUND

The original yield and downstream flow studies were judged to lack robustness and clarity regarding many project operational issues, and the yield analyses were truncated, failing to include the two most severe droughts of record (1999 and 2007). These studies also provided insufficient information on in-stream flows, reservoir operating limits and Chattahoochee River diversion operations and limitations. Schnabel noted the same shortcomings in its review of these documents. Therefore, the safe yield and downstream flow studies will need to be redone to address The Mobile District Corps of Engineers' concerns and other identified issues. A well documented and defensible study and report are proposed for development.

#### SCOPE OF SERVICES

The following tasks will be performed.

- A. Development of streamflow basis for models
  - a. Correlate Snake Creek stream flows with other nearby gage(s) to synthetically extend the flow record to the present (Snake Creek flows after 1999 are impacted by Carroll County's Snake Creek Reservoir)
  - b. Correlate Bear Creek stream flows (short period of record available) with overlapping Snake Creek stream flows to develop a statistical basis for converting the extended Snake Creek record into a full synthetic stream flow record for use in performing the Bear Creek Reservoir safe yield and downstream flow analyses.
- B. Chattahoochee River stream flow record
  - a. Synthesize Chattahoochee River stream flow record just upstream of Bear Creek confluence from RES-SIM models (with and without the proposed Glades Reservoir Project (Hall County). To accomplish this, we will extract the inflow record from the Whitesburg node in the RES-SIM model, and adjust the flow to approximate Chattahoochee River flow upstream of Bear Creek. We will use the RES-SIM runs previously performed for the Glades Reservoir Simulation Model for the ACF Basin (June 2011). Subsequent to safe yield modeling (described below), the post Bear Creek flow will be adjusted back to the Whitesburg node basis for analysis (and input into RES-SIM by the COE, if desired).
  - b. Determine MIF for the Chattahoochee River just downstream of Bear Creek confluence
- C. Safe Yield Analysis
  - a. Establish Bear Creek minimum in-stream flow (MIF) for Phase I operation (No diversions from Chattahoochee River)
  - b. Determine return flow percentage based on Atlanta withdrawals and treatment plant discharges
  - c. Identify South Fulton treated wastewater discharge locations
  - d. Update reservoir elevation-area-storage relations based on updated topography
  - e. Develop safe yield analysis based on synthesized Bear Creek stream flows, updated storage information, Bear Creek MIF and other applicable data.
  - f. Run Yield model for Phase I (MIF release from reservoir) to determine initial yield

- g. Run Yield model for Phase II (MIF provided by circulation pumping from the Chattahoochee River) to determine yield enhancement
- h. Incorporate Chattahoochee River flows, MIF criteria and diversion pumping into the safe yield model to include capacity, definition of operating basis and inclusion of Chattahoochee River MIF requirements to define ultimate diversion pumping capacity to meet the unmet demand of 16.44 mgd. These analyses need to be run with and without consideration of the effects of the proposed Glades Reservoir.
- i. Define the percentage of Bear Creek water versus Chattahoochee River water for the ultimate safe yield condition. These parameters will need to be defined with and without consideration of the effects of the proposed Glades Reservoir.

D. Downstream Flow Study

- a. Use the ultimate demand models (with and without Glades Reservoir) to define pre- and post-project discharges downstream of Bear Creek confluence with the Chattahoochee River. These flows will also be adjusted back to the Whitesburg node basis over the full period of record. These flows will be presented in spreadsheet format for use in RES-SIM modeling by the COE, if desired.
- b. Develop flow-duration relation and pre- and post-project stream flow hydrographs downstream of Bear Creek for the Chattahoochee River to reflect net project impacts on river flows. These analyses need to be run with and without consideration of the effects of the proposed Glades Reservoir.
  - i. Provide a flow-duration curve
  - ii. Provide graphics for drought years
  - iii. Provide graphics for highest pumping year
  - iv. Provide graphics for typical normal year
  - v. Provide graphics for typical wet year
  - vi. Provide copies of the spreadsheet (including the ability to develop graphics for any period within the spreadsheet model)

E. Prepare a composite safe yield and downstream flow report

- a. well documented
- b. defensible
- c. verifies independence of operations (no Atlanta water purchases)

F. Schedule and Budget

- a. Draft report to Corps of Engineers for initial review in 8 weeks<sup>1</sup>, with final report issued within 2 weeks of receipt of comments.
- b. Estimated fees for analyses and report (not including meetings) is \$50,000

<sup>1</sup> If Mobile District Corp of Engineers is agreeable, draft work products will be forwarded at the completion of each major task to expedite reviews and acceptance.



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
SAVANNAH DISTRICT, CORPS OF ENGINEERS  
PIEDMONT BRANCH, LANIER FIELD OFFICE  
POST OFFICE BOX 528  
BUFORD, GEORGIA 30515

November 29, 2011

Regulatory Division  
SAS-2009-00225

South Fulton Municipal Regional Water & Sewer Authority  
Attention: Mr. John Miller  
Post Office Box 190  
Palmetto, Georgia 30268

Dear Mr. Miller,

I refer to your request of February 13, 2009, to obtain a Department of the Army authorization to impact 30.56 acres of wetlands, 5.55 acres of open water, and 40,413 linear feet of streams associated with the construction of the dam and the inundation of resources within the reservoir's normal pool foot print (754 msl). The proposed project is located latitude 33.450 and longitude 84.7544, along Campbellton-Redwing Road (Highways 70), northwest of the City of Palmetto, Fulton County, Georgia. This project has been assigned permit number SAS-2009-00225. Please refer to this number in all future correspondence concerning this project.

In response to our Joint Public Notice of March 18, 2009, advertising the project, we received comments from the Georgia Historic Preservation Division, US Environmental Protection Agency, US Department of Interior Fish and Wildlife Services, and comments from the public.

On July 5, 2011, US Army Corps of Engineers, Mobile District, provided additional comments on the safe yield analysis report dated January 2009. On September 9, 2011, Schnabel Engineering, the agent, Mr. William Thomas Craig, and the US Army Corps of Engineers Mobile and Savannah Districts met to discuss the safe yield analysis report. On September 30, 2011, Schnabel Engineering submitted a scope of work plan to us. On October 27, 2011, the Savannah District submitted the scope of work plan to the Mobile District for their review and comments.

On November 28, 2011, the Mobile District provided the following comments on the scope of work plan:

- a. The scope of work plan appears complete except for the downstream flow study. Please add the following sub-tasks to the downstream flow study.



b. Impacts to West Point Lake need evaluation. Please use the adjusted Whitesburg flows from item (D), to run the ResSim Model with and without Glades Reservoir. Please provide the ResSim watershed model to the US Army Corps of Engineers for review.

c. Please develop Buford and West Point pool elevation during curves similar to flow duration curves similar to flow duration curves describe in item (D) part b, to reflect the impact to Buford and West Point reservoirs.

d. We appreciate the opportunity to review the scope of work plan.

In accordance with our regulation governing the Regulatory Program of the US Army Corps of Engineers, we are furnishing these comments to give you an opportunity to provide the District Engineer a proposed resolution or rebuttal to objections prior to final action on the application (33 CFR 325.2(a)(3)). Please furnish any comment you wish back to this office so that we can include them in our evaluation no later than December 29, 2011.

A copy of this letter will be furnished to: Law Offices of Wm. Thomas Craig, Attention: Ms. Laura Benz, Post Office Box 1587, Covington, Georgia 30015 and Schnabel Engineering, Attention: Mr. David Campbell, 1380 Wilmington Pike, Suite 100, West Chester, Pennsylvania 19382.

If you have any further questions concerning this matter, please feel free to call me at (770) 904-2509.

Sincerely,

  
Natalie Edwards  
Project Manager, Piedmont Branch

#### Enclosures

1. Schnabel Engineering scope of work plan

#### SCOPE OF SERVICES

The following tasks will be performed.

- A. Development of streamflow basis for models
  - a. Correlate Snake Creek stream flows with other nearby gage(s) to synthetically extend the flow record to the present (Snake Creek flows after 1999 are impacted by Carroll County's Snake Creek Reservoir)
  - b. Correlate Bear Creek stream flows (short period of record available) with overlapping Snake Creek stream flows to develop a statistical basis for converting the extended Snake Creek record into a full synthetic stream flow record for use in performing the Bear Creek Reservoir safe yield and downstream flow analyses.
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  - a. Synthesize Chattahoochee River stream flow record just upstream of Bear Creek confluence from RES-SIM models (with and without the proposed Glades Reservoir Project (Hall County)). To accomplish this, we will extract the inflow record from the Whitesburg node in the RES-SIM model, and adjust the flow to approximate Chattahoochee River flow upstream of Bear Creek. We will use the RES-SIM runs previously performed for the Glades Reservoir Simulation Model for the ACF Basin (June 2011). Subsequent to safe yield modeling (described below), the post Bear Creek flow will be adjusted back to the Whitesburg node basis for analysis (and input into RES-SIM by the COE, if desired).
  - b. Determine MIF for the Chattahoochee River just downstream of Bear Creek confluence
- C. Safe Yield Analysis
  - a. Establish Bear Creek minimum in-stream flow (MIF) for Phase I operation (No diversions from Chattahoochee River)
  - b. Determine return flow percentage based on Atlanta withdrawals and treatment plant discharges
  - c. Identify South Fulton treated wastewater discharge locations
  - d. Update reservoir elevation-area-storage relations based on updated topography
  - e. Develop safe yield analysis based on synthesized Bear Creek stream flows, updated storage information, Bear Creek MIF and other applicable data.
  - f. Run Yield model for Phase I (MIF release from reservoir) to determine initial yield
  - g. Run Yield model for Phase II (MIF provided by circulation pumping from the Chattahoochee River) to determine yield enhancement
  - h. Incorporate Chattahoochee River flows, MIF criteria and diversion pumping into the safe yield model to include capacity, definition of operating basis and inclusion of Chattahoochee River MIF requirements to define ultimate diversion pumping capacity to meet the unmet demand of 16.44 mgd. These analyses need to be run with and without consideration of the effects of the proposed Glades Reservoir.
  - i. Define the percentage of Bear Creek water versus Chattahoochee River water for the ultimate safe yield condition. These parameters will need to be defined with and without consideration of the effects of the proposed Glades Reservoir.
- D. Downstream Flow Study

- a. Use the ultimate demand models (with and without Glades Reservoir) to define pre- and post-project discharges downstream of Bear Creek confluence with the Chattahoochee River. These flows will also be adjusted back to the Whitesburg node basis over the full period of record. These flows will be presented in spreadsheet format for use in RES-SIM modeling by the COE, if desired.
- b. Develop flow-duration relation and pre- and post-project stream flow hydrographs downstream of Bear Creek for the Chattahoochee River to reflect net project impacts on river flows. These analyses need to be run with and without consideration of the effects of the proposed Glades Reservoir.
  - i. Provide a flow-duration curve
  - ii. Provide graphics for drought years
  - iii. Provide graphics for highest pumping year
  - iv. Provide graphics for typical normal year
  - v. Provide graphics for typical wet year
  - vi. Provide copies of the spreadsheet (including the ability to develop graphics for any period within the spreadsheet model)
- E. Prepare a composite safe yield and downstream flow report
  - a. well documented
  - b. defensible
  - c. verifies independence of operations (no Atlanta water purchases)
- F. Schedule and Budget
  - a. Draft report to Corps of Engineers for initial review in 8 weeks<sup>1</sup>, with final report issued within 2 weeks of receipt of comments.

<sup>1</sup> If Mobile District Corp of Engineers is agreeable, draft work products will be forwarded at the completion of each major task to expedite reviews and acceptance.



1380 Wilmington Pike, Suite 100  
West Chester, PA 19382  
T/ 610-696-6066  
F/ 610-696-7771

### CONFERENCE CALL SUMMARY

<b>MEETING SUBJECT:</b>	Proposed Bear Creek Dam – South Fulton County		
<b>DATE:</b>	12/9/11	<b>PROJECT NO:</b>	11717017
<b>PARTICIPANTS:</b>	Natalie Edwards, <b>SAS</b> ; James Hathorne, <b>SAM</b> ; Tommy Craig and Laura Benz, <b>Wm. Thomas Craig</b> ; David Campbell and John Harrison, <b>Schnabel</b>		

#### NOTES:

A conference call was held on December 9, 2011, concerning the South Fulton Bear Creek Reservoir and downstream modeling. Schnabel had developed a Scope of Work which was reviewed by the COE in their letter of November 29, 2011. The modeling of Chattahoochee River flow in that scope predated conversations Schnabel had with Clay Burdette of GA EPD. For safe yield analyses, GA EPD requires the use of USGS-based flows in the Chattahoochee River rather than flows derived from the COE Res-Sim model. The conference call was held to confirm acceptability of the following, which differs from the scope previously submitted:

- The safe yield would be computed using flows developed from the Chattahoochee River USGS gages.
- The effect of Bear Creek on post development flow would be reflected in the Res-Sim model using net changes in Chattahoochee River flow derived from the safe yield spreadsheet, which in turn uses Chattahoochee River flows derived from USGS gage flows.

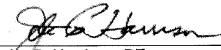
#### POINTS OF AGREEMENT / ACTION ITEMS:

James Hathorne agreed that the above modeling method could be used. However, he cautioned that if the critical drought period is the 1980's drought, then he would be concerned with the validity of the computed safe yield, since the river flows in the 1980s predated the RIOP. James suggested that a check be performed using the Res-Sim flows to confirm reservoir yield and pumping.

Natalie Edwards confirmed that the project team could correspond directly with James Hathorne, provided she is copied on all correspondence.

**COPY TO:** All Participants (email only)

**SIGNED:**

  
John P. Harrison, PE  
Principal

LAW OFFICES  
**WM. THOMAS CRAIG, LLC**  
 1144 COLLEGE AVENUE  
 POST OFFICE BOX 1587  
 COVINGTON, GEORGIA 30015

770 786-1320  
 FACSIMILE 770 786-1528

September 25, 2012

**VIA EMAIL & FEDEX**

Mr. Kevin Thames  
 Chief, Special Project Section, Piedmont Branch  
 1590 Adamson Parkway, Suite 200  
 Morrow, GA 30260

**Re: Required modeling for proposed Bear Creek Water Supply Reservoir  
 SAS-2009-00225**

Dear Mr. Thames,

We are in receipt of your September 20, 2012 correspondence pertaining to the downstream modeling parameters discussed on September 6, 2012. In an attempt to expedite the necessary modeling associated with the South Fulton Municipal Regional Water and Sewer Authority's (the "Authority") proposed Bear Creek Water Supply reservoir, the Authority's consultants requested the conference call to assure the modeling parameters implemented met U.S. Army Corps of Engineers' Mobile and Savannah District's expectations. Based on the September 6, 2012 telephone conference, the Authority will proceed modeling the portion of the Chattahoochee River in and downstream of Lake Lanier, examining flows both pre- and post-Glades Reservoir after implementing a presumptive constant Glades project yield of 72.5 mgd being withdrawn at the City of Gainesville's existing intake and adjusting for 70% return flows to Lake Lanier for a net average constant withdrawal of 21.75 mgd. This analysis will then be used to validate the Authority's safe yield of 16.44 mgd and cumulative effects of the proposed Bear Creek project.

The Authority will proceed with its analysis under these parameters upon its receipt of the most recent ACF model from the U.S. Army Corps of Engineers unless notified otherwise. If you feel further discussion is warranted, please contact me at (770) 786-1320.

Sincerely,



Laura Wahoske Benz

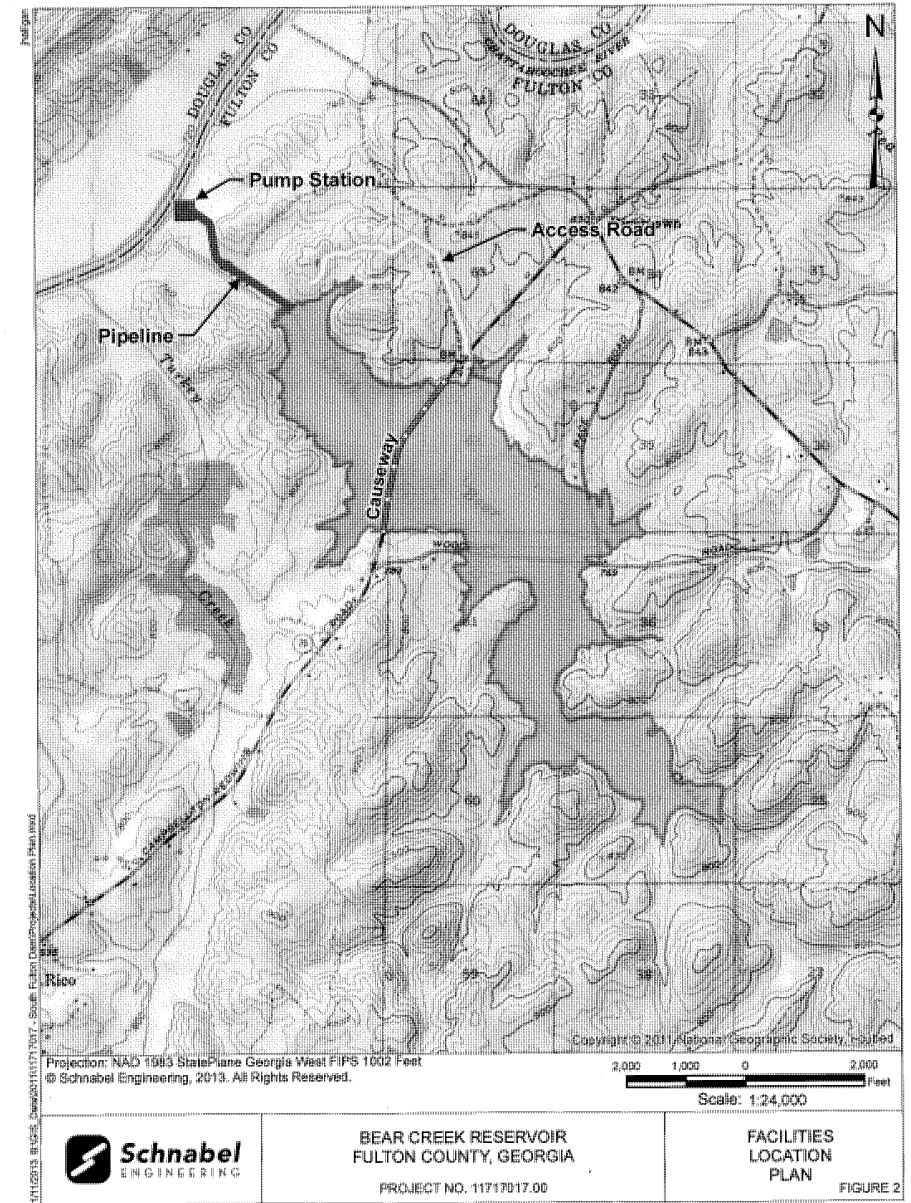
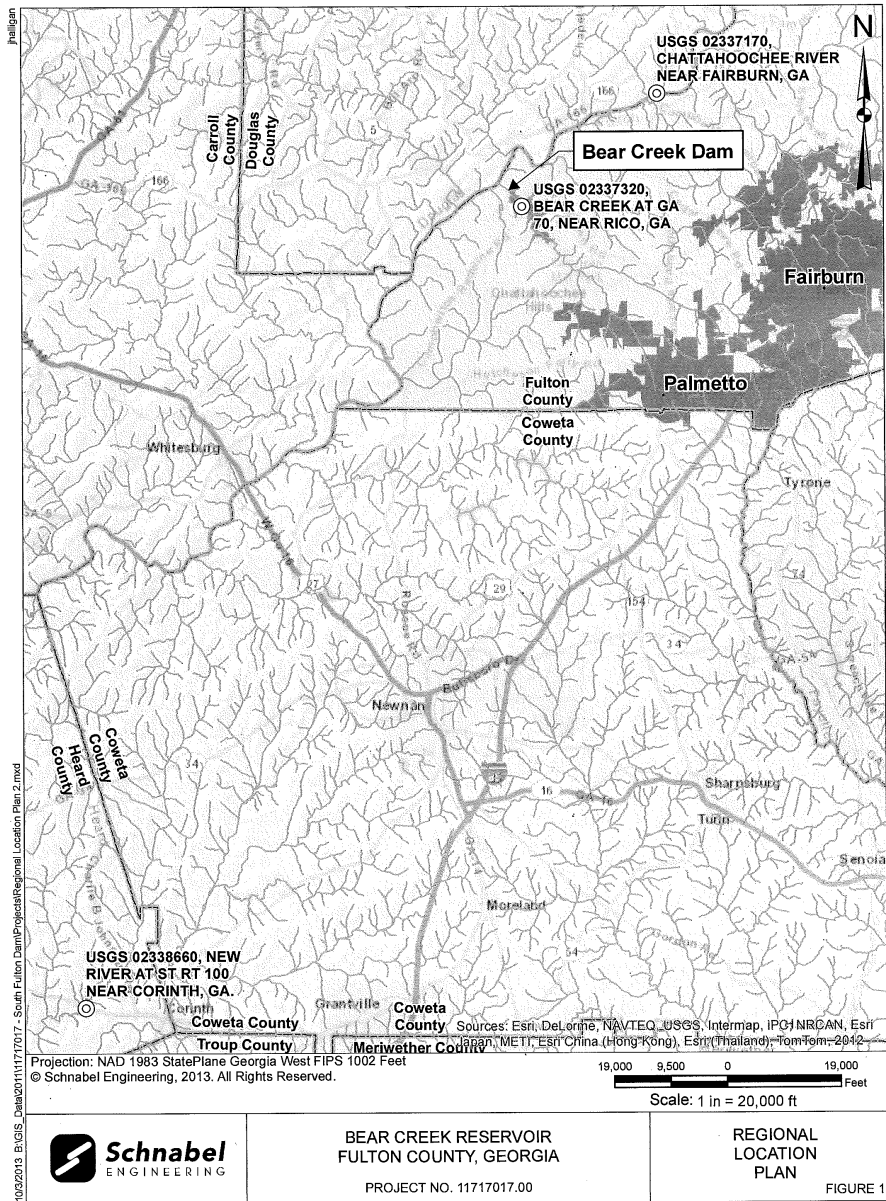
cc: Ms. Natalie Edwards, USACE Project Manager  
 Mr. Brian Jones, Chairman  
 Mr. John Harrison, Schnabel Engineering

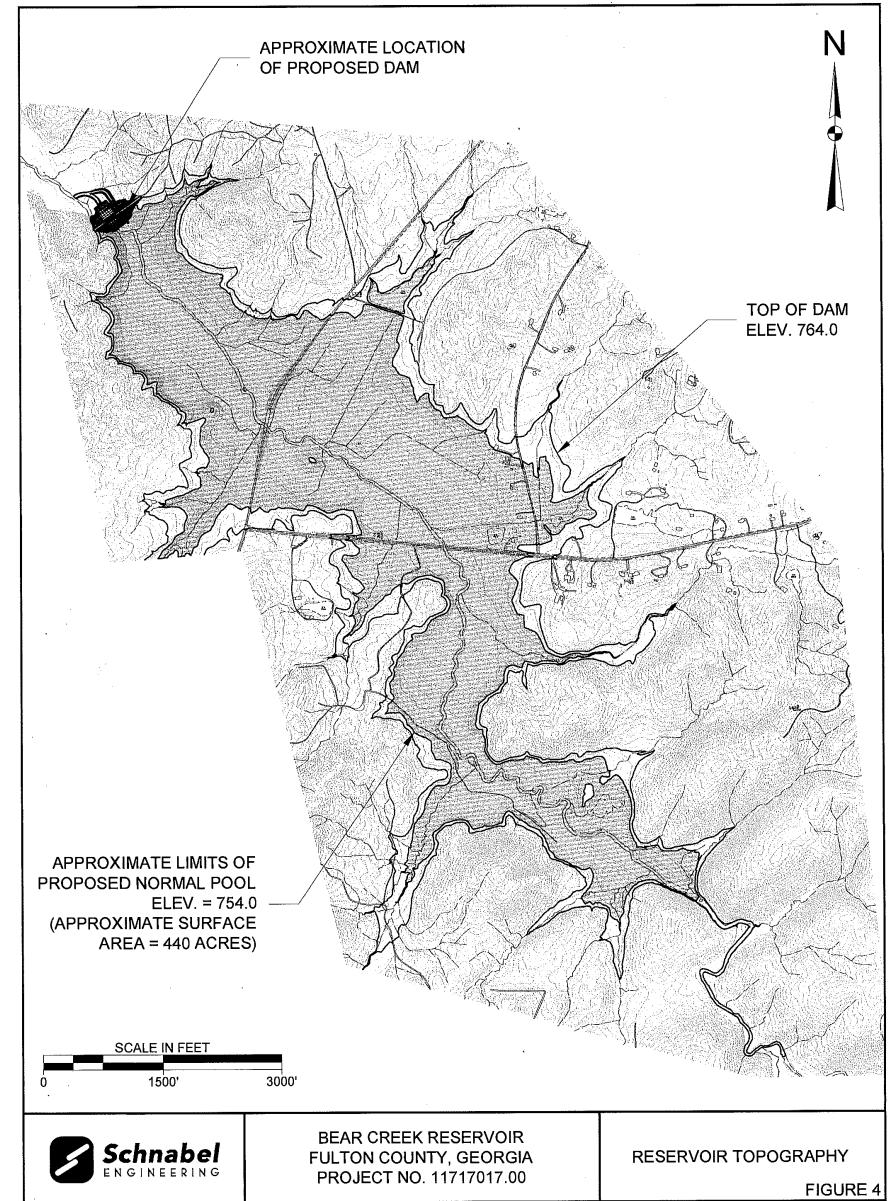
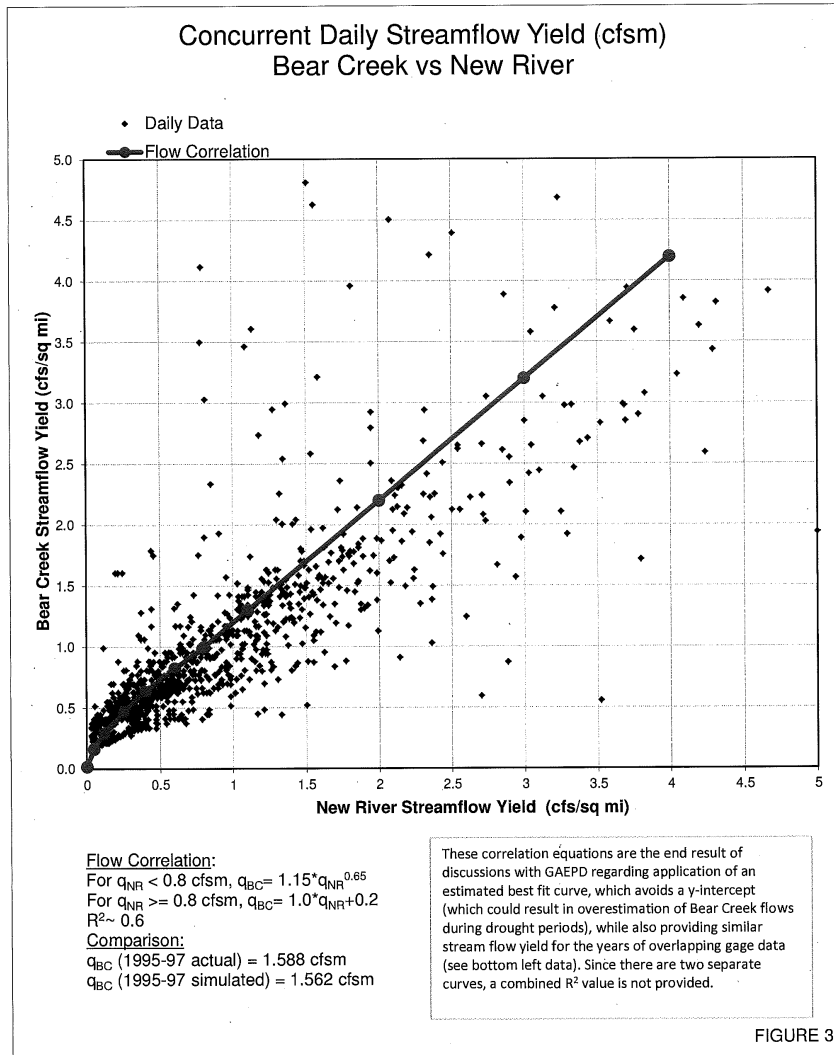
## APPENDIX B FIGURES

- Figure 1: Regional Location Plan
- Figure 2: Facilities Location Plan
- Figure 3: Concurrent Daily Streamflow Yield
- Figure 4: Reservoir Topography
- Figure 5: Area and Storage Curves
- Figure 6: Regression Equations for Analysis
- Figure 7: Chattahoochee River Watershed at Whitesburg

January 15, 2014  
 Project 11717017

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South Fulton Municipal Regional Water & Sewer Authority  
Bear Creek Reservoir - Area and Storage Curves

Elev.	Area Acres	Area mg/in	Inc. Vol. A-FT	Cumulative Vol A-FT	M Gal.	Elev.-Elev Min
720	0.5	0	0.00	0	0	0
722	2.7	0	2.84	3	1	2
724	11.8	0	13.44	16	5	4
726	33.3	1	43.28	60	19	6
728	57.0	2	89.28	149	49	8
730	75.5	2	132.15	281	92	10
732	103.1	3	177.91	459	150	12
734	139.1	4	241.24	700	228	14
736	174.5	5	312.85	1013	330	16
738	207.7	6	381.63	1395	455	18
740	243.5	7	450.67	1845	601	20
742	277.9	8	521.04	2366	771	22
744	307.8	8	585.43	2952	962	24
746	337.6	9	645.14	3597	1172	26
748	367.5	10	704.85	4302	1402	28
750	391.7	11	758.98	5061	1649	30
752	416.0	11	807.53	5868	1912	32
754	440.9	12	856.74	6725	2192	34
756	469.7	13	910.40	7635	2488	36
758	493.6	13	963.15	8599	2802	38
760	517.7	14	1011.14	9610	3132	40
762	545.7	15	1063.20	10673	3478	42
764	574.6	16	1120.08	11793	3843	44

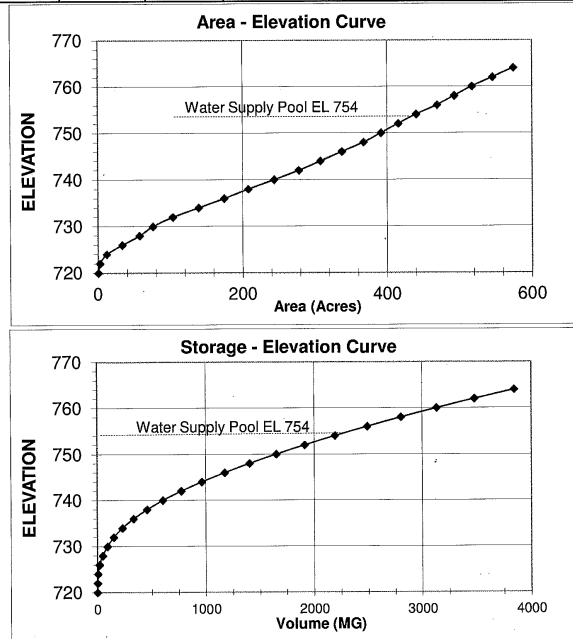


FIGURE 5

South Fulton Municipal Regional Water & Sewer Authority  
Bear Creek Reservoir - Regression Equations for Analysis

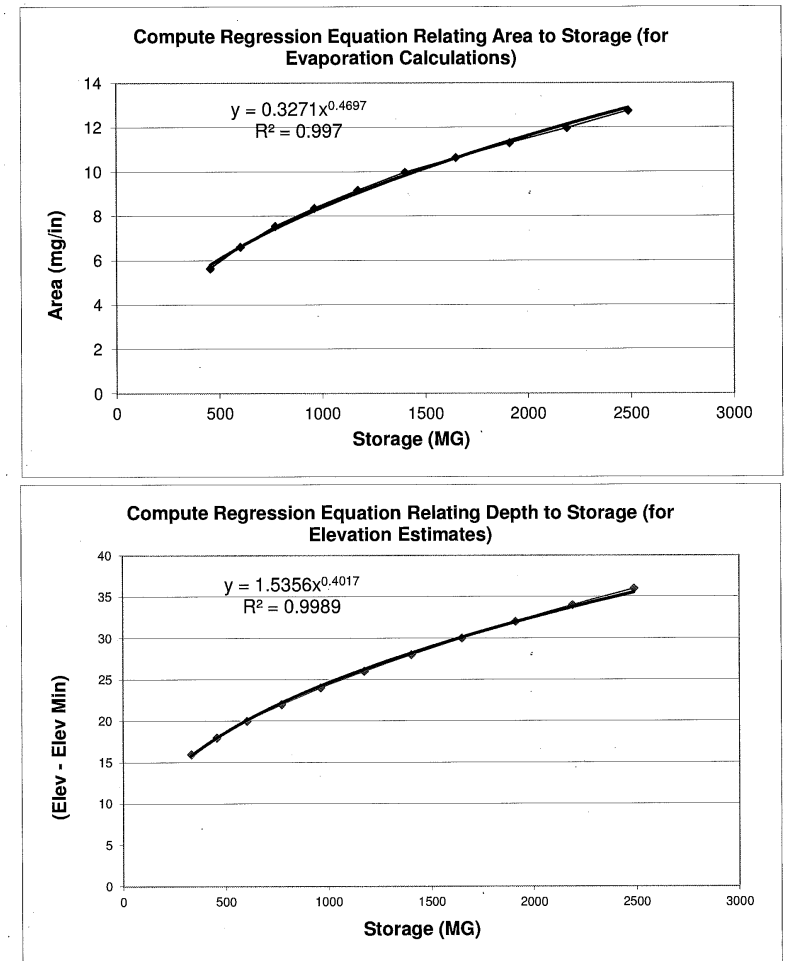
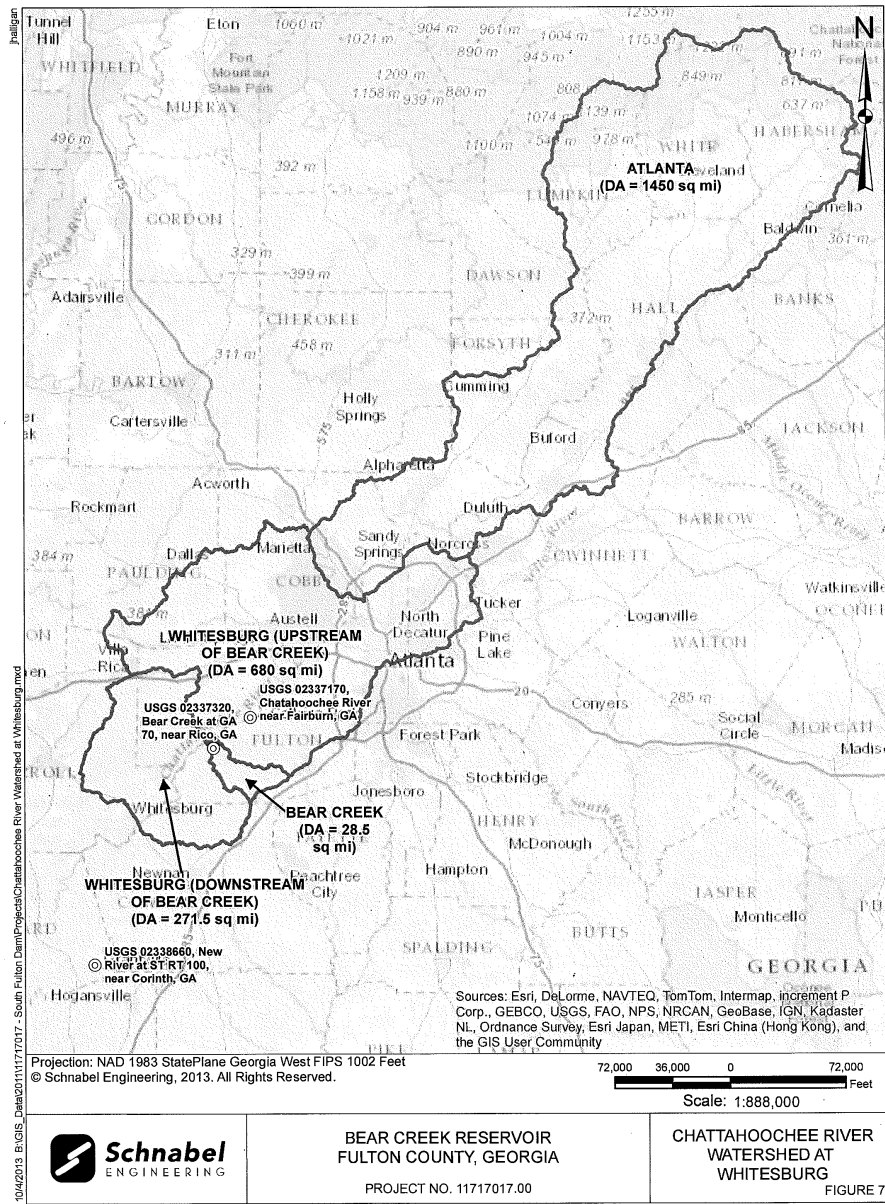


FIGURE 6



## APPENDIX C DATA

Evaluation of Net Withdrawals at Whitesburg

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## Calculation of Net Withdrawals Between Atlanta and Bear Creek Nodes

2007 Withdrawals and Returns			
GAEPD Data			
Month	Net Withdrawals below PTC above Whitesburg - mgd <sup>1</sup>	Net Withdrawals between Bear Creek and Whitesburg - mgd	Ratio
1	-194.5	2.95	-0.015
2	-180.20	3.22	-0.018
3	-180.62	2.74	-0.015
4	-169.42	2.75	-0.016
5	-153.41	4.16	-0.027
6	-153.58	4.69	-0.031
7	-163.78	4.53	-0.028
8	-143.74	6.67	-0.046
9	-129.05	7.71	-0.060
10	-149.16	6.64	-0.045
11	-124.11	4.80	-0.039
12	-142.19	6.24	-0.044

<sup>1</sup>Data taken from spreadsheet provided by GA EPD.

2007 Withdrawals and Returns			
USACE ResSim Model			
Month	Net Withdrawals between Atlanta and Whitesburg - cfs <sup>2</sup>	Net Withdrawals between Bear Creek and Whitesburg (based on ratios above) - cfs	Net Withdrawals between Atlanta and Bear Creek - cfs
1	-301.0	4.6	-305.5
2	-277.8	5.0	-282.8
3	-277.5	4.2	-281.7
4	-257.2	4.2	-261.3
5	-227.4	6.2	-233.6
6	-221.8	6.8	-228.5
7	-235.6	6.5	-242.1
8	-201.6	9.4	-210.9
9	-188.8	11.3	-200.0
10	-229.8	10.2	-240.0
11	-191.0	7.4	-198.4
12	-218.0	9.6	-227.6

<sup>2</sup>Data taken from ResSim model provided by USACE.

## APPENDIX D

### RESULTS

Comparison of Pre-Bear, Pre-Glades with PA2\_2007  
Flow-Duration Curves

Bear Creek Downstream of Bear Creek Dam  
Hydrographs  
Flow-Duration Curves

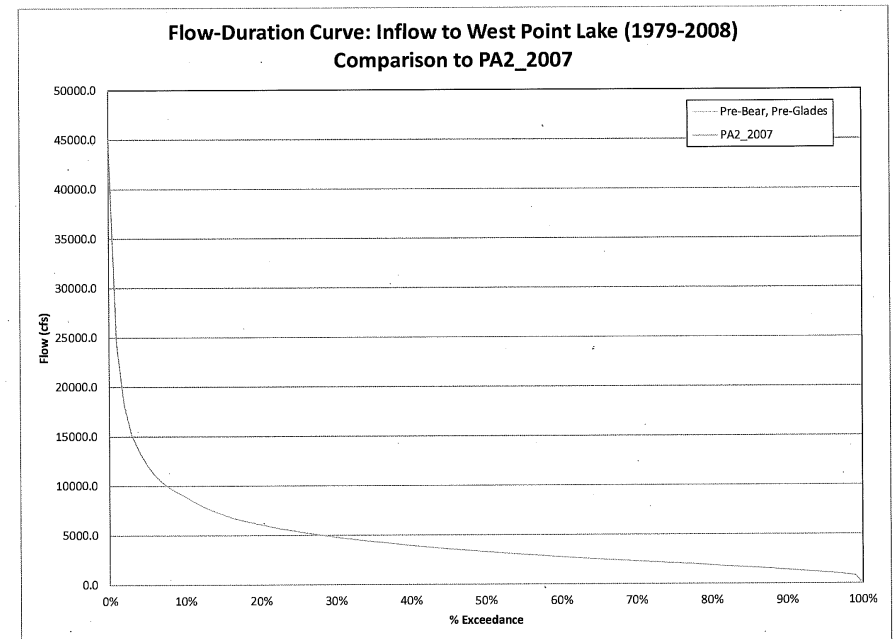
Chattahoochee River at West Point  
Hydrographs  
Flow-Duration Curves

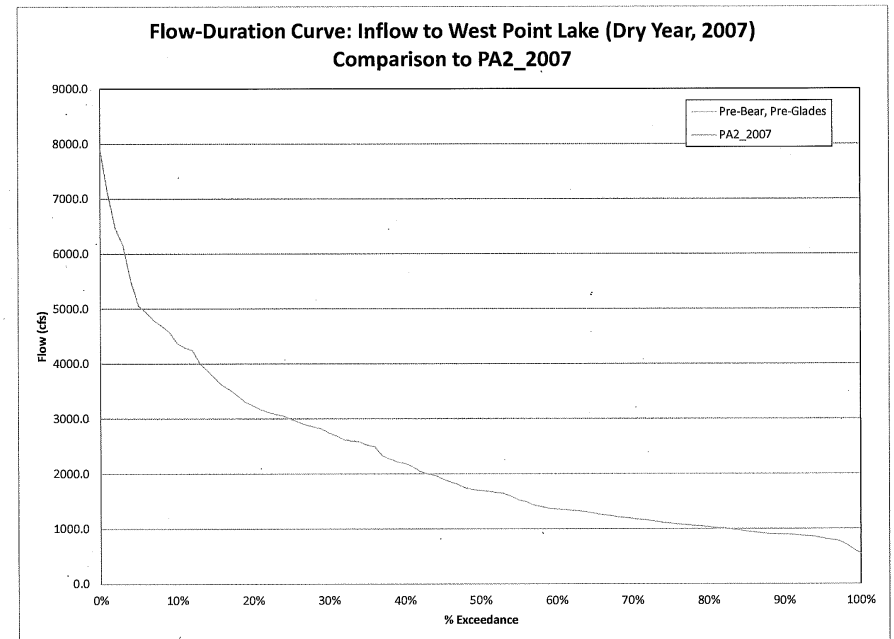
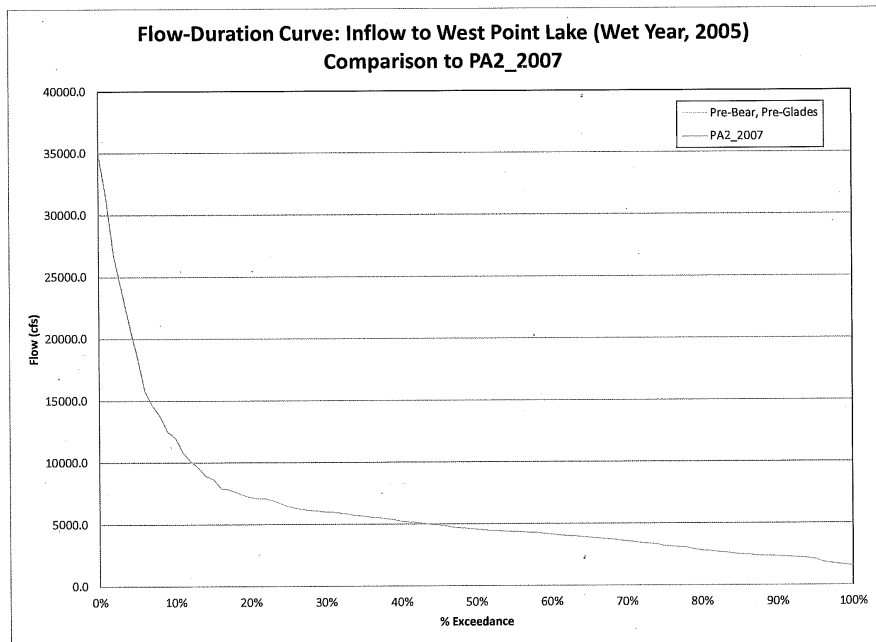
Pool Elevations (West Point Lake, Lake Lanier, and Walter F. George Reservoir)  
Elevation-Duration Curves

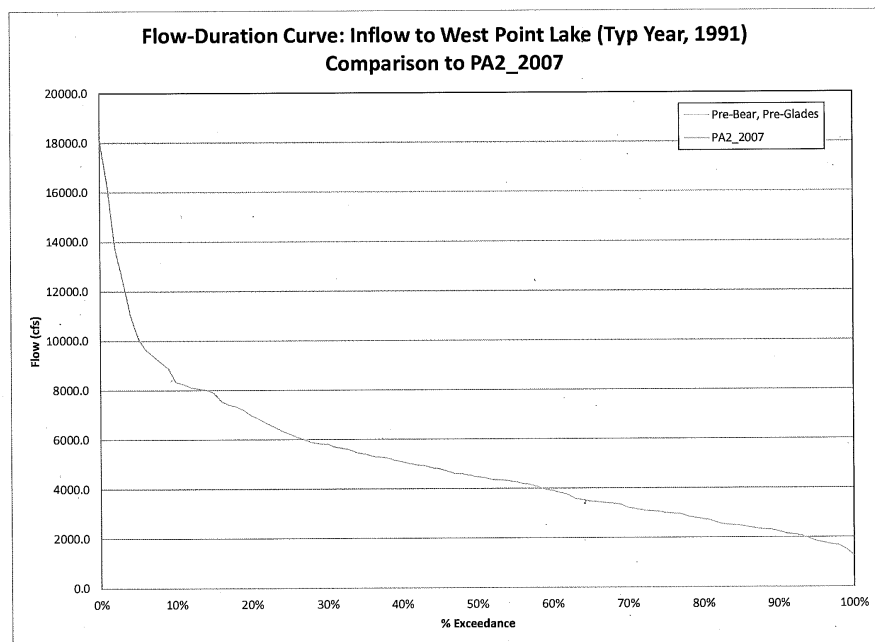


## COMPARISON OF PRE-BEAR, PRE-GLADES WITH PA2\_2007

Flow-Duration Curves





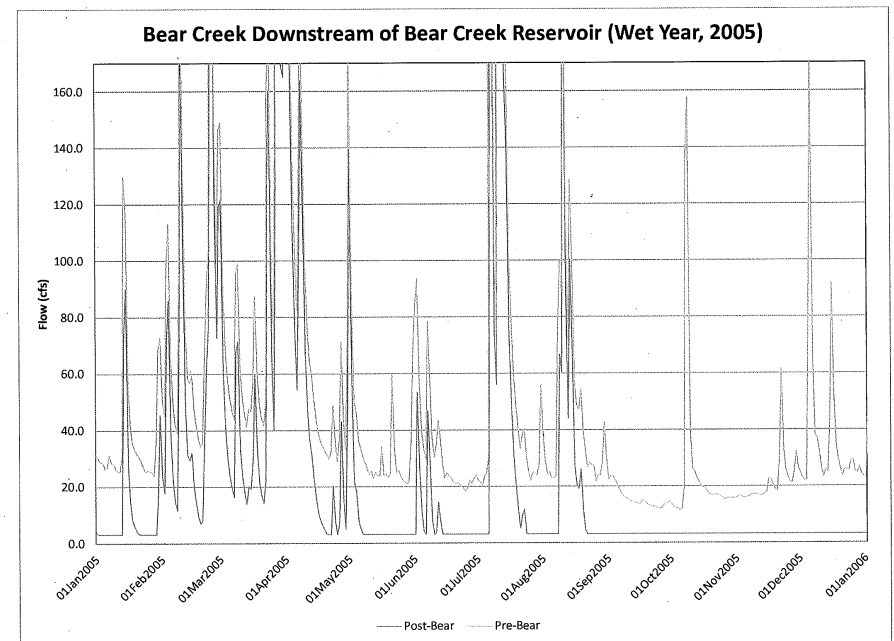
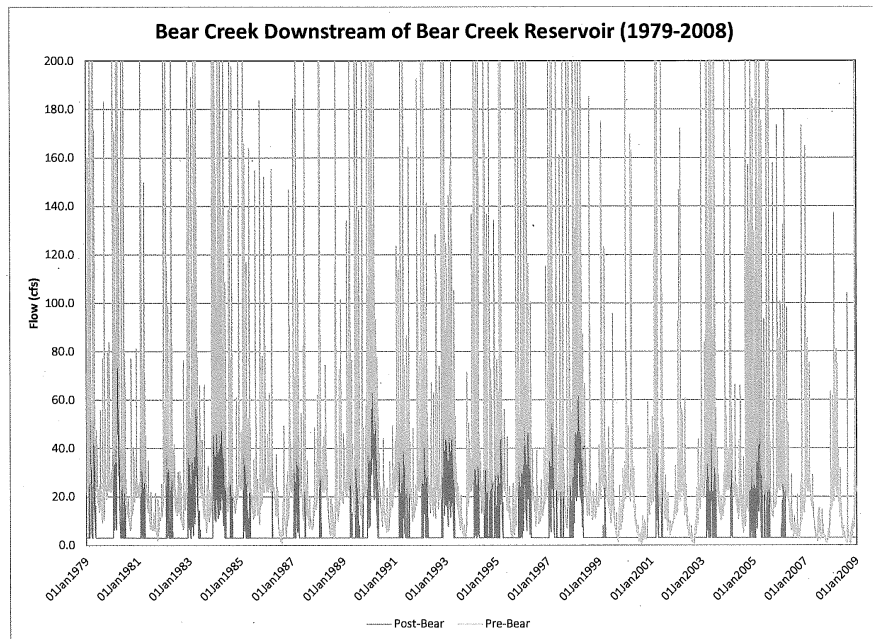


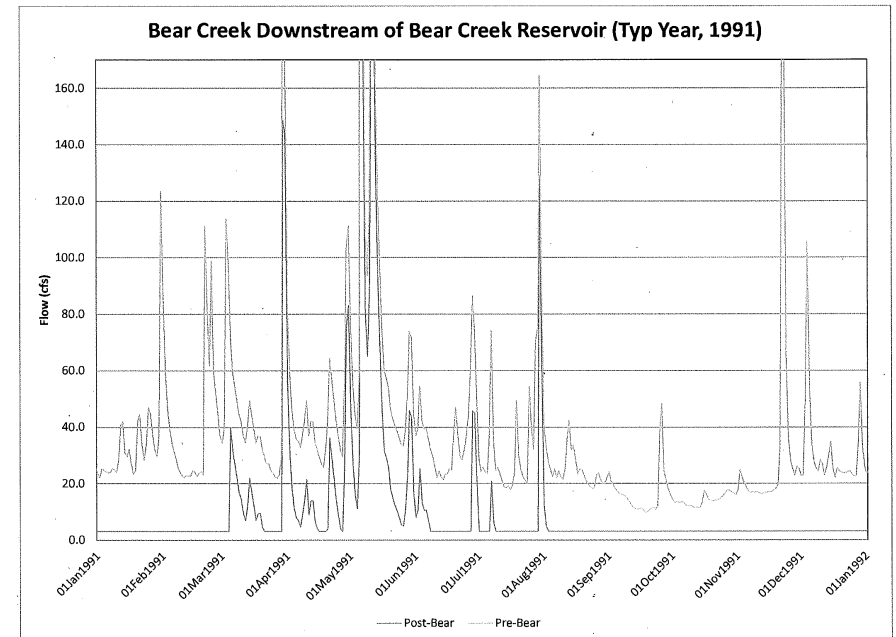
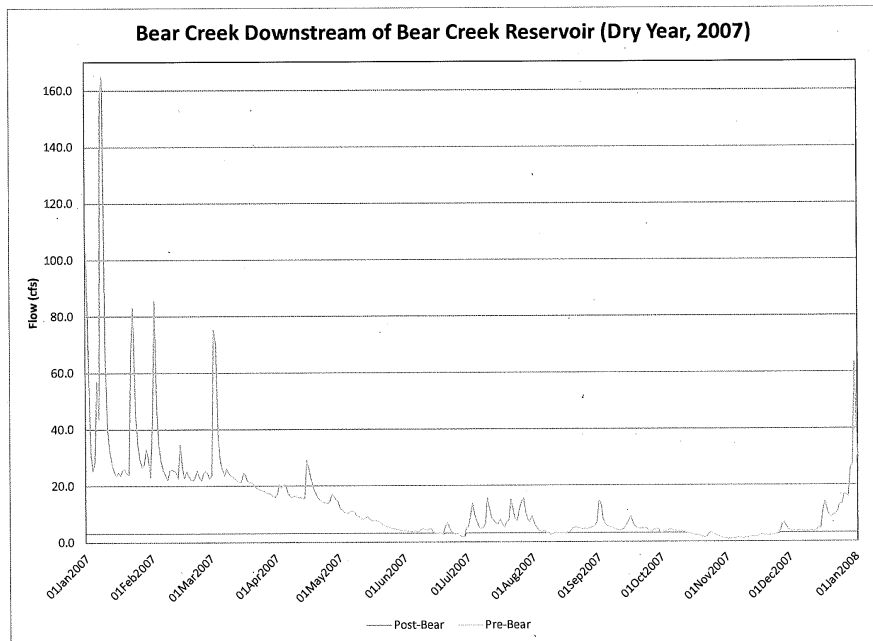
## BEAR CREEK DOWNSTREAM OF BEAR CREEK DAM

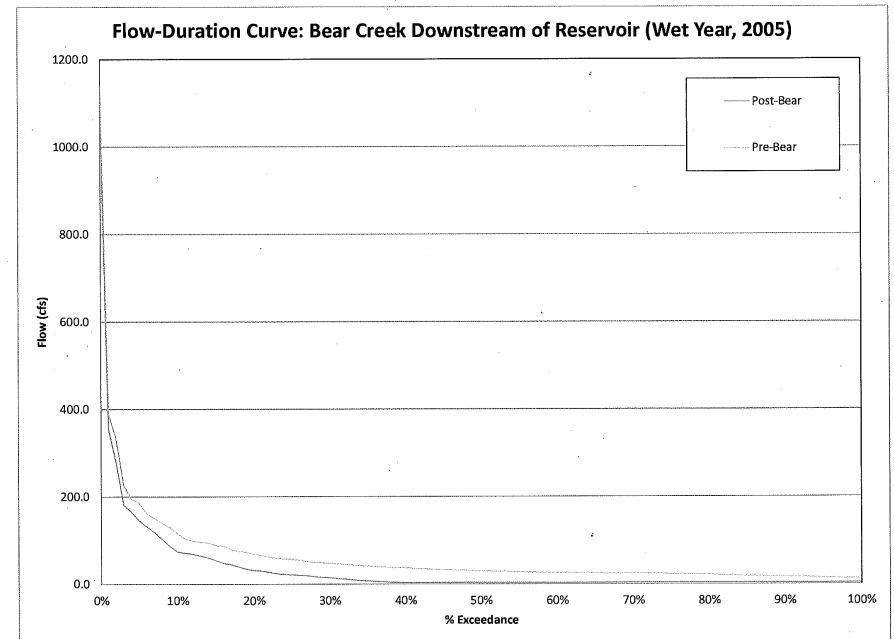
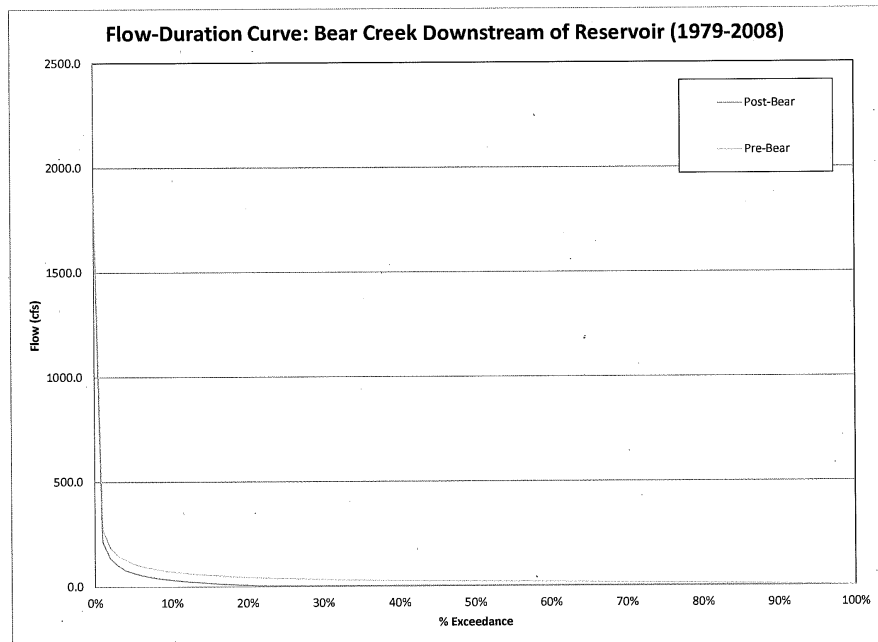
Hydrographs  
Flow-Duration Curves

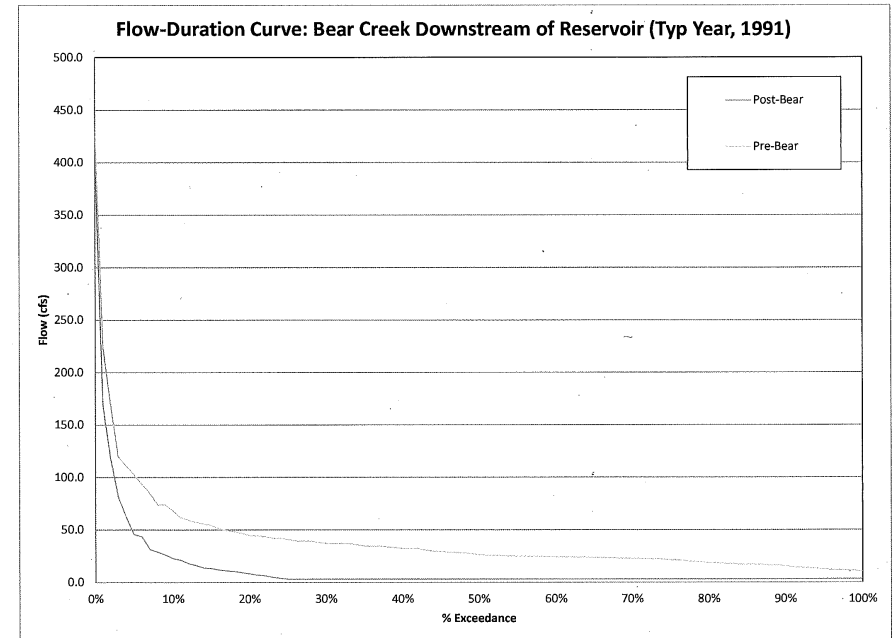
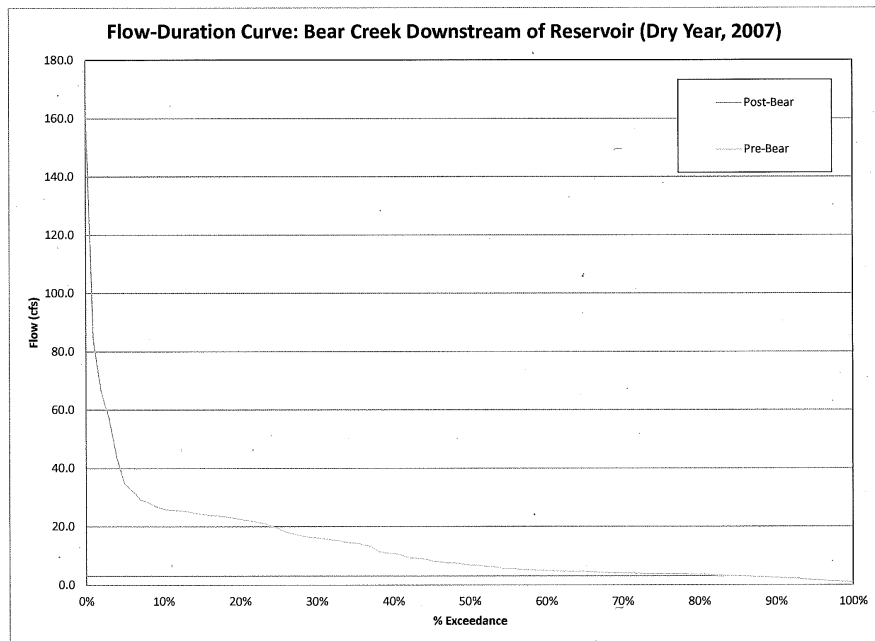
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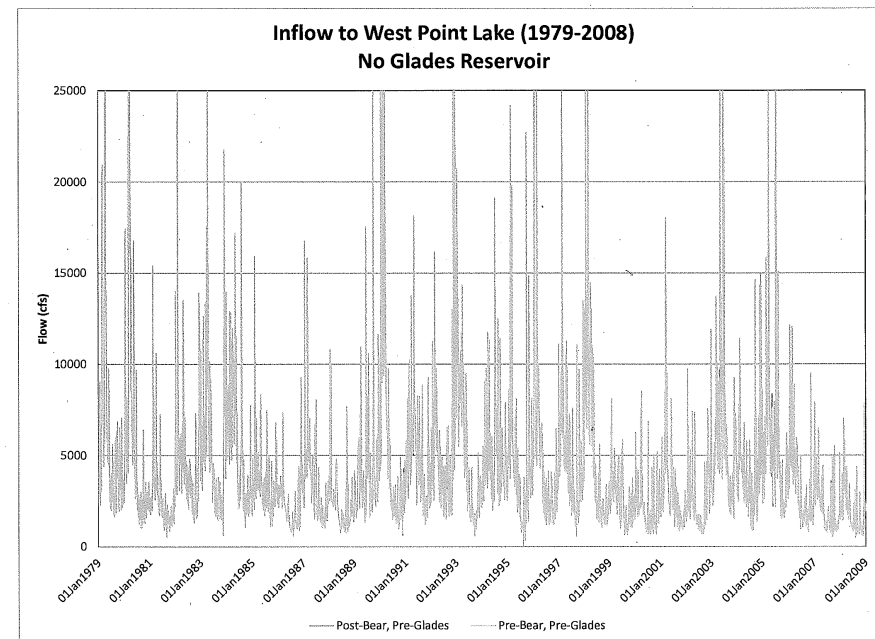




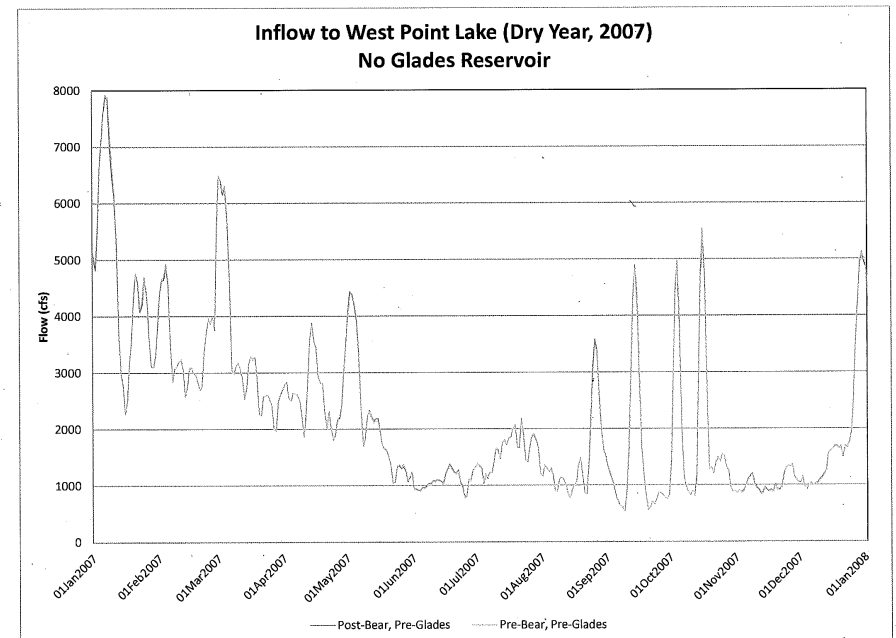
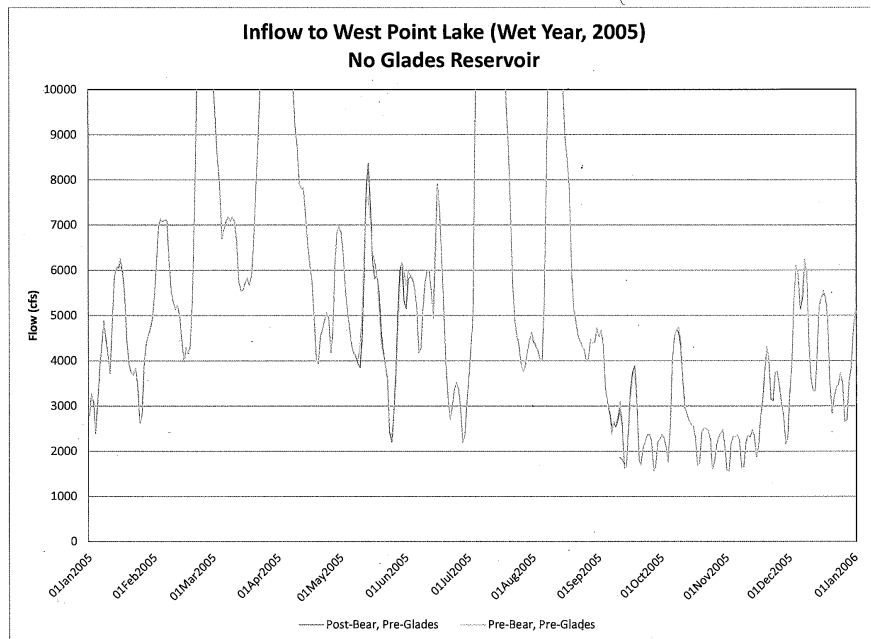


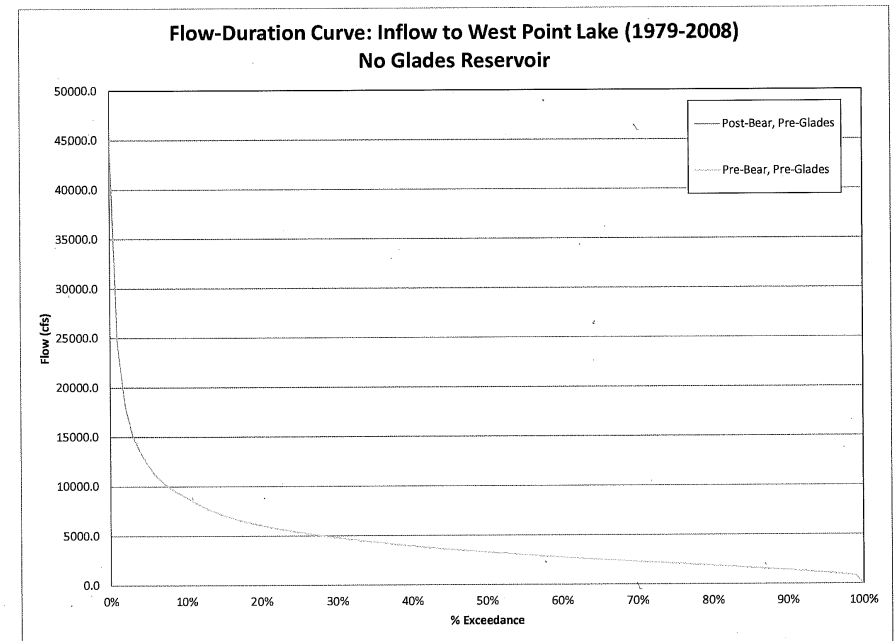
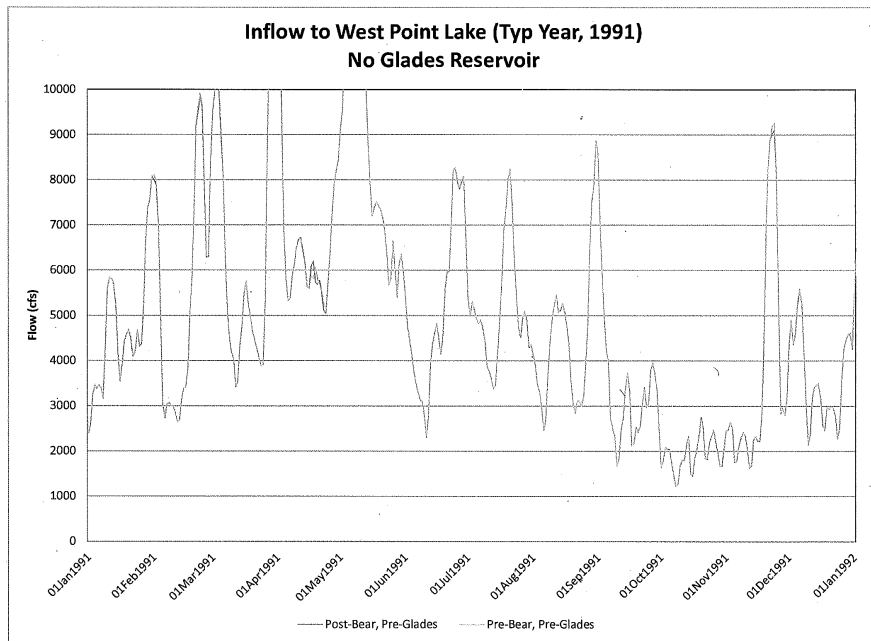
## CHATTAHOOCHEE RIVER AT WEST POINT

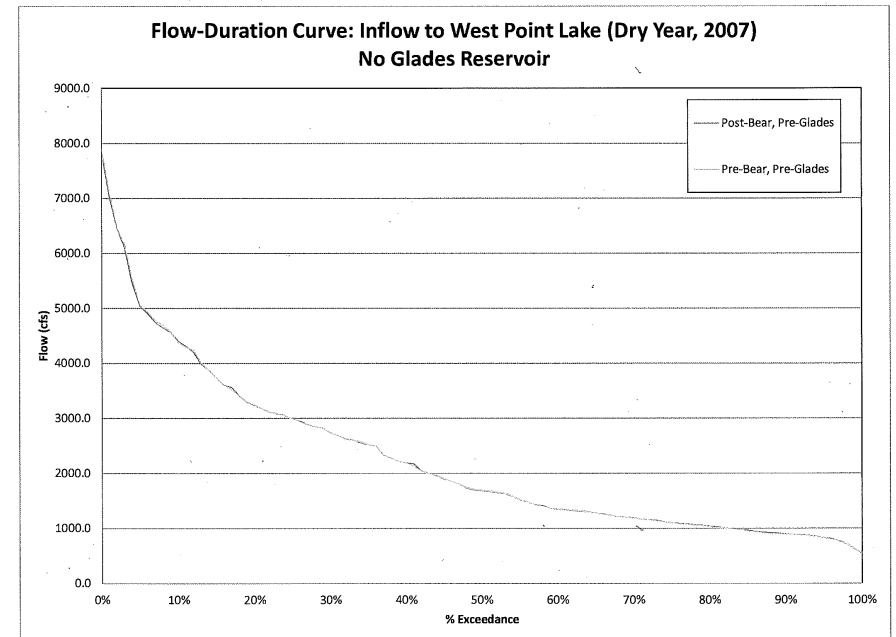
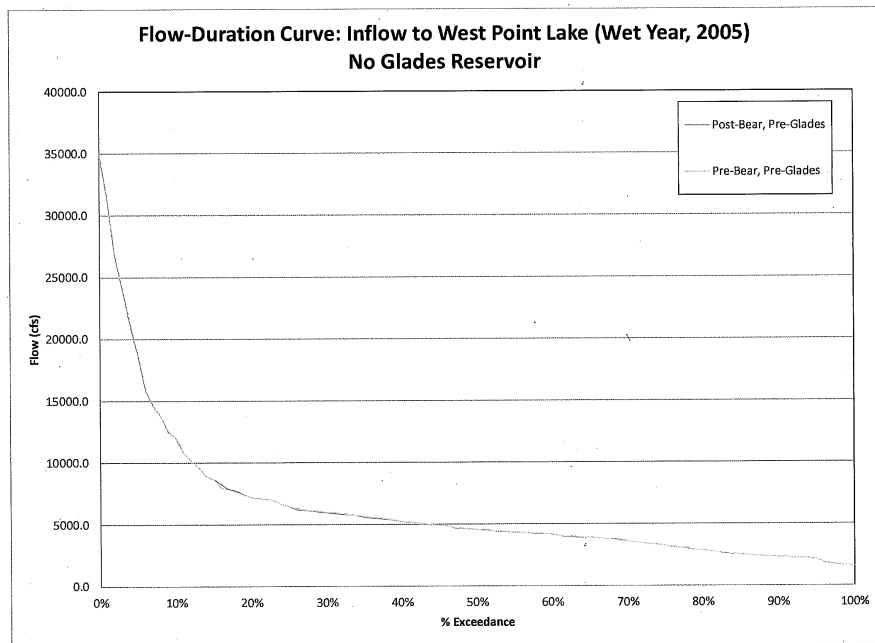
Hydrographs  
Flow-Duration Curves

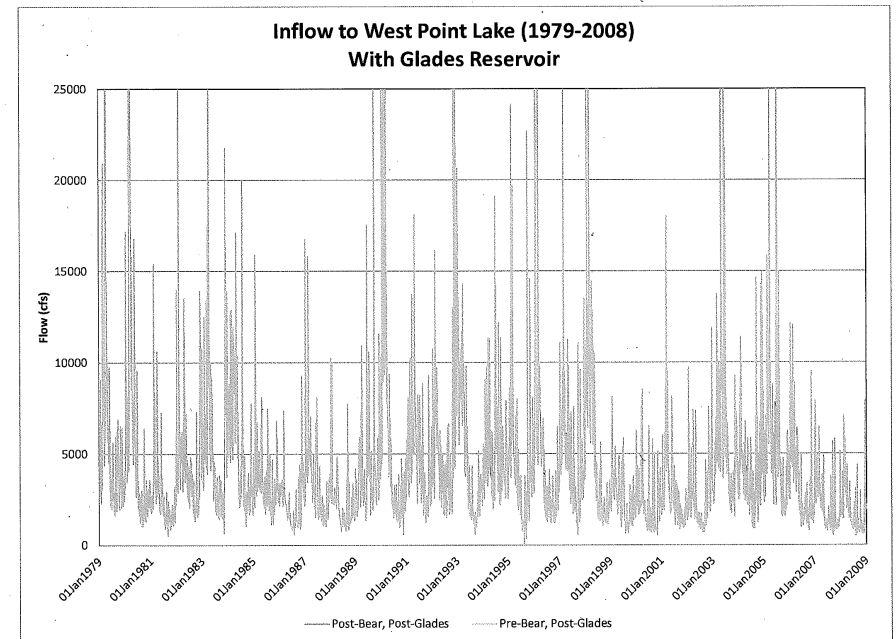
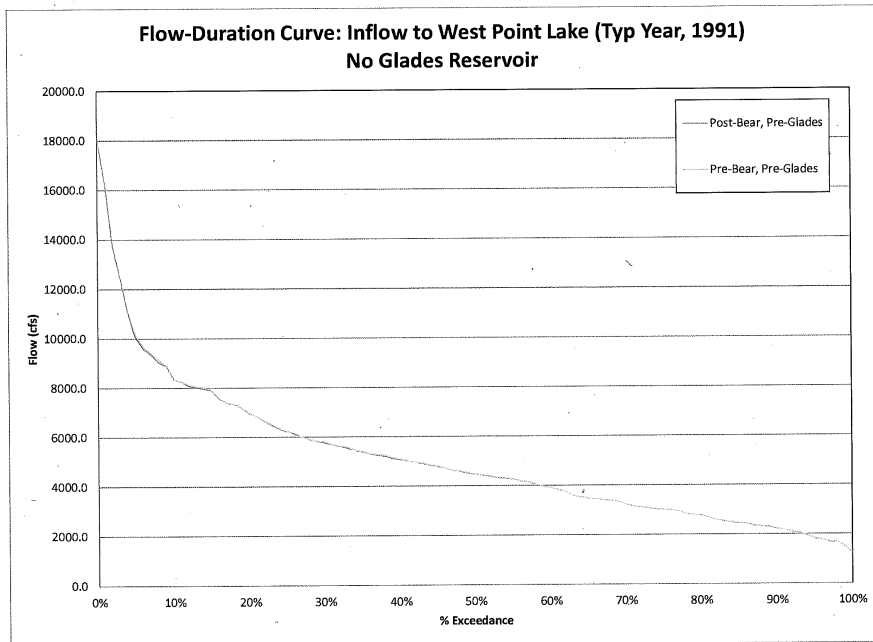


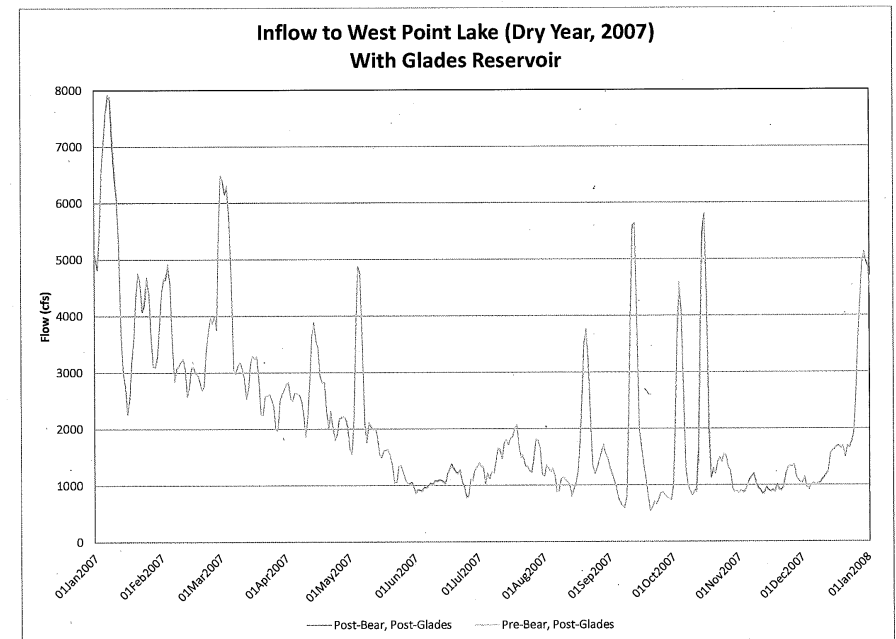
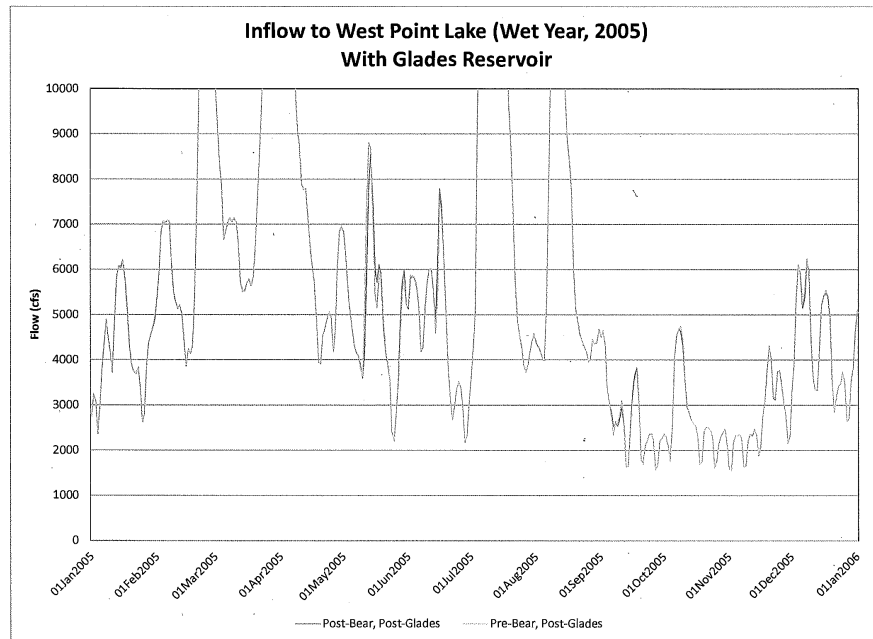


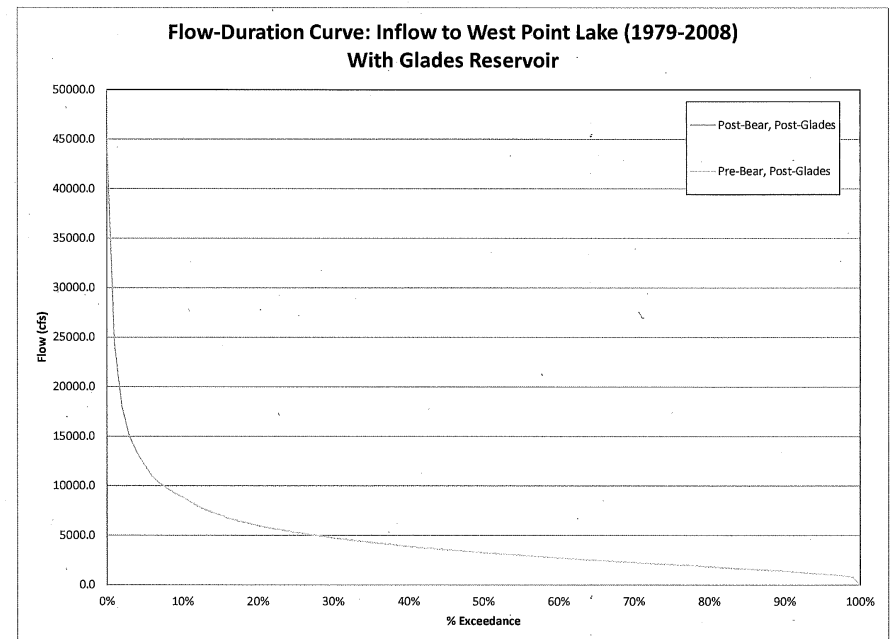
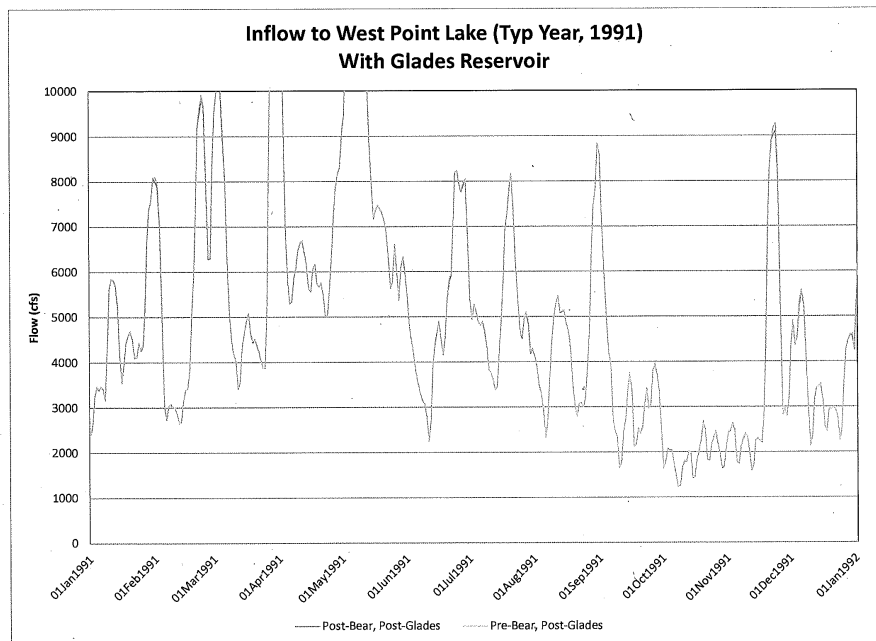


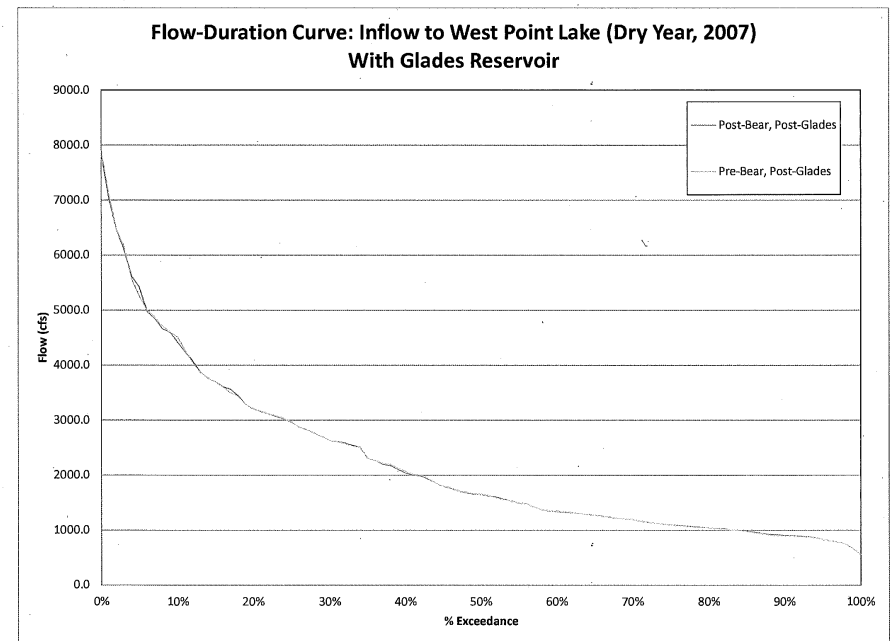
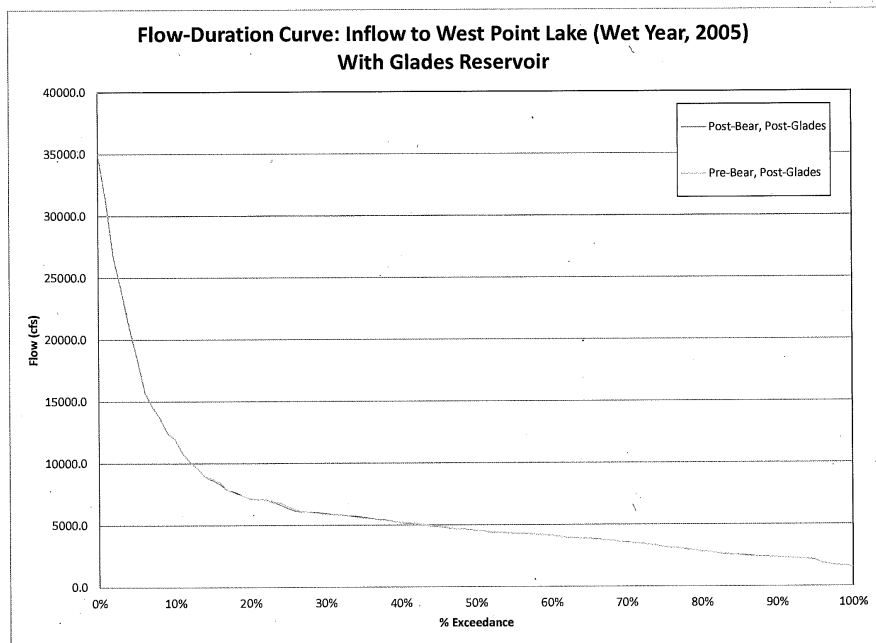


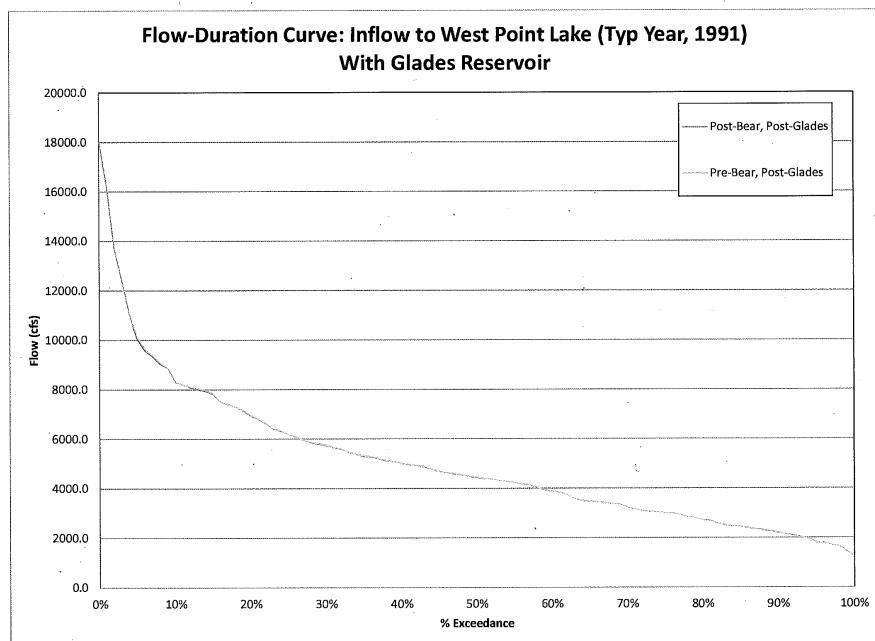












## POOL ELEVATIONS (WEST POINT LAKE, LAKE LANIER, AND WALTER F. GEORGE RESERVOIR)

Elevation-Duration Curves



Lake Lanier Elevations (ft)																		
Time Period	No Glades Reservoir						With Glades Reservoir						Elevation Difference due to Bear Creek					
	Post-Bear			Pre-Bear			Post-Bear			Pre-Bear			No Glades <sup>1</sup>			With Glades <sup>2</sup>		
	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean
1979-2008	1072.44	1052.68	1065.86	1072.44	1052.70	1065.86	1072.43	1051.77	1065.59	1072.43	1051.80	1065.59	0.00	-0.02	0.00	0.00	-0.03	0.00
Dry Yr (2007)	1067.41	1052.68	1061.89	1067.41	1052.70	1061.90	1066.85	1051.89	1061.44	1066.85	1051.93	1061.45	0.00	-0.02	-0.01	0.00	-0.04	-0.01
Wet Yr (2005)	1071.00	1068.62	1070.12	1071.00	1068.63	1070.13	1071.00	1068.51	1070.09	1071.00	1068.52	1070.09	0.00	-0.01	-0.01	0.00	-0.01	0.01
Typ Yr (1991)	1071.00	1065.80	1069.80	1071.00	1065.80	1069.81	1071.00	1065.79	1068.76	1071.00	1065.79	1068.76	0.00	0.00	-0.01	0.00	0.00	0.00

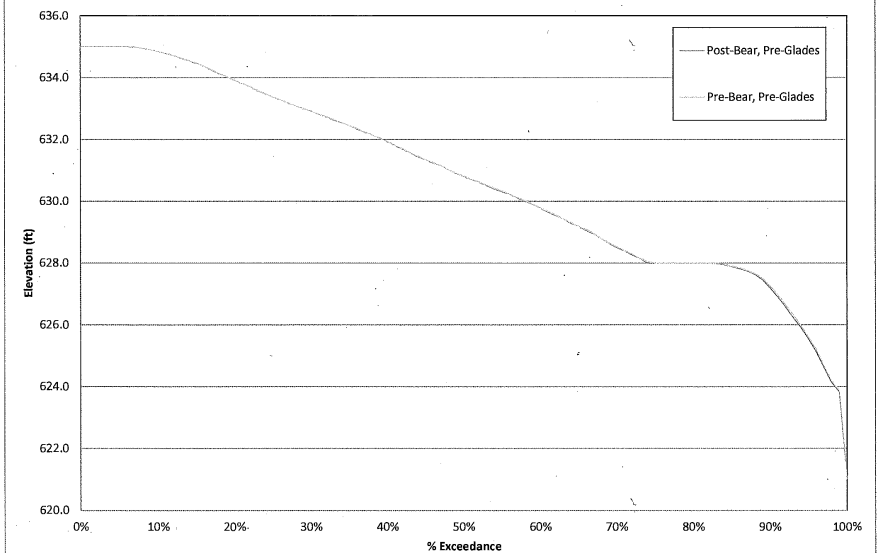
West Point Lake Elevations (ft)																		
Time Period	No Glades Reservoir						With Glades Reservoir						Elevation Difference due to Bear Creek					
	Post-Bear			Pre-Bear			Post-Bear			Pre-Bear			No Glades <sup>1</sup>			With Glades <sup>2</sup>		
	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean
1979-2008	635.00	621.00	630.73	635.00	621.00	630.74	635.00	621.00	630.69	635.00	621.00	630.70	0.00	0.00	-0.01	0.00	0.00	-0.01
Dry Yr (2007)	631.59	621.00	626.75	631.58	621.00	626.75	631.60	621.00	626.70	631.59	621.00	626.70	0.01	0.00	0.00	0.00	0.00	0.00
Wet Yr (2005)	635.00	627.79	632.23	635.00	627.80	632.23	635.00	627.78	632.22	635.00	627.78	632.21	0.00	-0.01	0.00	0.00	0.00	0.01
Typ Yr (1991)	635.00	627.62	632.19	635.00	627.62	632.20	635.00	627.62	632.19	635.00	627.62	632.19	0.00	0.00	-0.01	0.00	0.00	0.00

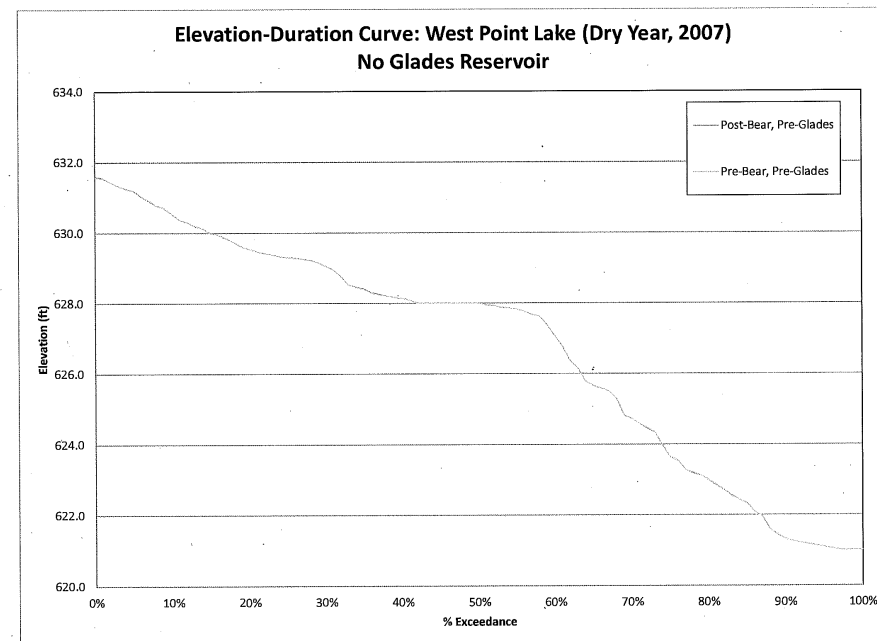
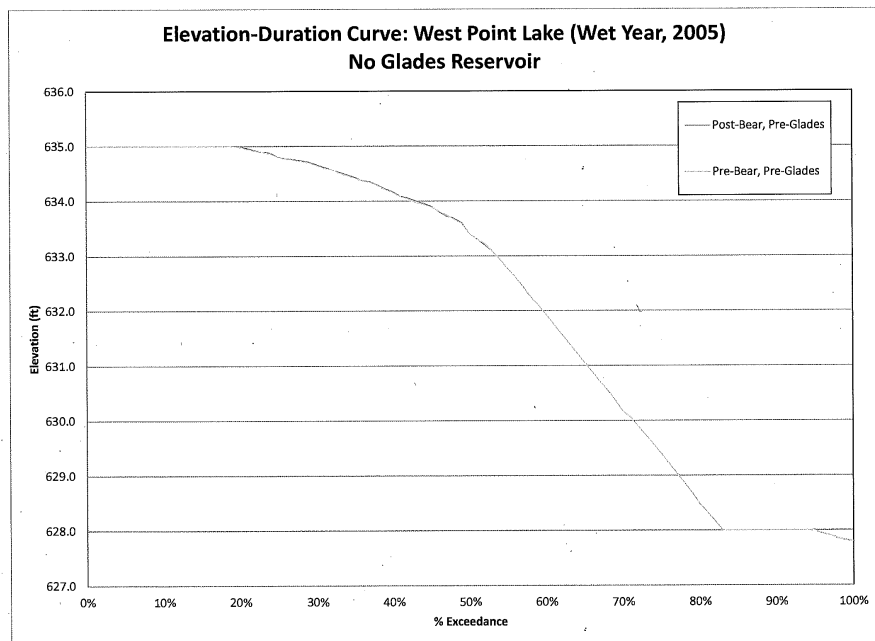
Walter F. George Reservoir Elevations (ft)																		
Time Period	No Glades Reservoir						With Glades Reservoir						Elevation Difference due to Bear Creek					
	Post-Bear			Pre-Bear			Post-Bear			Pre-Bear			No Glades <sup>1</sup>			With Glades <sup>2</sup>		
	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean
1979-2008	199.00	184.56	186.81	199.00	184.55	186.82	199.00	184.55	186.81	199.00	184.54	186.81	0.00	0.00	-0.01	0.00	0.01	0.00
Dry Yr (2007)	188.04	184.56	186.37	188.04	184.55	186.37	188.04	184.55	186.33	188.04	184.54	186.33	0.00	0.00	0.00	0.00	0.01	0.00
Wet Yr (2005)	196.54	187.92	189.33	196.54	187.92	189.33	196.52	187.92	189.33	196.53	187.93	189.33	0.00	0.00	0.00	0.00	-0.01	0.00
Typ Yr (1991)	190.00	187.87	188.92	190.00	187.87	188.92	190.00	187.88	188.92	190.00	187.87	188.92	0.00	0.00	0.00	0.00	0.01	0.00

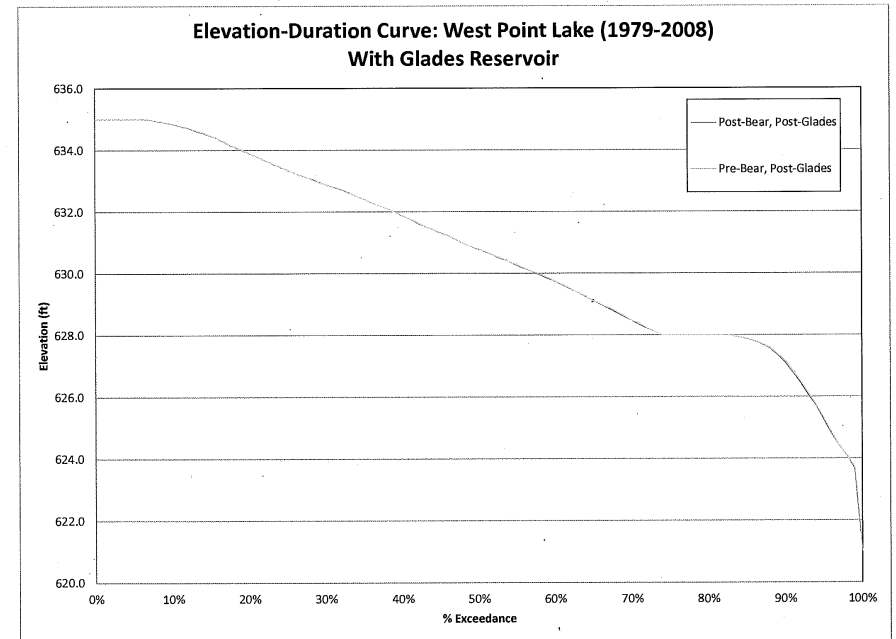
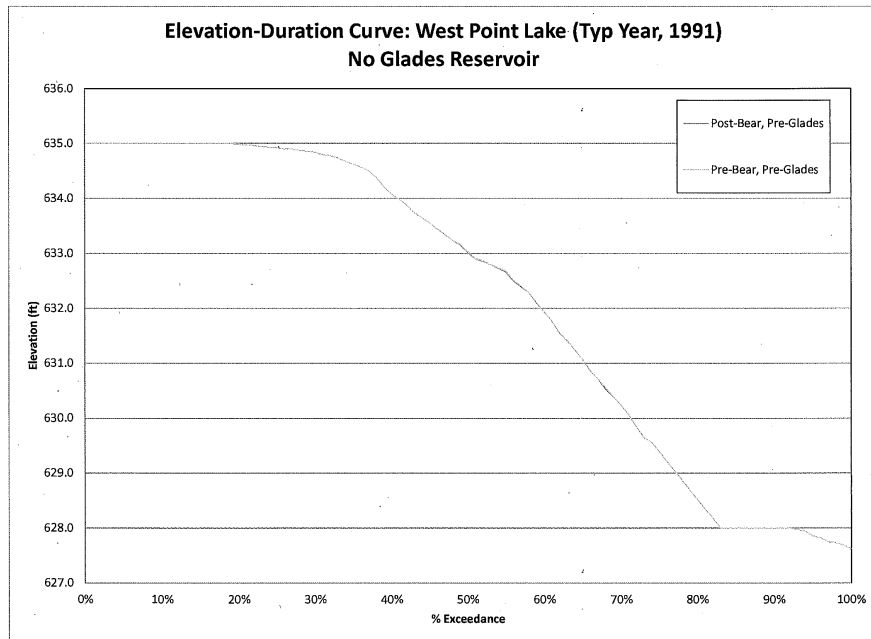
<sup>1</sup> Post-Bear, Pre-Glades minus Pre-Bear, Pre-Glades

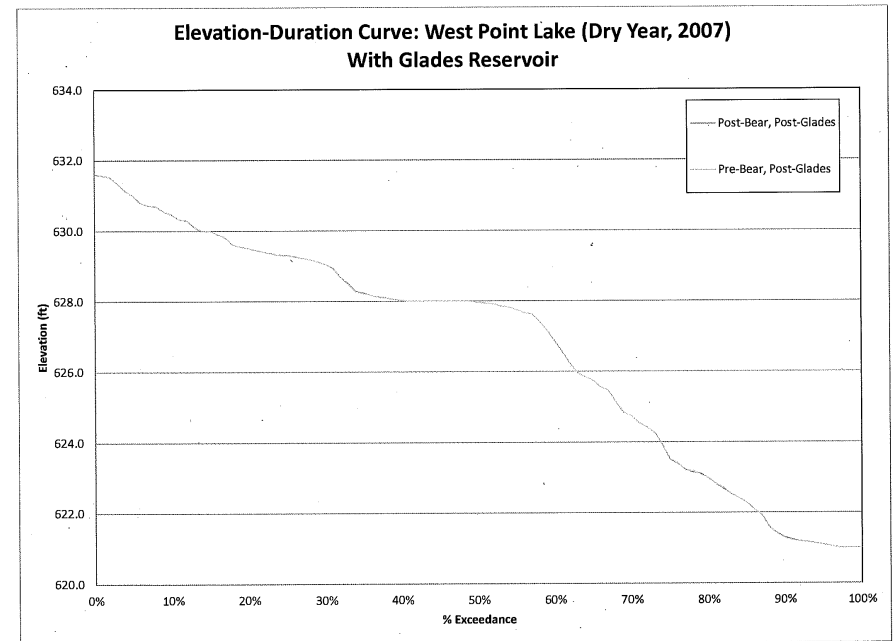
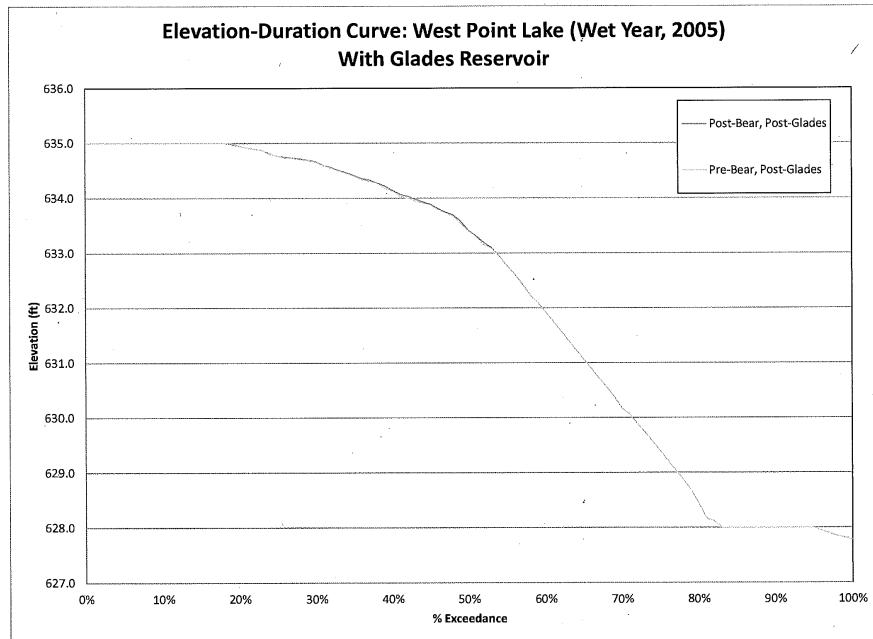
<sup>2</sup> Post-Bear, Post-Glades minus Pre-Bear, Post-Glades

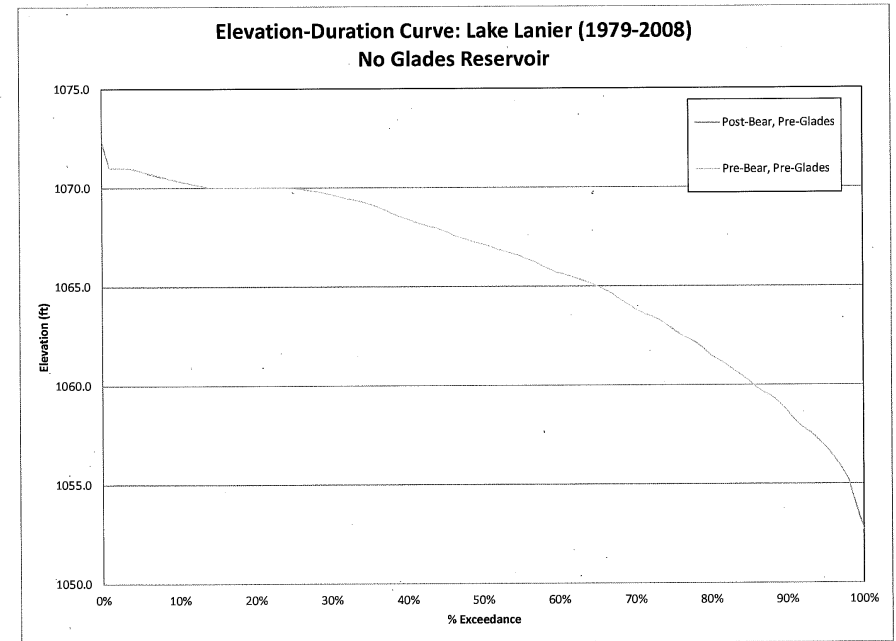
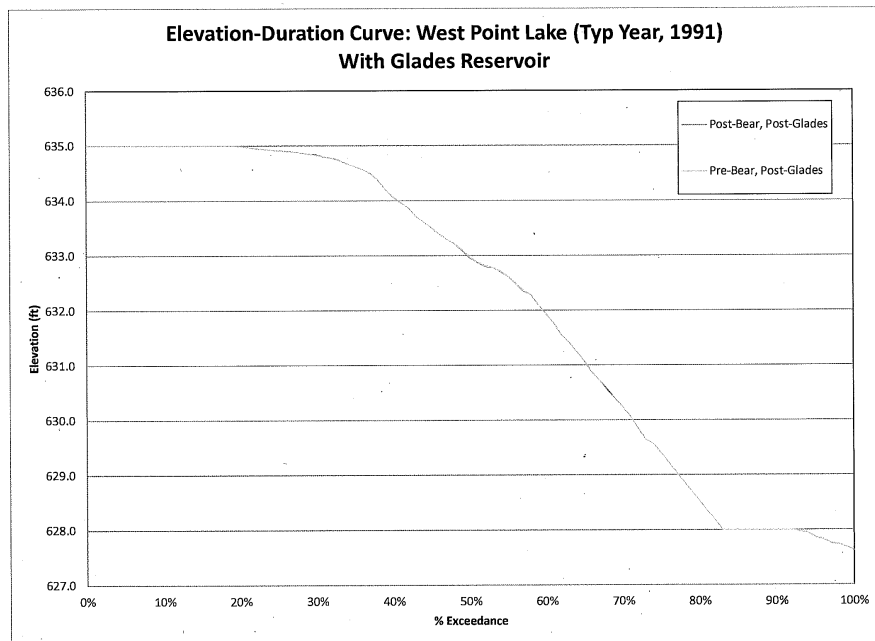
**Elevation-Duration Curve: West Point Lake (1979-2008)**  
**No Glades Reservoir**

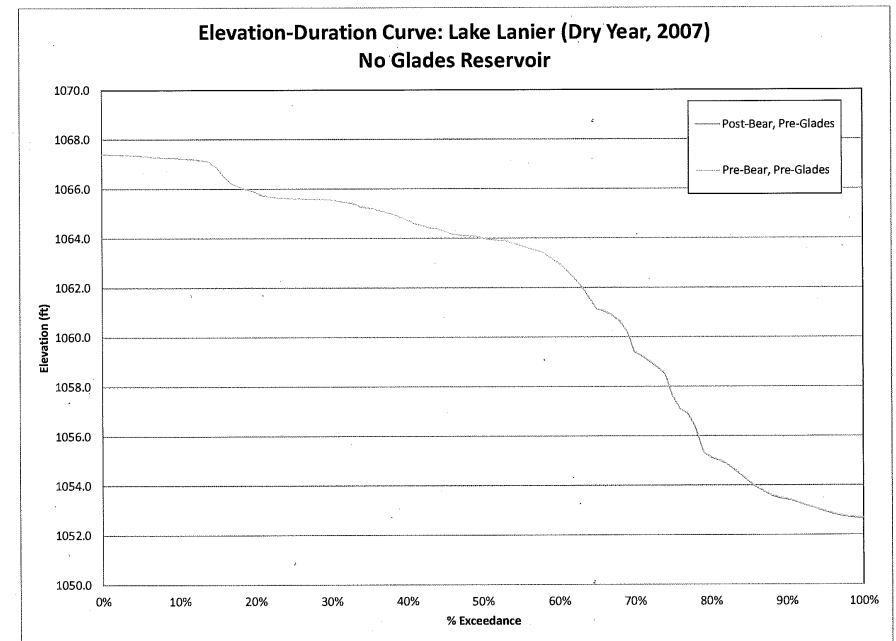
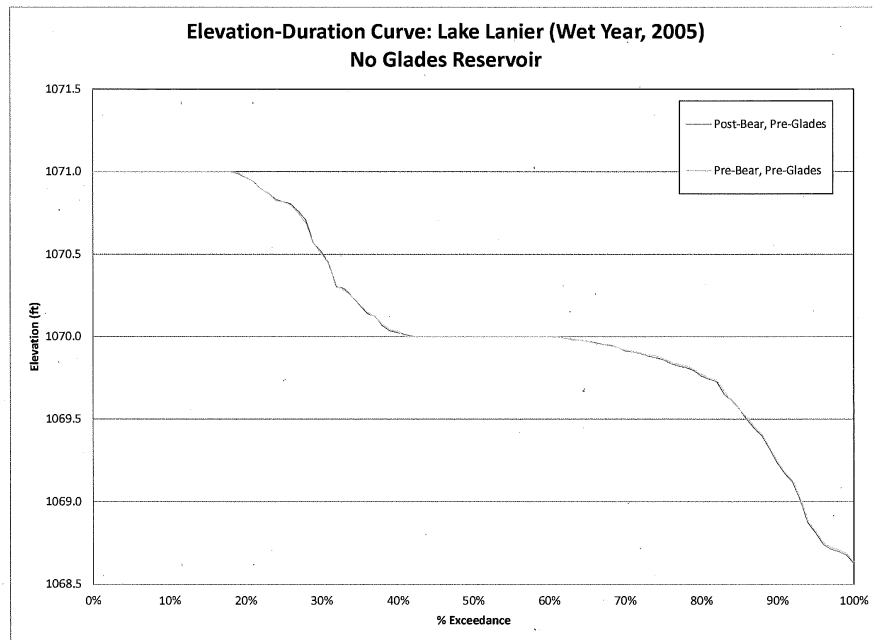


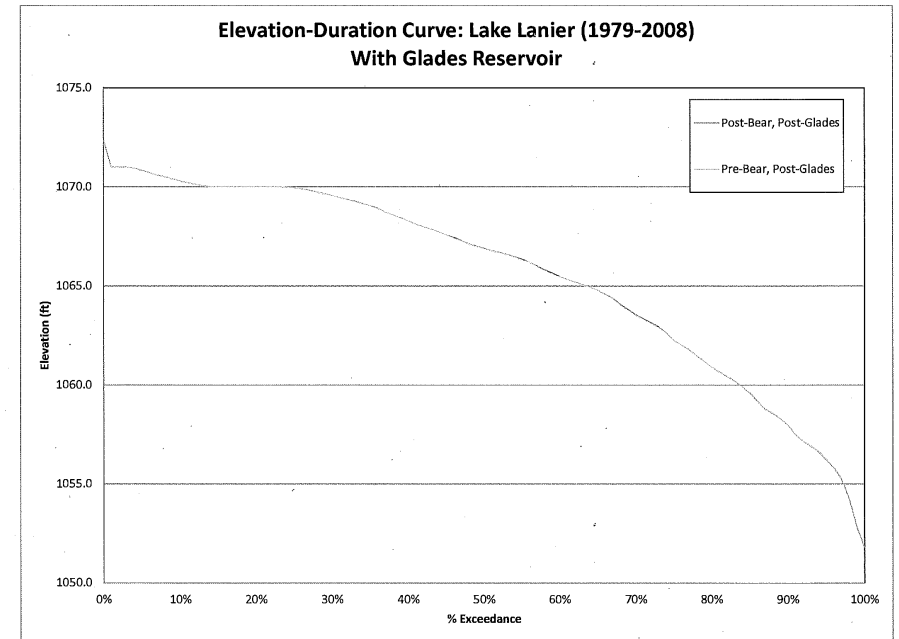
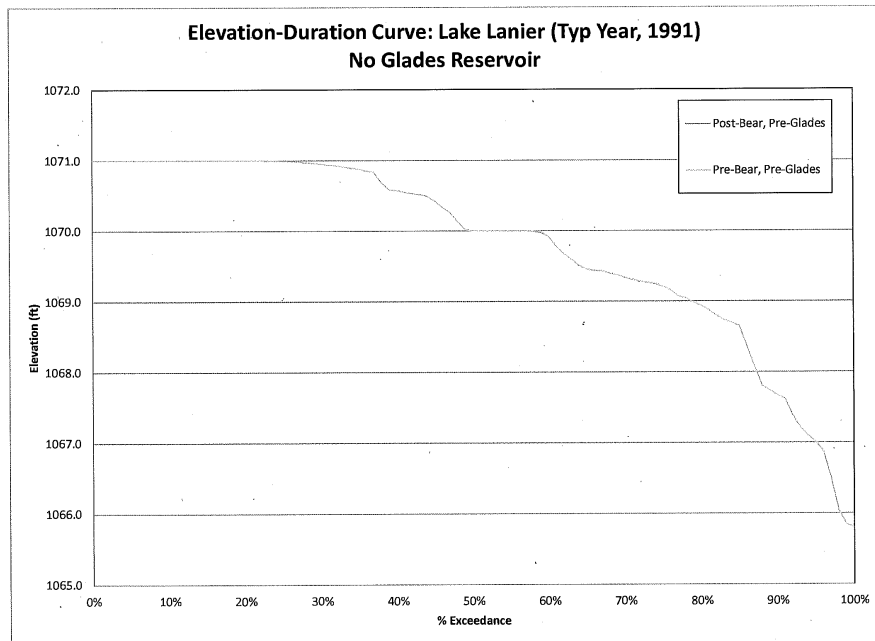


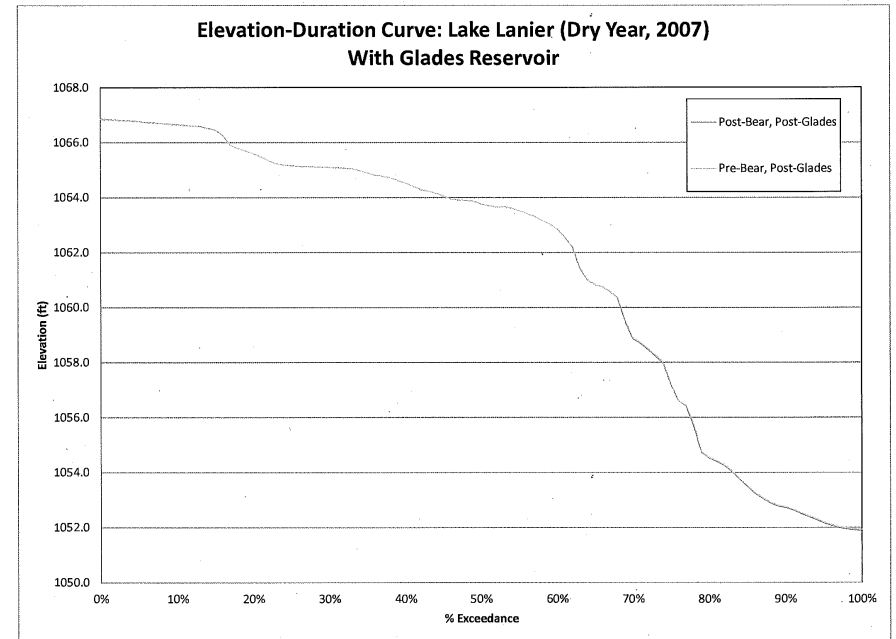
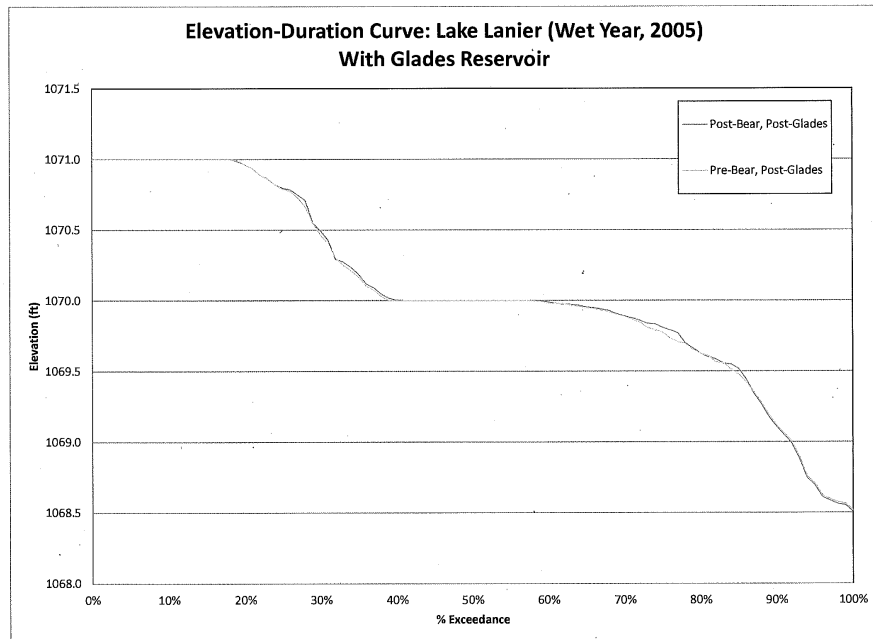




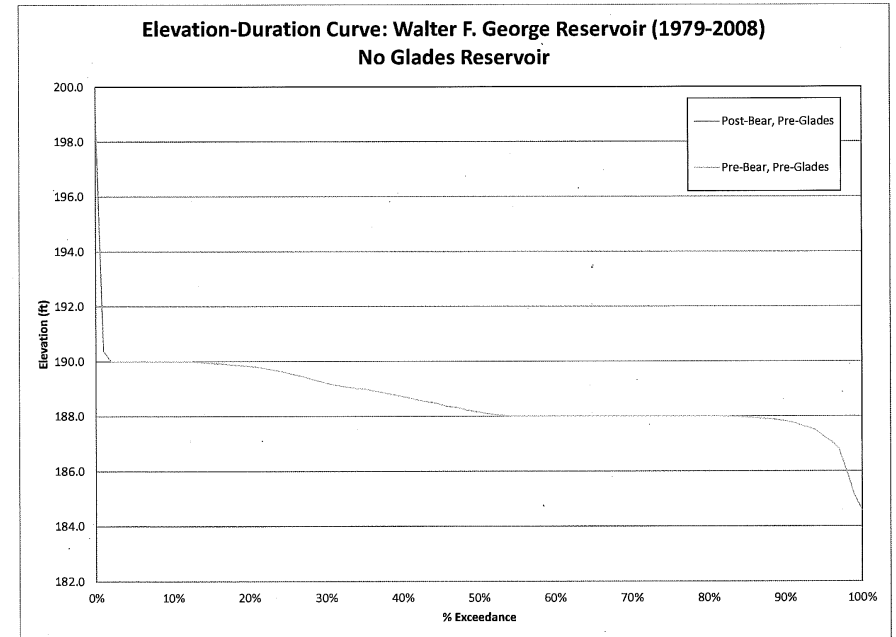
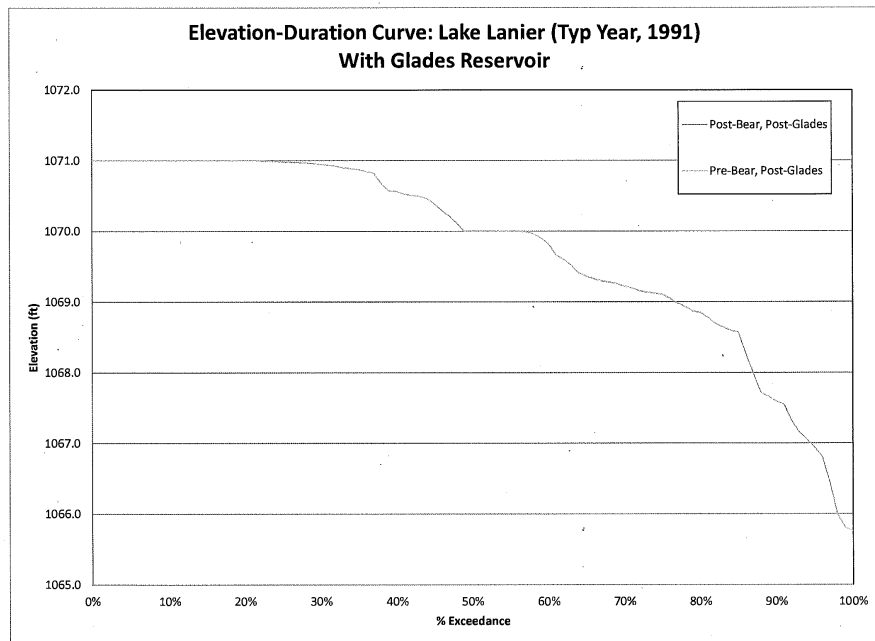


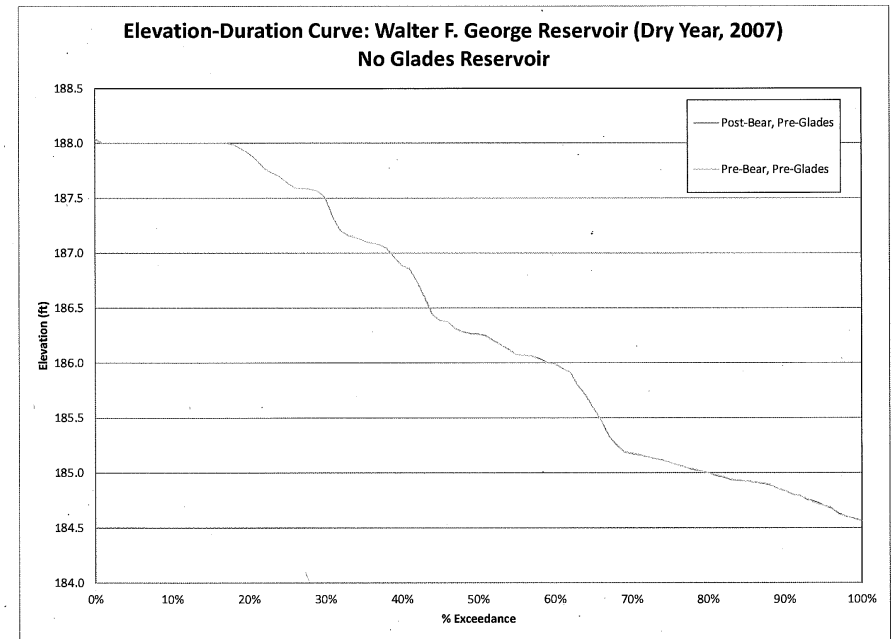
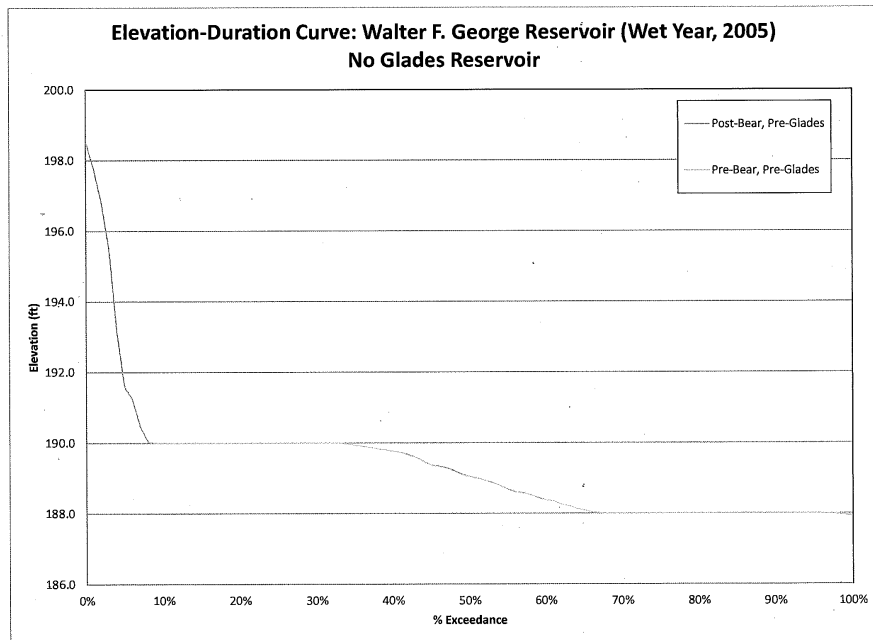


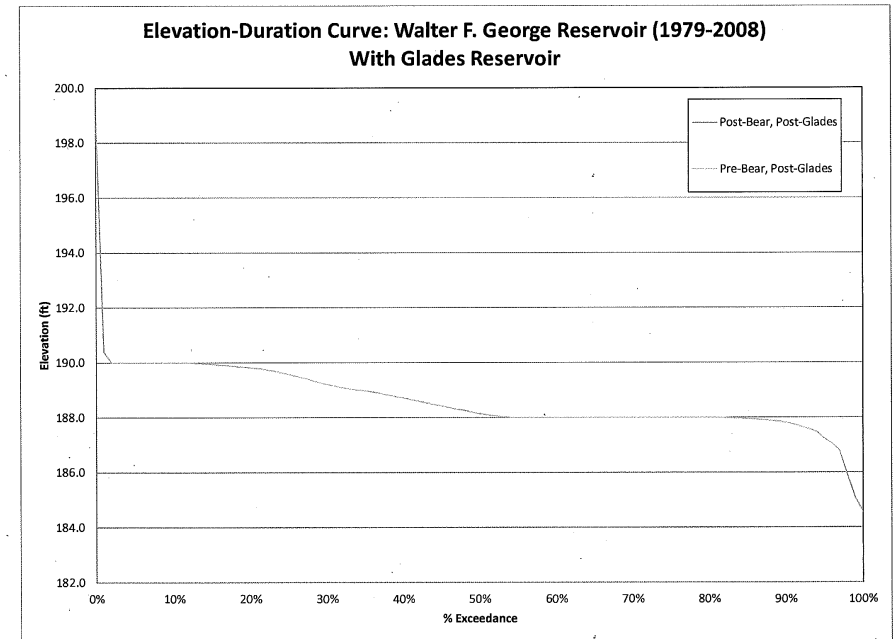
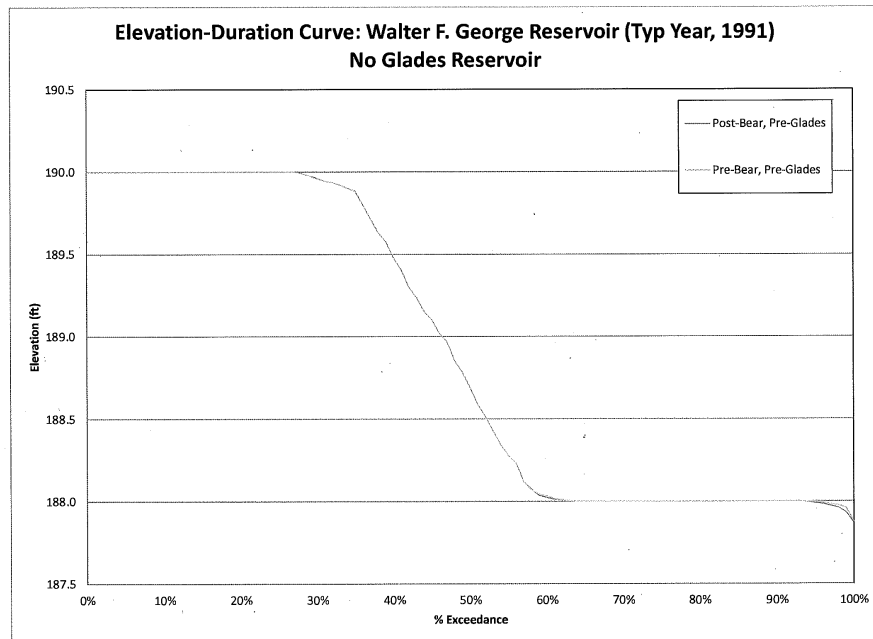


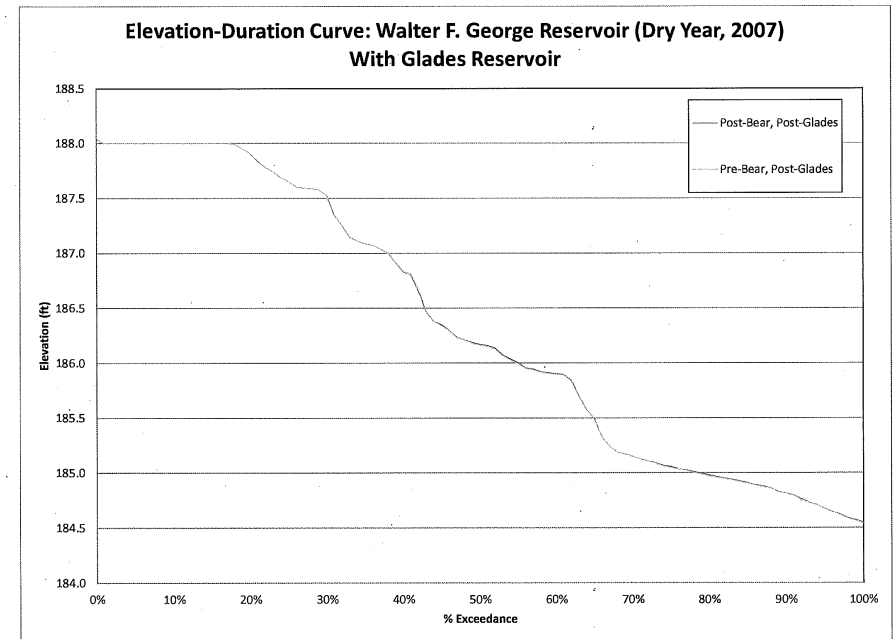
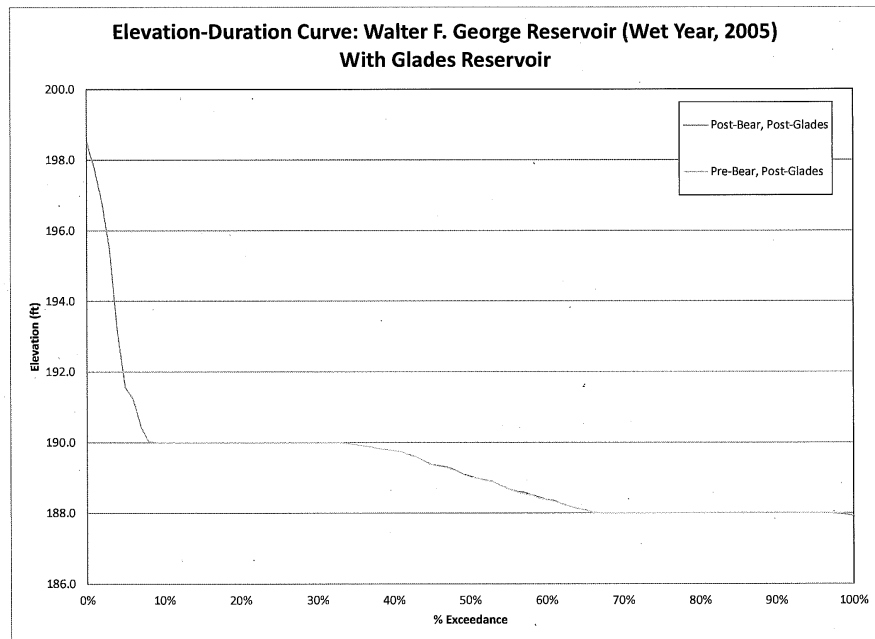






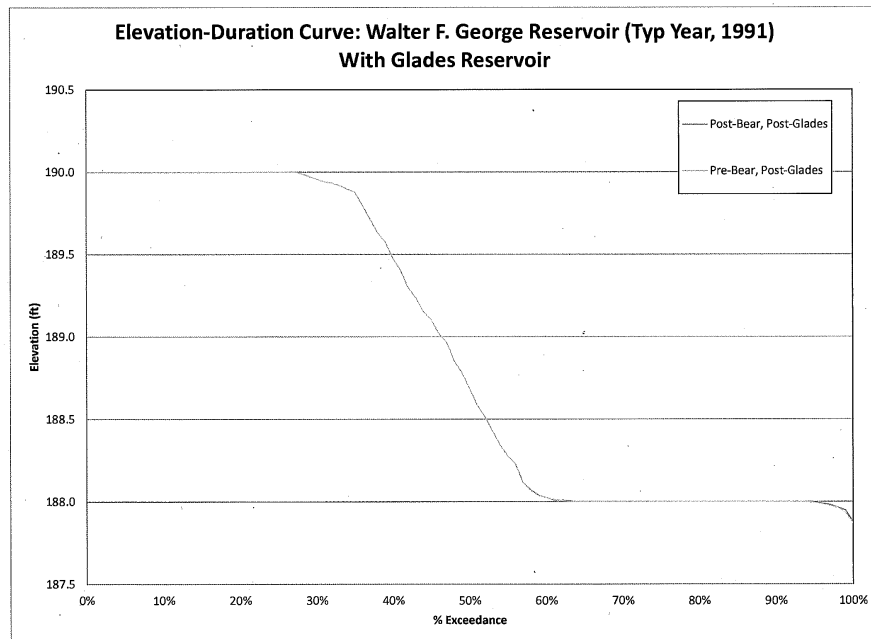






## APPENDIX E

## CD OF SPREADSHEETS AND ResSim FILES



January 15, 2014  
Project 11717017

Schnabel Dam Engineering, Inc.  
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**From:**  
**Sent:** Wednesday, January 27, 2016 7:40 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Protect fish and wildlife in the Apalachicola River, Floodplain and Bay ecosystem.

---

- *The health, productivity and sustainability of the Apalachicola River and Bay are critical to the economy and cultural heritage of Florida and the entire Gulf Coast. The Corps of Engineers must give the same fair and equal consideration to fish and wildlife conservation in the Apalachicola River ecosystem as they do the other authorized purposes of the ACF river system.*

A

- *The proposed revised manual threatens the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem.*

B

---

Susan Schroering

#### Response to ACF103 – Susan Schoering

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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**From:** Francis Giknis  
**Sent:** Wednesday, January 27, 2016 7:30 AM  
**To:** ACF-WCM@  
**Subject:** [EXTERNAL] Fairness for Apalachicola Bay

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Having lived both in Atlanta and in Franklin County, Florida, I am well aware of both sides of the water dispute between Georgia and Florida. I can attest to the desperate situation that has been created in part by the low water flows into Apalachicola Bay, and believe that this situation is not adequately addressed by the draft version of your plan. Please reconsider the needs of the Bay in changes to the plan. Atlanta is fighting for growth (while taking no creative measures to find alternative water sources) while Apalachicola Bay is fighting for it's very survival and, as you know if the Bay continues to fail the impact will be felt throughout the Gulf and beyond.

A

At a time when environmental issues are being increasingly recognized as of critical importance, it is surprising and disappointing that the life of one of our Nation's greatest natural resources has been placed at risk and that little is being done to save it. Please do what you can to fairly address water flows and help save the Bay.

B

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Francis and Ann Giknis6

#### Response to ACF104 – Francis and Ann Giknis

- A. Potential adverse effects on hydrodynamic, ecological, and socio-economic conditions in Apalachicola Bay that are associated with the PAA, compared to the NAA (current operations), are addressed in section 6 of the EIS. The analysis concludes that the PAA would have little to no effect on these conditions in the bay compared to the NAA.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF105 – Hugh MacMillan

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**From:** Hugh Macmillan  
**Sent:** Tuesday, January 26, 2016 11:49 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] EIS comment

To your "tough balancing act," please add appropriately weighing the water quantity and quality needs of Apalachicola Bay, that it may keep bringing forth food for the region.

A
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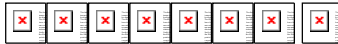
Hugh MacMillan

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.



## Response to ACF106 – Donna McCoy

**From:** Donna McCoy  
**Sent:** Tuesday, January 26, 2016 8:33 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola



- *Dear Army Corps of Engineers the health, productivity and sustainability of the Apalachicola River and Bay are critical to the economy and cultural heritage of Florida and the entire Gulf Coast. The Corps of Engineers must give the same fair and equal consideration to fish and wildlife conservation in the Apalachicola River ecosystem as they do the other authorized purposes of the ACF river system.*
- *It is imperative that the Corps' rewrite of its manual revises the way it manages the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain*

A

B

A way of life for an entire region may not survive without public intervention into the Corps' management of the water in this river system--specifically the Corps' management of the quantity and timing of the flow of the rivers water.

Thank you,  
 Donna McCoy

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF107 – Robert Stilley

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**From:** Robert Stilley  
**Sent:** Tuesday, January 26, 2016 2:48 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola River

Gentlemen:

Please do not reduce the amount of fresh water coming down to river to Apalachicola Bay. The estuary and bay are critical to the economy of Franklin County and to the environment surrounding our area. Freshwater is critical to our oyster beds. The reduced flow has severely impacted their ability to thrive, which in turn had severely impacted the livelihoods of most of our seafood worker residents. Further restrictions on the flow will devastate this area.

A

Don't allow the voices of many around the headwaters of our river to drown out our voices. I'm sure other areas requesting more water for their residents will be able to survive, and find other solutions to satisfy their desires. Not so with our residents – we just don't have the resources available that they do. Our future depends on the river, and on your decisions in this matter. Don't allow Apalachicola – the oyster capital of the gulf coast – to turn into a ghost town. That would be a terrible tragedy. Thank you.

Robert Stilley

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF108 – Arthur Mazyck

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**From:** Arthur Mazyck  
**Sent:** Tuesday, January 26, 2016 1:44 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola Basin

Sirs, I was born in the Apalachicola basin and still maintain a house at Port St. Joe so my concern for the welfare of the Apalachicola River ecosystem is both long-standing and current. I urge the Corps to upgrade its activities toward fish and wildlife conservation in the Basin with special reference to the management of the flow of fresh water into the Apalachicola ecosystem.

Thank you for your attention.

Arthur Mazyck5

Sent from my iPad

A

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF109 – John Solomon

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**From:** John C. Solomon  
**Sent:** Tuesday, January 26, 2016 1:38 PM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Corps Environmental Impact Statement Public Input Deadline 1.30.15

To Whom It May Concern,

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I am writing this letter as the Executive Director of the Apalachicola Bay Chamber of Commerce and lifelong resident of this area. I am very invested in the success and longevity of our area. The health, productivity and sustainability of the Apalachicola River and Bay are critical to the economy and cultural heritage of Florida and the entire Gulf Coast. The Corps of Engineers **must** give the same fair and equal consideration to fish and wildlife conservation in the Apalachicola River ecosystem as they do the other authorized purposes of the ACF river system. A It is imperative that the Corps' rewrite of its manual revises the way it manages the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem. Please protect our resources and our future. B

---

John C. Solomon  
 Executive Director  
 Apalachicola Bay Chamber of Commerce

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

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**From:** Dixie Cordell  
**Sent:** Tuesday, January 26, 2016 11:29 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] SEPA's comments regarding the ACF Master Water Control Manual Update  
**Attachments:** Letter 1-26-16 SEPA Comments.pdf

Good afternoon,

Attached is a letter in response to the ACF Master Water Control Manual Update.

Thanks,

***Dixie K. Cordell***

Dixie K. Cordell, PE  
U. S. Department of Energy  
Southeastern Power Administration



Department of Energy  
Southeastern Power Administration  
Elberton, Georgia 30635-6711

January 25, 2016

Colonel Jon J. Chytka  
District Commander  
Mobile District, USACE  
Attn: CESAM-PD  
P. O. Box 2288  
Mobile, AL 36628-0001

Dear Colonel Chytka:

Southeastern Power Administration (Southeastern) is pleased to have an opportunity to provide comments on the Mobile District's Draft Environmental Impact Statement (DEIS) regarding the update to the Water Control Manual for the Apalachicola-Chattahoochee-Flint (ACF) River Basin. Southeastern is responsible for marketing power from the District's hydroelectric projects located in the ACF basin, and as such, we are very interested in any actions that will be taken which will affect the projects in terms of capacity reductions, energy reductions, seasonal redistributions of power, operational constraints, or restrictions to the daily timing of peaking generation. In reviewing the document, we have identified a number of areas of concern.

Of major concern to Southeastern are the proposed operational zones for the projects. Operation under this proposal drives the system into drought operation based on transitioning from zone 2 into zone 3 of composite storage when clearly the vast majority of system conservation storage still remains and should be available for use to benefit authorized project purposes. The document indicates that the system will operate in this drought state approaching twenty percent (20%) of the time, which is excessive. The document also indicates that the system would not transition out of drought operation until zone 1 is reached. Operating in this manner imposes unnecessary reductions in generation and additional costs for replacement power on the hydropower purpose, even though a significant amount of the designated conservation storage remains available. In addition, the close proximity of a number of the zones for the individual projects, as depicted in the document, would make it virtually impossible to operate within some of the specific areas. We would encourage the District to reevaluate the proposed zones of operation in order to incorporate additional operating flexibilities for the authorized purposes and to develop a methodology whereby this revised system operation could be transitioned into over the next two decades as demands increase and thereby allowing some level of the current benefits to be realized in the interim.

Southeastern disagrees with the selection of the current conditions with superimposed 2007 basin demands as the baseline or NAA. A true representative baseline for analysis and comparison of impacts under the NEPA process should be from the endpoint of a previous NEPA analysis. The

A

B

#### Response to ACF110 – SEPA

- A. Coinciding the initiation of drought operations at the initial onset of reduced basin inflow is the intent of revising the drought operations. This typically occurs during periods of sustained rainfall deficit. Droughts are typically slow to develop in the ACF Basin but historically last approximately 6 months to 3 years. The drought operation trigger changed from Composite Zone 4 in the NAA to the higher Composite Zone 3 in the PAA. A more conservative operation is initiated sooner by slowly reducing the flow requirement from Jim Woodruff Dam. Gradually reducing releases from the storage mimics the slowly developing nature of drought conditions. Initiating the drought Composite Zone 4 has a tendency to lag behind the presence of drought conditions. Section 6.5.3 of the EIS summarized the hydropower effects analysis. The total energy and capacity benefit of the PAA decreases less than 1 percent over the NAA. The results do not indicate a significant reduction in hydropower or significant increase in replacement cost. The updated WCM would become active once approved. South Atlantic Division policy requires review of the water control manuals and plans every 5 years, which will allow for timely modifications as conditions and demands change.
- B. Council on Environmental Quality (CEQ) regulations for implementation of NEPA require consideration of the NAA (section 1502.14). In the CEQ's memorandum of March 23, 1981, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, question no. 3 addresses the NAA. The response to question no. 3 states, in part:

The first situation might involve an action ... where ongoing programs initiated under existing legislation and regulations will continue, even as new plans are developed. In these cases, "no action" is "no change" from the current management direction or level of management intensity. To construct an alternative that is based on no management at all would be a useless academic exercise. Therefore, the "no action" alternative may be thought of in terms of continuing with the present course of action until that action is changed.

Consequently, for purposes of the Master WCM update process, the NAA reflects current reservoir operations as they have evolved over time in response to laws, regulations, policy, and new technical information. Basing the NAA for the ACF Basin on a pre-NEPA 1958 WCM or a predam condition to assess the effects of alternative WCM update plans would neither accurately reflect current baseline operations nor be consistent with "no action" as defined in the referenced CEQ memorandum.

selection of the current baseline arbitrarily dismisses impacts which have already occurred to the hydropower purpose over the last several decades, and for which no compensation or reduction in project cost assignments has been provided. In addition, it appears inappropriate to make the analysis utilizing 2007 basin demands for the NAA which are not representative of current conditions, and a hybrid of demands (2040 for the Atlanta area and 2007 for the rest of the basin) for the PAA which does not accurately represent the 2040 NEPA analysis timeline.

Southeastern also disagrees with the concept of composite performance indicators to measure impacts to hydropower in the river basin. This generic approach masks project-specific impacts which occur and obscures the true harm of the proposed revision. From a power marketing perspective, the generation resource must be available on a by-project basis to satisfy customer's peak load requirements during the time scheduled by the customer. Altering project operations such that generation is shifted during the day, reduced during peak time periods, or completely curtailed in order to achieve and maintain higher project elevations significantly reduces and devalues the product available for sale to the customer. This socialization of the system dismisses the specific generation contribution each project has historically provided in satisfying the Government's power delivery obligations.

C

Clearly, this update to the water control manual represents a continuation of the erosion of benefits available to hydropower. Since the projects were authorized, constructed, and began operating decades ago, there have been a multitude of changes to the system which have fundamentally altered the benefits hydropower receives from the projects. The conservation pools contemplated in original project design documents are not usable in the manner originally intended and upon which cost benefit studies were based. In every case, only a small fraction of the original conservation pool is classified as a zone of normal operation, and redefined zones impose additional restrictions and reductions to power production. From the description of the operations in the various zones, it is obvious that the hydropower purpose has been reduced to an incidental or conjunctive use function; however, there is no mention of a corresponding reduction in cost assignment or compensation for lost use of the majority of system conservation storage. The federal hydropower which Southeastern markets to repay project costs is a product which must be usable and have value in the marketplace in order to be sold. If the revision to the water control manual is implemented as proposed, the continued marketability of the federal hydropower may very well be in question.

D

Southeastern appreciates the effort the Mobile District has put into the development of the Draft Water Control Manual thus far and understands the many challenges ahead. We would look forward to working with the District in refining this document.

Sincerely,



Herbert Nadler  
Assistant Administrator  
for Power Resources

#### Response to ACF110 – SEPA

C. While only systemwide impacts to hydropower are shown in the draft EIS (in Table 6.5-3), total energy benefits for each federal and nonfederal plant are shown in Tables 4 and 5 of the Hydropower Analysis Report, which is provided in the WSSA in appendix B of the EIS. Each plant's dependable capacity is shown in Table 7-9 of the WSSA while Table 12 shows the value of the dependable capacity.

D. As stated in the purpose and need section of the EIS (section 1.2):

Specifically, the purpose and need for the federal action is to determine how the federal projects in the ACF Basin should be operated for their authorized purposes, in light of current conditions and applicable laws, and to implement those operations through updated water control plans and manuals. This action will result in an updated Master Manual, including updated water control plans and manuals for the ACF system and each federal project within that system, that 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.

Those changes have resulted in the changes to operations shown in the WCMs, which continue USACE's goal of operating ACF Basin projects in a balanced manner to fulfill all authorized purposes.

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**From:** Karen Graffius-Ashcraft  
**Sent:** Tuesday, January 26, 2016 11:14 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] draft Environmental Impact Statement

I am writing to express my concern for the sustainability of your management plan for the Apalachicola River and Bay. It is critical that you consider fish and wildlife conservation in equal part to any other authorized use of the Apalachicola River ecosystem, specifically in your management of the quantity and timing of the flow of freshwater to the Apalachicola River and Bay. The river's floodplain is critical to the productivity of Apalachicola Bay and cannot thrive when starved of freshwater. The health and productivity of both the river and bay are critical to the economy and cultural heritage of Florida, especially the Gulf Coast. Please revise your environmental impact statement to reflect the equal value of fish and wildlife conservation to any other use of the resource of fresh water.

A

Thank you for your attention.

Sincerely,  
Karen Graffius-Ashcraft

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.



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**From:** on behalf of Brad Ploeger  
**Sent:** Wednesday, January 27, 2016 9:44 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Comment on the ACF-WCM  
**Attachments:** ACF-WCM Letter to CoE.pdf

To Whom It May Concern,

Please find our comment letter attached.

Thanks,

Brad Ploeger  
Chief Operating Officer  
Whitewater Express / Ski Celebration

***Your High Adventure Starts Here***

***USA Today: "TOP 12 MAN MADE ADVENTURES IN THE WORLD"***

***Atlanta Journal: "BEST IN THE SOUTHEAST"***

***Atlanta Magazine: "TOP 10 DESTINATIONS IN THE SOUTH"***

***Ga Public TV: "Move over Chattooga, BEST IN GA IS THE CHATTAHOOCHEE"***

January 27, 2016

Colonel Jon J Chytka  
Commander, Mobile District  
US Army Corps of Engineers  
Attn: PD-EI (ACF-DEIS)  
PO Box 2288  
Mobile, AL 36628

Dear Col. Chytka,

We are writing to ask the United State Corps of Engineers to include flow targets for the Middle Chattahoochee River in the Apalachicola, Chattahoochee, and Flint River Basin (ACF) Master Water Control Manual and Draft Environmental Impact Statement (DEIS) updates. When the Corps began the process of producing the updates the Chattahoochee Whitewater Park had not begun operations on the Chattahoochee River between the cities of Columbus, Georgia and Phenix City Alabama. If the Corps of Engineers establishes and honors flow targets for the river at Columbus, Georgia it will positively benefit the citizens of the Chattahoochee Valley Region through increased water quality, economic development, increased recreation opportunities, and employment opportunities.

A

Our request that the Corps of Engineers include flow targets for the Chattahoochee River at Columbus, GA was previously agreed to by the Governors of Georgia, Alabama, and Florida in 2003. The flow targets agreed to by the Governors include a 1350 cubic feet per second (cfs) daily average and 1850 cfs weekly average on the Chattahoochee River at Columbus, Georgia. Establishing this flow target would demonstrate the Corps of Engineers commitment to manage the waters of the ACF Basin in an equitable manner for all regions within the basin. Additionally, the flow targets would benefit the Chattahoochee Valley region in four primary ways.

Firstly, if flow targets are established as requested above the general water quality would improve on the river and further support the return of native species to the river. Since the removal of the Eagle and Phenix Dam in 2012, and the City Mills Dam in 2013, we have personally witnessed the return of native species to the Chattahoochee Whitewater Park. Populations of Shoal Bass are returning and we have a project underway to reestablish Shoal Spider Lilies in the waters of the Chattahoochee River. These are just two species beginning to return to their native habitat in this unique urban river environment.

B

Secondly, since the removal of the dams and the opening of the Chattahoochee Whitewater Park in 2013, the river has become a focus of economic development for both Columbus, Georgia and Phenix City, Alabama. New businesses are being established and existing hospitality business are seeing growth due to the influx of individuals from around the southeast seeking to enjoy the Chattahoochee Whitewater Park. The continued growth of businesses in the region is utterly dependent on flow targets to guarantee water levels and the continued success of the park.

A. Whatever purported agreements were made between the governors of the states of Alabama, Georgia, and Florida in 2003 were never approved by the United States Congress; therefore, USACE has no authority to operate for these flow targets. The stated daily and weekly average flow targets at Columbus, Georgia, are established in the Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (refer to section 6.1.1.2.1). Each of the FERC target flows include an important qualifier, e.g., “a daily average target minimum flow of 1,350 cfs, or inflow, whichever is less” (emphasis added). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent under the NAA (refer to section 6.1.1.2.3.9).

B. The authorized purposes of the federal ACF system do not include a specific directive to meet flow targets at Columbus, Georgia. Daily and weekly average flow targets at Columbus are established in the 2004 Federal Energy Regulatory Commission (FERC) license for Georgia Power Company projects downstream of West Point Lake (see section 6.1.1.2.1 in the EIS). Each of the FERC target flows include an important qualifier (e.g., “a daily average target minimum flow of 1,350 cfs, or inflow, whichever is less” [emphasis added]). Model results over the 73-year hydrologic period of record indicate that a daily average flow of 1,350 cfs at Columbus would be achieved on 94 percent of the days for the PAA compared to 95 percent for the NAA, which is representative of current ACF Basin project operations (see section 6.1.1.2.3.9 of the EIS). USACE is unaware of specific adverse impacts to water quality, fish and wildlife habitat in the restored reach of the river, business and economic development, or recreational services and employment in the Columbus area as a result of current USACE project operations

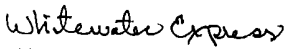
Thirdly, the development of the Chattahoochee Whitewater Park has created numerous recreational opportunities. Visitors today can engage in whitewater rafting, kayaking, stand up paddle boarding, fly fishing, tubing, stand up paddleboard yoga, and countless other activities. In 2015, more than 40,000 guests enjoyed Whitewater Rafting on the Chattahoochee River. Of those guests, more than half of them traveled more than 75 miles for their experience. The establishment of flow targets would allow us more certainty in planning operations and providing services to the growing number of guests seeking to enjoy the Chattahoochee River.

Lastly, in providing services to guests on the Chattahoochee River we employ a peak of nearly 200 staff members. In addition to our staff, the other hospitality businesses in the area have increased staff to serve the visitors coming to enjoy the Chattahoochee Whitewater Park. By establishing and honoring flow targets at Columbus, Georgia the Corps can help support the growth of the hospitality and recreation businesses and further employment opportunities in the Chattahoochee Valley Region by providing predictable and minimal water flows.

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We recognize that the Corp of Engineers has to balance the water needs of all stakeholders in the ACF Basin. The flow targets we are asking the Corps to include have been agreed to previously by the Governors of all three states in the ACF Basin. These flow targets are a common-sense measure that can ensure the residents and businesses of the Chattahoochee Valley Region have a resource that they can continue to enjoy and utilize in a sustainable manner for generations to come.

Sincerely,

  
Whitewater Express

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**From:** Carol Talley  
**Sent:** Tuesday, January 26, 2016 10:27 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] U.S. Army Corps of Engineers, Environmental Impact Statement - Public Comment

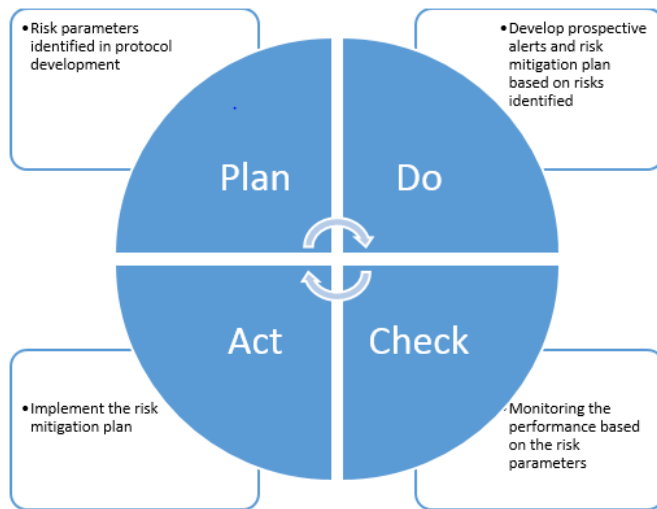
Army Corps of Engineers,

My name is Carol Talley. I am a resident of St. George Island, Florida. I am writing to provide input on the Corps' draft Environmental Impact Statement regarding the Apalachicola River and Bay.

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- It is imperative that the Corps of Engineers rewrite of its manual revises the way it manages the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem.
- Why should downstream communities, industries, ecosystems, etc. pay the price for Atlanta's greedy government allowing uncontrolled growth without regard to having an infrastructure to support that growth? A
  - In 1994 I was in Aruba. At that time, Aruba had a moratorium on building because they did not feel that they had the infrastructure to support additional growth. I have never forgotten this situation and how a small island had the foresight to put steps in place to plan for the growth that they knew was coming even though they realized that they would be limiting their economy in the short term, they knew it was necessary in order to maximize the economy in the long term. Atlanta certainly has a lot to learn.
- When visiting Atlanta, it is easy to see that they are doing little to conserve water. Lawns are green with sprinklers running. Commercial carwashes are still in operation not to mention all those people washing their cars, trucks, boats, etc. in their driveways.
- The Apalachicola, Chattahoochee, and Flint Rivers basin is one of the most diverse, productive, and economically important aquatic systems in the southeastern United States. Once it is destroyed, there is no going back. There is no chance for a do-over. It is critical that any upstream actions are well thought out, have defined goals and measures, are properly implemented, monitored frequently, and can be reversed when and if the measurements warrant it.
  - "Clinical Trial" is a medical term that certainly fits this situation.
  - Plan → Do → Act → Check is also a process that comes to mind

- A. Managing and regulating water supply withdrawal is a responsibility generally left to the states. Under the Water Supply Act of 1958, the State of Georgia has requested that USACE consider reallocating a portion of the conservation storage in Lake Lanier to meet future water supply storage needs. USACE has considered various alternatives to address the state's request, including "no action" to reallocate storage, reflected in the NAA and several other alternatives. Model simulation of the proposed reallocation of Lake Lanier conservation storage for water supply, as included in the draft PAA, found that flow conditions in the Apalachicola River downstream of Jim Woodruff Lock and Dam and continuing to the bay would be essentially the same as the NAA (see section 6.1.1.2.5 of the EIS).



## Response to ACF113 – Carol Talley

- Atlantans tend to look at this water issue as “people vs. oysters”. It is NOT a people vs. oysters issue, it is a people vs. earth issue and if we make the wrong decisions, the earth will suffer and subsequently the people will suffer.
  - Where does the story end? Will Atlanta be able to ruin the Apalachicola River and Bay and all that goes along with it? If so, will Columbus, Georgia be the next victim? Will Atlanta just continue to absorb all the water resources south of them?
- 
- The health, productivity and sustainability of the Apalachicola River and Bay are critical to the economy and cultural heritage of Florida and the entire Gulf Coast. The Corps of Engineers must give the same fair and equal consideration to fish and wildlife conservation in the Apalachicola River ecosystem as they do the other authorized purposes of the ACF river system. B
- 

It is imperative that you not do irreversible damage to our bay.

Thank you for your attention and consideration,

Carol Talley

- B. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

## Response to ACF114 – Walter Miller

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**From:** walter miller  
**Sent:** Tuesday, January 26, 2016 9:32 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola River and Bay

I would like to support whatever measures necessary to continue to preserve the wonderful resources of the Apalachicola River and bay.

I live in central Georgia but visit the Apalachicola area often to fish and enjoy natural beauty of the bay. I also fish Dead Lakes that feed into the River at Wewahitchka, FL. With out good management practices Dead Lakes would lose all their beautiful cypress forests.

Atlanta is important to the "progress" of the southeast, but I don't think many of their residents realize how much the Apalachicola River and bay mean to their, and their children's, future.

Thank you for allowing comment on this important issue.

Walter Miller  
Sent from my iPad

A

A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF115 – Donna Duncan

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**From:** Donna Duncan  
**Sent:** Tuesday, January 26, 2016 8:51 AM  
**To:** ACF-WCM  
**Cc:** Apalachicola Riverkeeper  
**Subject:** [EXTERNAL] Corps Environmental Impact Statement Public Input Deadline 1.30.15  
**Attachments:** Donna Win 7 Duncan.vcf

To Whom It May Concern:

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I am writing as a lifelong resident and business owner. I was born and raised here in Apalachicola and returned to practice law. I am very invested in the success and longevity of our area. The health, productivity and sustainability of the Apalachicola River and Bay are critical to the economy and cultural heritage of Florida and the entire Gulf Coast. The Corps of Engineers must give the same fair and equal consideration to fish and wildlife conservation in the Apalachicola River ecosystem as they do the other authorized purposes of the ACF river system. A

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It is imperative that the Corps' rewrite of its manual revises the way it manages the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem. Please protect our resources and our future. B

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Donna Duncan  
 Sanders and Duncan, P.A.

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.



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## Response to ACF116 – Kathleen Herzog

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**From:** Kathleen Herzog  
**Sent:** Tuesday, January 26, 2016 8:02 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Water control manual

This comment supports the Apalachicola Riverkeeper statement. My personal involvement is buying a tree farm and building a house on it. I moved here due to the amount of public land protecting the watershed of the Apalachicola Bay I taught International Baccalaureate biology for 31 yrs and understand the freshwater and nutrient flows needed for a successful estuary. The lack of flow provided by the draft manual will harm my total investment in this area of north Florida. Thomas Herzog.

A

Sent from my iPhone

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.



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**From:** Kristina Lamons  
**Sent:** Tuesday, January 26, 2016 7:59 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola river and bay--please help

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- *The health, productivity and sustainability of the Apalachicola River and Bay are critical to the economy and cultural heritage of Florida and the entire Gulf Coast. The Corps of Engineers must give the same fair and equal consideration to fish and wildlife conservation in the Apalachicola River ecosystem as they do the other authorized purposes of the ACF river system.*

A

- *It is imperative that the Corps' rewrite of its manual revises the way it manages the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem.*

B

Kristina Ilgner Lamons  
 Sent from my iPhone

#### Response to ACF117 – Kristina Ilgner-Lammons

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF118 – sws

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**From:**  
**Sent:** Tuesday, January 26, 2016 7:58 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola River and Bay

It is urgent that the welfare and sustainability of the whole eco system that the Apalachicola river sustains be given careful and thoughtful consideration.

The health, productivity and sustainability of the Apalachicola River and Bay are critical to the economy and cultural heritage of Florida and the entire Gulf Coast. The Corps of Engineers must give the same fair and equal consideration to fish and wildlife conservation in the Apalachicola River ecosystem as they do the other authorized purposes of the ACF river system.

A

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

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**From:** Kim Sash  
**Sent:** Tuesday, January 26, 2016 7:51 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola River - environmental impact

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*The health, productivity and sustainability of the Apalachicola River and Bay are critical to the economy and cultural heritage of Florida and the entire Gulf Coast.*

*The Corps of Engineers must give the same fair and equal consideration to fish and wildlife conservation in the Apalachicola River ecosystem as they do the other authorized purposes of the ACF river system.*

A

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*It is imperative that the Corps' rewrite of its manual revises the way it manages the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem.*

B

**You need to understand a whole Gulf is in your care. If you kill the Gulf everything will suffer, even upstream.**

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Kim Sash

#### Response to ACF119 – Kim Sash

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF120 - Peter Gallant

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**From:** Peter Gallant  
**Sent:** Tuesday, January 26, 2016 7:44 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola Bay

It is without question the most critical question of our time. It's clear that without a healthy Bay this entire area will wither and die. Please insure that the living Bay remains alive. Thankyou, Peter Gallant, Apalachicola.

A

Sent from my Verizon Wireless 4G LTE smartphone

- A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF121 – Robert Byerts

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**From:** Robert Byerts  
**Sent:** Tuesday, January 26, 2016 7:36 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola River  
**Attachments:** 20151001 shell oyster bar.jpg

Dear ACE

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As a North Florida resident for most of my 57 years I have been fortunate to enjoy the Apalachicola River many times. The Apalachicola River provides boating, swimming, fishing, navigation, wildlife habitat and many other benefits to me and other area residents. The health, productivity and sustainability of the Apalachicola River and Bay are critical to the economy and cultural heritage of Florida and the entire Gulf Coast. The Corps of Engineers must give the same fair and equal consideration to fish and wildlife conservation in the Apalachicola River ecosystem as they do the other authorized purposes of the ACF river system.

A

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In my time I have seen the degradation of the Apalachicola River. Water flows have declined, affecting wildlife and fish as well as the nearby residents. It is imperative that the Corps' rewrite of its manual revises the way it manages the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem.

B

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It's time for the Army Corps to consider what is one of the most precious and important resources we have in the state of Florida. Not only from an economic standpoint and for the oyster industry but from a heritage standpoint. The failure of the natural flow of freshwater has increased the salinity in the bay. And that delicate mixture of salt and freshwater is what oysters need to grow. My 97 year old mother lives mostly to enjoy oysters from Apalachicola Bay. I attach a picture. Those oysters are harder and harder to get and will likely become unavailable unless the ACE revises the way it manages the flow of freshwater in the Apalachicola River system.

C

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Please make sure you provide enough freshwater for the oysters and the rest of the fish and wildlife that depend upon the Apalachicola River.

Robert Byerts  
Tallahassee, FL

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.
- C. The economic, social, and cultural resource effects associated with the Master WCM update alternatives are presented in section 6.6 through 6.8 of the EIS. The USACE PAA would have little to no effect on flow and water quality conditions in the Apalachicola River downstream of Jim Woodruff Lock and Dam compared to the NAA (current reservoir operations). Accordingly, the PAA is not expected to cause a change in Apalachicola Bay ecological or socioeconomic resources compared to current operations.

## Response to ACF122 –Marylyn Feaver

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**From:**  
**Sent:** Tuesday, January 26, 2016 7:20 AM  
**To:** ACF-WCM  
**Cc:** Feaver, Ed  
**Subject:** [EXTERNAL] Chattahoochee-Apalachicola Rivers EIS

I attended the Corps of Engineers hearing at Eastpoint, Florida last fall. I studied every single exhibit and queried a number of your representatives, quite extensively. My husband and I had to drive 1 1/2 hours to get there -- this is how important it was to find out what you proposed.

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I kept getting: "it's not in our jurisdiction or it's not in our are of coverage" so often it was discouraging. Most specifically those were in response to the impact the proposal would have had on the mouth of the Apalachicola, even including East Bay, which, as a paddler I would include as part of the Apalachicola River. One of your "biologists" even told me that the amount of flow at the mouth does not affect salinity at the bay!

I took home a copy of your EIS in print, hoping to find something specific to which I could start a comment. As often happens, other tasks intervened and I never got to study the document, nor submit a comment.

A

We have camped and paddled a number of Corps of Engineers' projects, most recently Lake Cochiti (Rio Grande), New Mexico. We appreciate your facilities; they are better than the average public campground and often better maintained, and, of course, often on waters we can paddle. We went into the program with a positive perspective on the Corps, although as Florida Master Naturalists, we were made aware of the destruction of native ecosystems by dam building. However, we assumed that once built, the stewards of the waterways would be mindful of the current ecosystem.

To not include the impact of your plans on the Apalachicola estuary and bay is to disregard one of the biologically rich habitats which Corps management is destroying. To focus on metro Atlanta and its water needs seems to harken back to the early days of dam building when flood control and irrigation were the main objectives. I still honor the efforts of those New Deal politicians who were able to create jobs, electricity and control of the annual floods which ravaged rural American, but since then we have learned a lot about singularly focused mass public projects. I think less, forinstance, about the Three Gorges Dam on the Yangtze, having cruised a good length above and below that dam and having seen the erosion and impact on the ecosystem.

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Until you address the ecological impact of your current plan on the mouth of the river, I ask for no action. I ask for a revised management plan to extend to the whole Chattahoochee-Apalachicola River system, including the area the river empties into, an area which has been very much environmentally impacted under your management.

B

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Marylyn Feaver, Quincy, Gadsden County, Florida

A. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. However, the environmental effects of the PAA on the Apalachicola River and Bay, when compared to the NAA (i.e., current reservoir operations), are considered in the EIS. The analysis in the EIS demonstrates that the PAA would result in little to no change in flow and water quality conditions in the Apalachicola River and Bay, and consequently there would be little to no effect on biological, cultural, and other resources in the river and bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

B. The purpose of the update to the Master WCM is to reflect appropriate project operations in light of current conditions in the basin. All aspects of the ACF project have been considered. The model simulation of project operations in the basin under various alternatives using 73 years of hydrologic record indicate that flow conditions in the Apalachicola River downstream of Jim Woodruff Lock and Dam would be about the same under the PAA as they would be under the NAA (which generally reflects current project operations). Thus, freshwater inflow to Apalachicola Bay would not be expected to change appreciably under the PAA compared to the NAA. As a result of provisions in the PAA to augment flows from Jim Woodruff Lock and Dam from January through May to provide improved opportunity for downstream navigation (as long as sufficient water is available in the system), flow conditions in the Apalachicola River in those months would likely be slightly higher for the PAA than for the NAA.

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**From:** LeAnn Luce  
**Sent:** Tuesday, January 26, 2016 6:53 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Apalachicola River & Bay

Hello...I am writing in regards to our National Treasure..the Apalachicola River and Bay.

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***the health, productivity and sustainability of the Apalachicola River and Bay are critical to the economy and cultural heritage of Florida and the entire Gulf Coast. The Corps of Engineers must give the same fair and equal consideration to fish and wildlife conservation in the Apalachicola River ecosystem as they do the other authorized purposes of the ACF river system.***

A

- 
- It is imperative that the Corps' rewrite of its manual revises the way it manages the flow of freshwater needed to maintain the extraordinary richness and productivity of the Apalachicola River, Floodplain and Bay ecosystem.***

B

Please protect our natural resource and special natural treasure.

Thank you...LeAnn Luce

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.
- B. The authorized purposes of the federal ACF system do not include a specific directive to provide freshwater inflows to Apalachicola Bay to sustain the resources of the Bay. USACE does make releases to limit adverse effects to threatened and endangered species downstream of Jim Woodruff Lock and Dam, including Apalachicola Bay. USACE consulted on the PAA and the results are presented in appendix J of the final EIS. In the biological opinion the USFWS concluded that effects to estuarine invertebrate production are insignificant because the PAA provides slightly beneficial effects from increasing the number of freshwater pulses and increasing the number of days greater than or equal to 16,200 cfs in the winter. USFWS also anticipate only minor changes in salinity regimes and estuarine habitat due to the WCM.

## Response to ACF124 – Carol Weyrich

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**From:** carol weyrich  
**Sent:** Tuesday, January 26, 2016 6:12 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] ACF River basin

We want fair and equitable use of the ACF River Basin.

A

- A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.



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**From:** John Barwick  
**Sent:** Wednesday, January 27, 2016 9:41 AM  
**To:** ACF-WCM  
**Subject:** [EXTERNAL] Comments on Apalachicola River and Bay

Gentlemen:

Please keep the viability of the Apalachicola River and Apalachicola Bay in mind as the rewrite of your manual progresses.

This is a very special ecosystem and its health, productivity and sustainability are critical to the economy and cultural heritage of this area.

I have been going to Apalach and St. George Island since the late 1960's and treasure the culture and old time fishing village quality of the area. Just in the last few years, I have started keeping a bay boat in Apalach and enjoy frequent fishing trips to the area. We fish the bay and the river system. Apalachicola oysters are well known for their quality.

A

It is imperative that the flow of freshwater needed to maintain the extraordinary richness and productivity of this ecosystem be properly maintained. Without it, a way of life for an entire region may not survive. This ecosystem should be given the equal or higher priority to other uses of the rivers waters.

Thank you for your consideration!

John

John O. Barwick, III  
 President / CEO  
 River Mill Data Management, LLC



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A. The PAA includes fish and wildlife conservation operations throughout the basin (e.g., the reservoir fish spawn operations, minimum flow provisions in the Apalachicola River, and fish passage at Jim Woodruff Lock and Dam). Section 5 of the EIS provides additional information on the PAA. The EIS considered and disclosed the expected impacts that the PAA could have on fish and wildlife resources in the Apalachicola River and Bay (or elsewhere in the system). If expected impacts to significant resources would be adverse as a result of revised operations, USACE must consider potential measures to mitigate those effects. The analysis presented in section 6 of the EIS indicates that the PAA would have a minimal effect on flow conditions in the Apalachicola River and into the Bay, compared to current reservoir operations under the NAA. Because flow and water quality changes in the Apalachicola River and Bay are not expected under the PAA, no anticipated incremental effect would be expected on fish and wildlife resources in the bay.

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