



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

REPLY TO
ATTENTION OF

March 7, 2006

Inland Environment Team
Planning Environmental Division

Ms. Gail Carmody
Ecological Services
U.S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City, Florida 32405-3721

Dear Ms. Carmody:

This letter is to request the initiation of formal consultation pursuant to Section 7 of the Endangered Species Act of 1973 (ESA), and your concurrence with a determination that the U.S. Army Corps of Engineers (Corps), Mobile District water management operations at Jim Woodruff Dam, and the associated releases to the Apalachicola River, are not likely to jeopardize the continued existence of federally listed species or result in the adverse modification or destruction of designated critical habitat. Mobile District's plan for operations will also not foreclose future options available in issuing new reasonable and prudent alternative measures. Therefore, the proposed water management operations at Jim Woodruff Dam are consistent with Section 7(d) of the ESA.

The Apalachicola River is known to support three federally listed species: Gulf sturgeon (*Acipenser oxyrinchus desotoi*), fat threeridge mussel (*Amblema neislerii*), and purple bankclimber mussel (*Elliptoideus sloatianus*). The U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) listed the Gulf sturgeon as threatened on September 30, 1991 (56 FR 49653). The USFWS listed the fat threeridge mussel as endangered and the purple bankclimber mussel as threatened on March 16, 1998 (Federal Register, vol. 63, no. 50, pp. 12664–12687). The USFWS and NMFS designated critical habitat for the Gulf sturgeon on March 19, 2003 (Federal Register, vol. 68, no. 53, pg. 13370). Critical Habitat Unit 6 includes the main stem of the Apalachicola River from the Jim Woodruff Lock and Dam, Gadsden and Jackson Counties, Florida, downstream to its discharge at East Bay or Apalachicola Bay, Franklin County, Florida.

Jim Woodruff Dam was constructed in 1957 and represents the most downstream Federal reservoir project within the Apalachicola, Chattahoochee, Flint Rivers (ACF) system. The reservoir projects in the ACF system include Jim Woodruff Dam (Lake Seminole), George W. Andrews Dam and Lake, Walter F. George Dam and Lake, West Point Dam and Lake, and Buford Dam (Lake Sidney Lanier). The ACF system is authorized and operated for multiple project purposes, including flood control, hydropower generation, navigation, water quality, fish and wildlife conservation, water supply and recreation. The Mobile District operates the reservoirs within the ACF system in a balanced manner in an attempt to benefit all project

purposes. Retention of water in reservoir storage is used for the benefit of these multiple project purposes. Storage also provides a source for augmentation flows in support of downstream needs during periods of extended dry conditions or drought. The Jim Woodruff project is essentially a “run-of-river” project with very limited storage capabilities. Therefore, storage in upstream reservoirs must often be released in order to make controlled releases from Jim Woodruff Dam to meet downstream flow needs. Current operations under the draft ACF water control plan require a minimum flow of 5,000 cfs on the Apalachicola River to meet minimum water supply and fish and wildlife needs during low flow conditions.

The USFWS has previously requested the Mobile District to initiate consultation under Section 7 of the ESA for existing water control operations within the ACF system, as well as formal consultation for proposed updates or revisions to water control plans necessary to implement water supply reallocations in the basin. The Corps and the USFWS have previously agreed that consultation on updates or revisions of the water control plans represents the most appropriate mechanism to address the impacts of water management operations on endangered or threatened species in the basin. For a number of reasons, Mobile District has not to date been able to proceed with updates to the water control plans for the basin. In 1989, Mobile District proposed to update the ACF water control plan to reflect existing operations in the system, issuing a draft water supply reallocation report for Lake Lanier and draft water control plan for the ACF system. However, litigation filed by the State of Alabama in 1990 prevented the Mobile District from finalizing this water control plan. A proposed update to the water control plan was further delayed while the States of Alabama, Florida, and Georgia and the Corps participated in a comprehensive study of the water resources in the basin and possible mechanisms for allocation of water resources and management of the basin. As a condition to a Memorandum of Agreement between Alabama, Florida, Georgia, and the Corps, executed on January 3, 1992, the Corps withdrew the water supply reallocation report and draft water control plan and ceased any further processing of the documents. The comprehensive basin study led to recommendations for an ACF River Basin Compact in 1997, and negotiations between the States of Alabama, Florida, and Georgia on a water allocation formula for the ACF basin proceeded until August 2003, when the Compact expired without reaching agreement on an allocation formula. Litigation was then re-activated by the States of Alabama and Florida, and the Mobile District was unable to proceed with water reallocations or changes to the water control plan until a recent U.S District Court decision ruling that the Corps should expeditiously begin implementation of the Southeastern Federal Power Customers Inc. v. U.S. Army Corps of Engineers settlement agreement. As part of implementation of the settlement agreement, Mobile District intends to update the ACF water control plans to reflect existing operations, and to formally consult with the USFWS pursuant to Section 7.

Although Mobile District could not previously initiate consultation on overall project operations associated with a revision or update of the water control plan, the Mobile District has informally consulted with USFWS regarding the potential for impacts to the endangered and threatened species on the Apalachicola River, and possible adjustments to operations at Jim

Woodruff Dam and its releases into the Apalachicola River that could minimize or avoid impacts to or enhance the conservation of the species. This informal consultation has been conducted over the past six years. Information developed during the informal consultations, including data collection and analysis of habitat distribution and flow requirements, will assist in developing a biological assessment for future formal Section 7 consultation on the impacts of proposed updates to the water control plans for the ACF basin. The USFWS and Mobile District have previously agreed to complete this data gathering and analysis for input into the biological assessment prior to the initiation of formal Section 7 consultation on the water control plans.

In the meantime, the purpose of this letter is to request initiation of formal consultation under Section 7 of the ESA on our existing operations at Jim Woodruff Dam, and to describe how we intend to operate the Jim Woodruff Dam during the remainder of calendar year 2006 and until formal Section 7 consultation can be completed on our the existing water control plans for the ACF basin. We have determined that our existing operations at Jim Woodruff Dam are implemented in a manner that may affect but minimizes impacts to the threatened Gulf sturgeon, critical habitat for the Gulf sturgeon, and the two listed mussel species to the maximum extent practicable. Our operations at Jim Woodruff Dam and releases to the Apalachicola River are not likely to jeopardize the continued existence or result in any irreversible or irretrievable commitments of resources, nor foreclose the development of any reasonable and prudent alternatives to avoid jeopardy of the listed species, nor are our operations likely to significantly adversely modify or destroy designated critical habitat for the Gulf sturgeon. This letter also explains the basis for our determination. Our current proposal is consistent to the maximum extent practicable with USFWS recommendations received to date in previous informal consultations that focused on very specific operational concerns, such as a particular navigation window, minimum flows for mussels during drought periods, or reducing flow during the fish spawning season. Unlike previous informal consultations, our current proposal also describes operations more generally for the rest of the year.

Since the spring of 2000, the Mobile District has been informally consulting with the USFWS, pursuant to Section 7 of the ESA, regarding water management operations and releases from Jim Woodruff Dam to the Apalachicola River and possible modifications to project operations that would minimize or avoid impacts to Gulf sturgeon and the fat threeridge and purple bankclimber mussels. By letter dated April 28, 2000 (Enclosure 2), the USFWS advised the Mobile District that fluctuating water levels associated with a navigation window conducted in late April and early May of 2000 were detrimental to spring spawning activities in the upstream reservoir projects and the Apalachicola River, and could potentially impact Gulf sturgeon spawning activities or host fish for listed mussel species. USFWS offered to assist in providing guidance on water management operations in support of fish spawning within both reservoir projects and the Apalachicola River, and requested a meeting to discuss the impacts of current operations. By letter dated June 13, 2000 (Enclosure 3), Mobile District agreed to meet with the USFWS in order to discuss current water management operations and ways to balance operations in support of both fishery resources in the federal reservoirs and the Apalachicola

River; the potential for impacts to the Gulf sturgeon and protected mussel species; whether informal or formal consultation would be required; and to identify whether adjustments to project operations could be made to minimize or avoid impacts to these species. A summary of the results of this meeting were provided in a letter from USFWS dated October 12, 2000 (Enclosure 4). As a result of these discussions, Mobile District has been actively conferring with the USFWS and State fishery agencies on numerous occasions, and adjustments were made in existing operations at Jim Woodruff Dam to support fish spawning activities in both upstream reservoirs and the Apalachicola River, including specific operations in support of Gulf sturgeon spawning activities. Revisions to regulatory guidance and a draft Standard Operating Procedure (SOP) on fish management activities have been developed in consultation with USFWS, and annual coordination meetings are scheduled prior to fish spawning season to assist in planning for water management operations in support of fishery resources during low flow conditions.

In the summer of 2000, continued drought conditions in the ACF basin prompted concern that storage from upstream reservoirs could become depleted to the extent that releases to meet the 5,000 cfs minimum flow on the Apalachicola River could not be sustained indefinitely if dry conditions persisted in the summer and fall months. At that time, Mobile District began to informally consult with USFWS regarding the potential for impacts to protected mussels if releases were to be reduced below the 5,000 cfs minimum flow. By letter dated August 10, 2000 (Enclosure 5), USFWS advised that reduction of releases from Jim Woodruff Dam below 5,000 cfs may adversely affect the federally listed mussel species, and requested that formal consultation be initiated pursuant to Section 7 of the ESA in the event the drought contingency measure was pursued. By letter dated November 17, 2000 (Enclosure 6), Mobile District documented the informal consultation activities that had occurred since August 2000 to determine the potential for impacts on mussels in the event of a possible drought contingency measure to reduce releases to the Apalachicola River below 5,000 cfs. Although the drought contingency measure was no longer being pursued at that time, Mobile District agreed to continue to informally consult and collect data for a biological assessment in the event a similar drought contingency measure was proposed at a future date. The ongoing data collection and informal consultation efforts have resulted in completion of a study of the potential effects of low flow conditions on the protected mussel species. A draft report was submitted to USFWS in January 2006 (Enclosure 7) and is currently under review by Mobile District and USFWS.

Drought conditions within the ACF basin continued into 2002, and low flow conditions were experienced during the course of fish spawning activities that spring. USFWS notified the Mobile District by letter dated June 11, 2002 (Enclosure 8), that the low flow conditions had potentially impacted Gulf sturgeon spawning activities. USFWS suggested a meeting to discuss the potential impacts of reservoir operations on fish spawning activities and Section 7 consultation responsibilities relative to the Gulf sturgeon and protected mussel species. A copy of the Memorandum for Record documenting the meeting discussions on August 12, 2002, is enclosed (Enclosure 9). Following this meeting, USFWS and Mobile District developed a strategy and approach for additional data collection and analysis that would be incorporated into

a biological assessment of the impacts of low flow operations on the protected species in the Apalachicola River. This biological assessment would assist in determining whether impacts of project operations may adversely affect the federally protected species and whether formal consultation would be required, pursuant to Section 7 of the ESA.

In March 2003, USFWS listed critical habitat for the Gulf sturgeon. Unit 6 of critical habitat includes the Apalachicola River main stem, beginning from the Jim Woodruff Lock and Dam, Gadsden and Jackson Counties Florida, downstream to its discharge at East Bay or Apalachicola Bay, Franklin County. The lateral extent of Unit 6 is the ordinary high water line on each bank of the river. Primary constituent elements comprising critical habitat for this species include: (1) Abundant prey items within riverine habitats for larval and juvenile life stages, and within estuarine and marine habitats and substrates for juvenile, subadult, and adult life stages; (2) riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone or hard clay; (3) riverine aggregation areas, also referred to as resting, holding and staging areas, used by adult, subadult and/or juveniles, generally, but not always located in holes below normal riverbed depths, believed necessary for minimizing energy expenditures during fresh water residency and possibly for osmoregulatory functions; (4) a flow regime (i.e., the magnitude, frequency, duration, seasonality, and rate-of-change of fresh water discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging, and necessary for maintaining spawning sites in suitable condition for egg attachment egg sheltering, resting, and larvae staging; (5) water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; (6) sediment quality, including texture and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and (7) safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats.

As a result of our informal consultation discussions, Mobile District has initiated several studies or data gathering efforts to assist in assessment of the potential for impacts of water management operations on endangered or threatened species in the Apalachicola River, and to assist in identifying possible modifications to project operations that could minimize or avoid impacts to protected species and other fishery resources, or enhance the conservation of these species. Below is a summary of specific actions resulting from the informal consultations between Mobile District and USFWS relating to the Gulf sturgeon and protected mussel species in the Apalachicola River.

Gulf Sturgeon

- Discontinuation of the use of routine navigation windows and rescheduling any other special water management actions outside the fish spawning periods. Navigation

windows were devised in response to the 1986 and 1988 droughts in order to provide for planned shipments by the ACF waterway users during extended low flow periods when flows were not sufficient to provide a sustained available channel. During periods of low flow from 1990 until 2000, navigation was limited to brief periods of time, or navigation windows, when water stored in the upstream reservoirs was released to increase river flows for periods of 10 days to two weeks to provide a minimal usable navigation channel depth. Flows on the Apalachicola River were reduced in the periods prior to navigation windows as water was stored in the upstream reservoirs in preparation for the upcoming scheduled navigation window. Water would then be released during the navigation window period, resulting in a temporary increase in flows on the Apalachicola River, and then reduced again following completion of the navigation window in order to conserve water for other project purposes or in preparation for the next scheduled navigation window. Beginning in the mid 1990s, navigation windows were routinely scheduled in advance, approximately one per month during the low water months, in order to provide the waterway users a predictable reliable channel. Because channel conditions were also deteriorating, navigation windows were used with increasing frequency, as many as six a year, generally between May and December. Maintenance of navigation depths became increasingly dependent upon flows due to continued channel degradation and a lack of adequate dredged material disposal capacity. In the 1990s, the discharges from Jim Woodruff Dam required to provide a limited 8-foot channel during navigation windows ranged from 13,000 cfs to over 20,000 cfs, dependent upon the condition of the dredged channel and whether dredging had been completed. During the 1990s, the use of navigation windows also became increasingly controversial due to drawdowns in upstream reservoirs during releases for the navigation window, and due to reduced flows on the Apalachicola River during periods when releases were restricted prior to the navigation window (in order to store water for the navigation release) and following completion of the navigation window (in order to refill storage in upstream reservoirs). Due to increased controversy and the larger fluctuations of reservoir and river levels experienced during the sustained drought conditions, the routine use of navigation windows was discontinued after the navigation window in the spring of 2000.

There has been no routine navigation window scheduled since the spring of 2000. Instead, the use of limited controlled navigation releases has been coordinated with Federal and State agencies, various stakeholders, and the public on a case-by-case basis. Since 2000, these controlled releases were only scheduled for single critical shipments (e.g., shipment of steam generators to the Farley nuclear plant on the Chattahoochee River in December 2000; shipment of bridge component parts to or from Steward Machine on the Flint River in Bainbridge, Georgia in February 2003 and January 2004; and shipment of old reactor vessel heads from the Farley nuclear plant in January 2006). Mobile District only agreed to provide the controlled releases after reaching a determination that any resulting changes in reservoir levels or river stages would be minimal and would avoid any significant impacts on fisheries and other resources or uses

of the system. These releases were closely coordinated for the single shipment and the limited releases provided only the minimum flow necessary to navigate past identified shoal areas on the river. Gradual ramping down rates following conclusion of the special navigation releases were made at rates of 0.5 foot per day or less. The single shippers were required to use reduced draft equipment and to schedule their shipment when anticipated rainfall in the basin would make impacts of fluctuating reservoir and river levels less pronounced. Flow releases in support of navigation, including scheduling of special navigation releases on a case-by-case basis, will continue to be provided, consistent with the Congressionally-authorized project purpose of navigation. Such releases for shipments are typically scheduled for high flow months of the year, and only limited flow augmentation support is provided. However, the Mobile District will continue to coordinate closely with the State and Federal agencies and the public to conduct the mandate to support navigation in a manner that minimizes or avoids impacts to the environment and other public resources or uses of the system. No navigation windows or flow support for special shipments is currently planned for 2006.

- Update of Division Regulation DR1130-2-16 (Enclosure 10) and CESAM SOP 1130-2-9 (DRAFT) (Enclosure 11). These guidance documents were previously applied to provide support for reservoir fish spawning activities. However, in response to concerns raised by the Florida Fish and Wildlife Conservation Commission (formerly the Florida Game and Freshwater Fish Commission) in the springs of 2000 and 2002 the documents have been revised and updated in consultation with USFWS and state fish management agencies in order to provide for operations in support of both ACF species and reservoir species during the fish spawning season, and to provide for alternative special management plans for species of higher priority, such as the Gulf sturgeon. The draft SOP provides that during designated fish spawning periods, relatively stable or rising reservoir elevations would be maintained during a minimum 4 to 6-week period, and relatively stable or gradually declining river stages would be provided on the Apalachicola River. A goal was established for reductions in river stages at a rate of 0.5 foot per day or less, but not more than one foot per day (due to difficulties in manipulating releases at less than one foot per day). Weekly or periodic telephonic conferences would be scheduled with USFWS and the affected State agencies when the agency recommendations could not be met or if other special management considerations, such as operations in support of endangered or threatened species, were determined necessary. The revised draft SOP also provides for annual coordination meetings prior to the spawning season to discuss recommendations and priorities for special operations in support of the Gulf sturgeon, especially during declining basin inflow or low flow conditions. Reservoir operations and coordination protocols outlined in the draft SOP have been implemented since the spring of 2003 to provide support to fish spawning activities.

- Enhanced coordination and communications, and initiation of informal consultation discussions during fish spawn or low flow periods. Mobile District, USFWS and State fish management agencies have participated in annual pre-spawn coordination meetings to review the ACF system hydrological status and discuss recommendations for the management strategy for the upcoming spring. The pre-spawn coordination meetings were held in February 2003, 2004, 2005, and 2006 (Memoranda of Record of these meetings are enclosed at Enclosures 12 – 15). Supplemental weekly or periodic teleconferences occurred when the recommended operations could not be provided due to low flow conditions. In accordance with the coordination protocol included in the draft SOP 1130-2-9, several weekly or periodic teleconferences were conducted during the 2004 spring spawning months (Memoranda of several of these teleconferences are at Enclosures 16 - 23). As a result of these regular conferences, a low flow operations protocol was developed which provided releases from Jim Woodruff Dam to the Apalachicola River that equaled or exceed computed basin inflows in order to be protective of both Gulf sturgeon during spawning activities and mussels during sustained low flow conditions. Telephonic and email consultations were also initiated in May 2005 while Gulf sturgeon spawning was underway and basin inflows began to fall below the recommended 21,000 cfs, previously identified by USFWS as necessary to adequately inundate the rock ledge spawning habitat area at approximate Navigation Mile (NM) 105. A teleconference was conducted on 11 May 2005 (Memorandum for Record at Enclosure 24), at which time it was agreed that releases would be made to equal or exceed the computed 3-day average basin inflows with gradual ramping down of less than 0.5 foot per day. USFWS confirmed by email correspondence dated May 12, 2005 that this operation protocol during low flow operations would not result in a discretionary action adversely affecting the Gulf sturgeon (Enclosure 25). Flows were gradually reduced to approximately 14,000 to 16,000 cfs in concert with declining basin inflows. Additional follow-on email coordination on May 17, 2005 resulted in an agreement to provide sustained steady flows over the rock ledge for the remainder of the month of May, after spawning activity had concluded, in order to provide sufficient flows to allow sturgeon eggs and larvae to mature to the free-swimming stage (Enclosure 26). Releases were therefore made at a sustained rate approximating 16,000 cfs until June 1, 2005. Close coordination and regular consultations with USFWS provided for additional opportunities to provide protection for the species.
- Identification of important Gulf sturgeon spawning habitat at the rock ledge located immediately below Jim Woodruff Dam and associated flow requirements. During the 2004 coordination meeting the USFWS and Florida Fish and Wildlife Conservation Commission (FWCC) indicated that a minimum flow of approximately of 21,000 cfs would be required to fully inundate the rock ledge to a depth of approximately 4.6 feet (minimum depth of water over hard bottom at which sturgeon spawning has previously been documented in published data). At that time it was recommended that releases from Jim Woodruff Dam provide a minimum of 20,000 cfs during the month of March, 18,000

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18,000 cfs during the month of April, and 14,000 cfs during the month of May for fish spawning purposes, with gradual ramping down rates of 0.5-foot per day or less. These recommendations were based on information on the elevations of the rock ledge that was available in the spring of 2002, and recognized that river stages typically gradually decline from high flows to lower stages during the spring months of April and May. During the period between the fall of 2002 and early 2004, Mobile District and USFWS have jointly surveyed and mapped potential Gulf sturgeon spawning habitat areas in the upper 20 miles of the Apalachicola River (see Enclosure 27 and 28). These data are currently being evaluated by Mobile District and USFWS to determine the amount of suitable spawning habitat available at various flow levels. The data are based on bathymetric and bottom habitat surveys collected by the Mobile District and USFWS at the rock ledge site and several other potential spawning habitat areas, with the area of hard bottom habitat correlated to flows measured at the U.S. Geological Survey (USGS) Chattahoochee gage.

Evaluation of mapped data at the rock ledge habitat below Jim Woodruff Dam has been recently completed, including a determination of the areal extent inundated and the areal extent inundated to a depth of 4.59 feet (USFWS indicates that this is the shallowest depth at which eggs have been collected per previously published data). The result of this evaluation provides the estimated acres of hard bottom habitat available for various flow levels between 4,900 cfs and 40,000 cfs (Enclosure 29). These data indicate that the highest portions of the 17.6-acre rock ledge is completely inundated at flows between 16,000 cfs and 18,000 cfs. At flows of approximately 30,000 cfs, the entire rock ledge habitat is inundated to a depth of 4.59 feet, which would provide access to spawning by Gulf sturgeon to the entire site.

Monitoring of Gulf sturgeon spawning activities were also completed during the 2005 spawning season, including collection of sturgeon eggs on egg pads placed over the rock ledge habitat. The highest flow at which sturgeon eggs were collected in 2005 was approximately 37,400 cfs on May 2, 2005, and the lowest flow at which sturgeon eggs were collected was approximately 20,400 cfs on May 13, 2005 (Enclosure 30). At a flow of 20,400 cfs, approximately 74 percent of the rock ledge area is inundated at a depth of 4.59 feet or greater, and therefore available for spawning.

This updated flow data collected to characterize the extent of rock ledge habitat at NM 105 inundated at various flows, and data collected to characterize when spawning occurred (i.e., flows at which eggs were collected in 2005), will be used to guide low flow operations in support of sturgeon spawning activities.

- Development of a low flow coordination and operations protocol to minimize or avoid impacts to Gulf sturgeon spawning activities. A “run of river” low flow operations protocol was agreed to in 2004 in an attempt to mimic the hydrologic conditions of a

natural flow regime during low flow conditions and to minimize impacts to Gulf sturgeon from falling river stages. The low flow operations protocol would be implemented whenever it appears that flows on the Apalachicola River are falling or predicted to fall below the levels identified as necessary to fully support Gulf sturgeon spawning. Based on information available in 2004, the low flow operations protocol was to be initiated when flows were below approximately 21,000 cfs. The low flow operations protocol instituted in 2004 included ensuring that releases to the Apalachicola River approximated or exceeded inflows into the basin whenever basin inflows approached 21,000 cfs or lower. Basin inflows are determined by the computed 3-day average basin inflow. The timing and rate of any reductions in releases below the recommended minimal level of 21,000 were made commensurate with reductions in basin inflows and in consultation with the USFWS and the affected State fishery agency. Any reductions in releases were made as gradually as possible, approximating 0.5 foot per day or less, but no more than 1 foot per day, and remained at or above the computed basin inflows. Releases and proposed reductions in releases would take into account whether any additional rainfall is anticipated within the basin in the next few days and the predicted impacts on storage in upstream reservoirs due to sustained augmentation of flows above basin inflows. It was also recognized that some reservoir storage should be conserved in the spring months during sustained dry periods in order to provide sustained augmentation flows in support of the needs of protected mussel species during the later summer or fall months, which are typically the driest part of the year. This low flow operations protocol was implemented in the spring and summer of 2004 and during May of 2005. USFWS determined in 2004 and 2005 that operating in accordance with the low flow operations protocol, with releases equal to or exceeding the computed 3-day average basin inflow, resulted in mitigating the impacts of declining basin inflows and did not represent a discretionary action impacting Gulf sturgeon spawning activities.

- Collection of additional data on potential Gulf sturgeon spawning habitat. As noted above, additional information has been collected to assist in identifying and implementing adjustments to existing project operations that could minimize, avoid, or enhance impacts to Gulf sturgeon. Beginning in the fall of 2002, Mobile District and USFWS began joint efforts to map the upper 20 miles of river to identify the locations and depths of potentially suitable Gulf sturgeon spawning habitat, and to identify at what flows these potential spawning habitat areas would be inundated and accessible to spawning sturgeon. Bathymetric surveys were taken at several cross-section across several potential spawning habitat areas on the river. Bottom samples were then collected over the transects in order to identify the extent of hard bottom habitat at each potential sturgeon spawning site. Field mapping was completed in early 2004. The habitat data is being analyzed and correlated with modeled flow rating data to determine the areal extent of sturgeon spawning habitat available at various flow levels. As noted above, analysis of the habitat data at the rock ledge located at approximate NM 105 has been completed and will be used to assist in guiding Jim Woodruff Dam releases in the

spring of 2006. Bottom habitat and flow data collected to characterize the areal extent of other potential sturgeon spawning areas inundated at various flows will also be addressed during formal consultation to guide low flow operations in support of sturgeon spawning activities.

- Participation in monitoring of sturgeon migration and spawning activities. Mobile District purchased 15 radio tags that were placed by USFWS on mature Gulf sturgeon during the fall of 2004. Mobile District employees assisted in monitoring migratory movements and movements to sturgeon spawning habitat areas during spring 2005. Egg mats were also placed at potential sturgeon spawning habitat areas where sturgeon had been tracked to monitor for use and/or spawning success. Eggs were collected from pads placed over the rock ledge at NM 105 on four dates between April 27 and May 13, with pads at water depths ranging from 7.5 to 20.1 feet (summary of monitoring efforts in 2005 included at Enclosure 31). In the spring of 2005, monitoring data indicated that Gulf sturgeon spawning at the rock ledge habitat area had likely been completed by May 16, due to rising temperatures. However, stable flows were provided until June 1, at the request of USFWS in order to allow eggs and larvae to mature to the free-swimming stage. Monitoring of sturgeon spawning activities allows for transfer of information to assist in more effective operations in support spawning success. Data collected to characterize when and where spawning occurred (i.e., flows at which eggs were collected in 2005) will assist in guiding operations in support of gulf sturgeon spawning activities. Radio tracking and egg collection efforts by USFWS will continue in spring 2006.

Federally Protected Mussel Species

- Maintenance of minimum flows above 5,000 cfs during extended low flow or drought conditions. In 2000 it was agreed to continue to provide the 5,000 cfs minimum flow, as required under existing operations, and no waiver to reduce flows below the minimum 5,000 cfs has been requested or is planned. In the event drought contingency measures to reduce flows below 5,000 cfs are proposed in response to a future severe drought condition, Mobile District has agreed to initiate formal consultation at that time.
- Evaluating impacts of low flow levels on mussels. Mussel survey data that was collected during 1996, 1997, 1999, 2001, and 2002, and additional information on the depth distribution of protected mussel populations collected in 2003 has been evaluated in a low flow study conducted by the Corps Engineering Research Development Center. The evaluation included comparison of the depth distribution of mussels to flow/elevation data to estimate the percent of listed mussels that would be impacted by various low flow levels. This flow study was initiated to determine the impacts of any future drought contingency measure to reduce flows below 5,000 cfs, and mussel data was evaluated for flows of 6,000 cfs, 5,000 cfs, 4,000 cfs and 3,000 cfs. However, the data can also assist in determining potential impacts of low flow operations for flow conditions approaching

5,000 cfs. This information is summarized in a draft report, which was provided to USFWS for review and comment in January 2006 (See Enclosure 7). Supplemental data has also been recently developed, to demonstrate the distribution and depth of mussels at flows from 10,000 cfs to 6,000 cfs. This data shows that a few *A. neislerii* begin to become exposed when river stages fall below 8,000 cfs, but that most of the populations of *A. neislerii* occur at substrate depths that could become exposed by flows less than 7,000 cfs. (Enclosure 32). This data will assist in guiding operations at Jim Woodruff during low flow operations in support of mussel species.

- Initiation of informal consultation during low flow conditions. Periodic consultations with USFWS and other resource agencies has been initiated during low flow conditions to discuss ways to adjust releases in a manner that minimizes or avoids impacts to listed mussels as well as mitigates for decreases in basin inflows. This type of consultation occurred in the late spring and summer of 2004 during low flow conditions.
- Adoption of a low flow operations protocol. Through the informal consultation discussions with USFWS during the extended dry conditions experienced in 2004, a low flow operations protocol was implemented in order to provide releases from Jim Woodruff Dam in support of protected mussels on the Apalachicola River. Information available at that time was developed during the low flow mussel study and indicated that significant percentages of the fat threeridge mussel population occur at locations inundated by 6,000 cfs or below. In the late spring of 2004, as basin inflows declined to approximately 8,000 cfs and were anticipated to further decline and approach 6,000 cfs, informal consultation discussions with USFWS were initiated to determine operations at Jim Woodruff Dam that would minimize impacts to the mussels during the sustained low flow period. Releases during the extended dry conditions in the late spring and summer of 2004 were made in consultation with the USFWS, with efforts to maintain releases above 6,500 cfs for as long as possible. Gradual reductions in releases from Jim Woodruff Dam were made in several telephonic consultations with USFWS as basin inflows were declining. During these teleconferences, a determination was made on the timing and rate of any further gradual reductions in releases, while maintaining releases that approximated the computed 3-day average basin inflow or greater. Gradual reductions in flow resulted in decreases in stage of less than 0.5 foot per day, and usually in the range of 0.25 foot per day. As noted above, information in the low flow mussel study has been recently supplemented to determine the distribution and depth of mussels impacted by flows between 6,000 cfs and 10,000 cfs. This information demonstrates that significant percentages of *A. neislerii* occur at substrate depths inundated at flows of 7,000 cfs or less, with relatively few *A. neislerii* mussels occurring at substrate depths inundated by flows between 7,000 cfs and 8,000 cfs. No *A. neislerii* were found at substrate depths inundated by flows above 8,000 cfs. This information will be used to guide low flow operations at Jim Woodruff dam in support of listed mussels.

As demonstrated above, informal consultation discussions with USFWS and data collection and evaluation conducted since 2000 has resulted in adjustments to existing project operations at Jim Woodruff Dam that have minimized or avoided impacts to protected species due to low flow operations. We have enclosed charts depicting the releases made from Jim Woodruff Dam to the Apalachicola River during extended dry conditions experienced during the period 2000 through 2005, and comparisons to the computed basin inflows (Enclosure 33). Additional charts are also provided that demonstrate the impacts on upstream reservoirs during the same periods (Enclosure 34) In most cases during sustained low flow or drought conditions, releases to the Apalachicola River have approximated the basin inflow or greater. Ramping down rates when flows are below 20,000 cfs have been made as gradually as possible, usually at rates of 0.5 foot per day or less. Storage from upstream reservoirs has been utilized to provide augmentation flows where needed, in order to achieve the desired gradual ramping down rates, and to maintain minimum flows above 5,000 cfs. Therefore, impacts to protected species during low flow conditions, when operations are carried out in accordance with the low flow operation protocols described above, have been determined to be the result of the naturally declining basin inflows and extended dry conditions. Efforts by the Mobile District to provide at least the basin inflow or greater did not represent a discretionary action to reduce releases to the Apalachicola River. Any releases to the Apalachicola River above the basin inflow represented mitigative measures to reduce the impacts of the declining basin inflow.

Basin inflows are currently computed based on the existing local inflows to each reservoir project. These computed local inflows are necessarily affected by existing withdrawals from tributaries, streams or un-impounded river sections, as well as other factors that affect natural run-off or inflows into the reservoir basins. Although the Corps has the authority to provide storage for water supply withdrawals from the Federal reservoirs or releases from Federal reservoirs for water supply withdrawals, which are permitted by the State of Georgia, most previous Federal water supply contracts expired by 1990 and have not been renewed due to ongoing litigation. The withdrawals and releases continued under the "live and let live" agreements while water allocation negotiations were underway, until the ACF Compact expired in 2003. Water supply withdrawals still continue today although no new water supply contracts or reallocations of storage were completed by the Mobile District while litigation continued. The impacts of the increased withdrawals from the Federal reservoirs since 1990, and any necessary revisions to the ACF basin water control plans, will be addressed by Mobile District during future studies and associated NEPA documentation necessary for implementation of new water supply contracts. The Mobile District does not control the substantial municipal or industrial water supply withdrawals which are made directly from the Chattahoochee and Flint Rivers or their tributaries, which also affect the availability of water in the system (direct withdrawals from the Chattahoochee River and Flint River and their tributaries within the State of Georgia are regulated and permitted by the State of Georgia). However, the computed average basin inflows reflect the quantity of water available within the ACF system at any given time.

Proposed Reservoir Operations at Jim Woodruff Dam for 2006

Mobile District began recent informal consultation discussions with USFWS in early 2006 with the intent of identifying operating conditions under which a determination that operations at Jim Woodruff Dam proposed for implementation in 2006 were not likely to adversely affect the threatened Gulf sturgeon, critical habitat for the Gulf sturgeon, and the two listed mussel species. The proposed operations plan was consistent with low flow operation protocols agreed to and implemented in 2004 and 2005, where releases would meet or exceed basin inflows whenever basin inflows fell to 21,000 cfs or lower; ramping rates of 0.5 or less would be imposed whenever flows were less than 20,000 cfs; and periodic consultations would be conducted with USFWS and the affected State agencies during the low flow operations to collaboratively agree on the timing and rate of any reductions in releases below 20,000 cfs. A similar low flow operations and coordination protocol would be implemented whenever flows approached 8,000 cfs or lower in order to protect mussels from exposure, with releases then matched to basin inflows or greater. USFWS had previously agreed that operating as described above would not represent a discretionary action by the Mobile District that adversely impacts the listed species; that any impacts on the listed species or critical habitat during these described operations would be considered the result of declining basin inflows; and that any augmentation above basin inflows would be considered a mitigative measure to reduce the impacts of declining basin inflows on the listed species or critical habitat. However, based on recently developed data and analysis on sturgeon critical habitat for spawning and the distribution and depth of listed mussels, developed through previous informal consultation efforts, USFWS has now proposed several additional operating conditions that would be necessary to support the determination of not likely to adversely affect the species. These conditions include limits on ability to refill the reservoirs during the spring refill months (i.e., 90 percent of basin inflows to be released during the months of March through May when basin inflows are between 20,400 cfs and 37,400 cfs, or when flows are less than 37,400 cfs or greater than 9,000 cfs during the months of June through February) which could prevent sufficient refill of reservoir storage during extended dry periods or drought conditions. If reservoirs cannot refill or if storage cannot be conserved during extended dry or drought periods, then there may not be sufficient storage available in the later months to augment flows for protection of mussels from exposure or to meet other resource needs, or to maintain flows above 5,000 cfs for extended periods. More stringent ramping rates were also recommended (i.e., 0.1 foot per day or less) than are operationally feasible given equipment constraints or operations safety concerns at the dam. Although Mobile District believes operations at Jim Woodruff Dam are currently and will continue to be conducted in a manner that minimizes impacts to listed species and critical habitat to the maximum extent practicable, there is no guarantee that listed species will not be adversely affected by discretionary actions taken by the Mobile District during low flow operations due to the potential trade-offs between managing for Gulf sturgeon and critical habitat needs during the spring months, and managing for augmentation flows in the later summer and fall months to prevent exposure of listed mussel species. Therefore, at the conclusion of informal consultation

discussions undertaken with USFWS in early 2006, it has been mutually agreed that formal consultation on project operations at Jim Woodruff Dam and the resultant releases to the Apalachicola River will be initiated pursuant to Section 7 of the ESA. A summary of the proposed interim operations beginning in the spring of 2006 is included in the interim operations table (Enclosure 1). As previously noted, it is proposed to implement these interim operations until additional formal consultation is completed in association with the update and revision of water control plans for the ACF system. These interim operations concentrate on operations and releases from Jim Woodruff Dam to the Apalachicola River, taking into consideration composite storage available in upstream reservoir but not addressing detailed operations at the upstream reservoirs. Such detailed operations would be addressed during the future update of the existing water control plans for the ACF basin. Because the species and critical habitat areas of concern are all located only on the Apalachicola River downstream of Jim Woodruff Dam, the primary operational consideration at this time is the timing and quantity of flows released from the dam. When the ACF basin water control plans are updated and revised at a future date, an additional formal consultation will be initiated, and any necessary modifications to the operations at Jim Woodruff Dam will be considered at that time.

The 2006 Annual Fish Management Coordination Meeting was held on February 7, 2006. As a result of the discussions during this meeting, it was recommended by the interagency group that the low flow operations protocol guidelines established and implemented in 2004 should continue to be implemented during the upcoming fish spawning season. In 2006 it is proposed to conduct operations at Jim Woodruff Dam consistent with the informal consultation agreements and operations procedures implemented during Gulf sturgeon fish spawning and low flow conditions in 2004 and 2005. However, operations beginning in 2006 will be guided using updated information developed since the spring of 2005 on characteristics of the rock ledge spawning habitat at NM 105, flows at which successful spawning was completed at NM 105, and additional information on the depth and distribution of listed mussels. Gulf Sturgeon spawning activities generally occur during the months of March through May. Data collected from sturgeon spawning monitoring in 2005 indicate that flows of approximately 20,400 cfs or greater provided for successful spawning by Gulf sturgeon at the rock ledge located at approximate NM 105 on the Apalachicola River. The highest flow at which sturgeon eggs were collected at NM 105 in 2005 was approximately 37,400 cfs. Flows of 20,400 cfs provide for inundation of approximately 74 percent of the rock ledge at a depth of at least 4.59 feet, which is the shallowest documented depth for sturgeon spawning at other locations. The entire rock ledge is inundated to a depth of 4.59 feet by flows approximating 30,000 cfs. It is understood by both Mobile District and USFWS that releases of this magnitude cannot normally be maintained throughout the entire Gulf sturgeon spawning period. A review of historical hydrological conditions indicate that for flows of 21,000 cfs, 22 percent of the days in March, 34 percent of the days in April, and 64 percent of the days in May were less than 21,000 cfs, which documents that river stages typically decline gradually from seasonal high flows during the spring months (Enclosure 35). Recognizing the typical gradual decline in river stages, the USFWS and FWCC had previously recommended that releases from Jim Woodruff Dam be maintained at a minimum of 20,000 cfs during the month of March, and then gradually declining to a minimum of

18,000 cfs for the month of April and a minimum of 14,000 for the month of May in order to support fish spawning (Memorandum for Record of 17 February 2004 annual coordination meeting at Enclosure 13). In 2006 the Mobile District agrees to operate in accordance with the guidelines incorporated in the enclosed interim operations table (See Enclosure 1). This table incorporates operation parameters for releases from the Jim Woodruff Dam to the Apalachicola River as well as portions of basin inflows that would be reserved in order to refill upstream reservoirs for future augmentation flows or other critical project purposes. Ramping rates for various flow levels are also identified. Operations parameters in this table provide guidance for operations throughout the entire year, not just during the Gulf sturgeon spawning periods or low flow conditions. Outlining operations parameters for the entire year provides for protection of other life stages of the listed species or host fishes important for the reproductive life cycle of the listed mussels.

In accordance with the Interim Operations table parameters for the months of March through May, when basin inflows are greater than 37,400 cfs Mobile District agrees to release at least 37,400 cfs, but there is otherwise no limit on the amounts that can be stored for the increment of inflows above that amount. If basin inflows are less than 37,400 cfs but greater than 20,400 cfs during the March through May Gulf sturgeon spawning period, Mobile District agrees to release between 70 and 90 percent of basin inflows to the river, and the remainder may be stored to facilitate refill of reservoirs or to closely follow the conservation pool rule curve. The goal will be to release at least 90 percent of basin inflows during this period. However, in the event this release is not considered reasonable or prudent during extended dry periods or droughts (i.e., would prevent sufficient refill in the spring months or conservation of storage in the summer to fall months necessary for future augmentation flows), the Mobile District agrees to initiate additional informal consultation discussions with USFWS. During the informal consultation discussions, USFWS and the Mobile District will collaboratively agree on the percentage to be released, considering the current status of the reservoirs, predicted climatic conditions and anticipated rainfall, and the amount of storage that may be necessary to augment flows to prevent or minimize exposure of mussels and to maintain flows above 5000 cfs in the summer to fall months. At least 70 percent of basin inflows would be released. If basin inflows fall to 20,400 cfs or below, then Mobile District agrees to release at least the amount of basin inflow or greater to the river, and to conduct periodic informal consultation discussions (weekly or as determined necessary) with USFWS. During the informal consultation discussions, USFWS and the Mobile District will collaboratively agree on the timing and rate of any reductions in releases to the Apalachicola River below 20,400 cfs. Decisions on the timing and rate of any reductions in releases will be based on information on current basin inflows and predicted climatic conditions, the predicted impacts on reservoir storage of sustaining releases greater than the computed basin inflows, and any monitoring data on the progress or status of sturgeon spawning activities. Mobile District will implement reservoir operations at Jim Woodruff Dam and upstream reservoirs to provide the recommended releases to the Apalachicola River for as long as possible, based upon the computed 3-day average inflow into the basin, and predicted impacts on reservoir storage. During these operations, releases will be made from Jim Woodruff Dam to the Apalachicola River that approximate the computed 3-day average basin inflow or greater.

In accordance with the Interim Operations table parameters for the months of June through February, when basin inflows are greater than or equal to 37,400 cfs, Mobile District agrees to release not less than 37,400 cfs but may store the increment above 37,400 cfs. When basin inflows are less than 37,400 cfs but greater than 8,000 cfs, Mobile District agrees to release between 70 and 90 percent of basin inflows to the river, and the remainder may be stored to facilitate refill of reservoirs, closely follow the conservation pool rule curve, or to conserve storage for future augmentation releases. The goal will be to release at least 90 percent of basin inflows during this period. However, in the event this release is not considered reasonable or prudent during extended dry periods or droughts (i.e., would prevent sufficient refill or conservation of storage in the summer to fall months necessary for future augmentation flows), the Mobile District agrees to initiate additional informal consultation discussions with USFWS. During the informal consultation discussions, USFWS and the Mobile District will collaboratively agree on the percentage to be released, considering the current status of the reservoirs, predicted climatic conditions and anticipated rainfall, and the amount of storage that may be necessary to augment flows to prevent or minimize exposure of mussels and to maintain flows above 5,000 cfs in the summer to fall months. At least 70 percent of basin inflows would be released during this range of basin inflows. If basin inflows fall to 8,000 cfs or below, then Mobile District agrees to release at least the amount of basin inflow or greater to the river, and to conduct periodic informal consultation discussions (weekly or as determined necessary) with USFWS. During the informal consultation discussions, USFWS and the Mobile District will collaboratively agree on the timing and rate of any reductions in releases to the Apalachicola River below 8,000 cfs. Decisions on the timing and rate of any reductions in releases will be based on information on current basin inflows and predicted climatic conditions, the predicted impacts on reservoir storage of sustaining releases greater than the computed basin inflows, and the need to provide augmentation releases to maintain flows above 5,000 for a sustained period. Mobile District will implement reservoir operations at Jim Woodruff Dam and upstream reservoirs to provide the recommended releases to the Apalachicola River for as long as possible, based upon the computed 3-day average inflow into the basin, and predicted impacts on reservoir storage. During these operations, releases will be made from Jim Woodruff Dam to the Apalachicola River that approximate the computed 3-day average basin inflow or greater.

When operating to balance releases from Jim Woodruff Dam with the computed average basin inflow as described for the Gulf sturgeon spawning period or during implementation of the low flow operation protocol, upstream reservoirs will generally be kept at a stable level, while river stages will be stable and/or gradually falling depending on the available basin inflow. However, it should be noted that it normally takes a few days to bring the reservoir levels back to the rule curve after a substantial rain event, and the Mobile District practice is to gradually lower back to the top of conservation pool rule curve following the rain events, while making beneficial use of the water captured in the reservoir. Beneficial use can mean use for other project purposes (e.g., hydropower) as well as maintaining more stable river stages by controlling releases. Controlled releases will generally be "smoothed" to avoid any abrupt fluctuations in river stages when there is less than 20,400 cfs flow. The gradual step down of reductions in river stage will be limited to approximately

0.5 foot per day or less when feasible. Various system constraints and limitations may affect the Mobile District's ability to release increased and/or steady flows during spring spawning months. These may also impact the ability to meet the goal of ramping down releases at a rate of 0.5 foot per day or less. Structural head limits dictate release rates from Jim Woodruff Dam whenever the tailwater elevation is at or below approximate +44.5 feet (approximately 15,000 cfs flow produces a tailwater elevation of +44.5 feet), and may require immediate increases in discharge to reduce the pool elevation, increase the tailwater elevation, and reduce the head differential. Other considerations when attempting to meet the recommended step down rate include the amount of storage available within the system, routing times for water released from upstream storage reservoirs, and the inability to precisely control the amount of discharge through the turbines and spill gates. For instance, in order to achieve an approximate 0.5 foot reduction in stage at the Blountstown gage (equivalent to approximately 1,000 cfs reduction of flow), a crane must suspend the spillgate open at approximately one-half step. Releases from this operation can only be roughly estimated, and present certain safety or equipment concerns. New turbines have been installed at Jim Woodruff powerhouse that may improve the flexibility for controlling discharges at certain flows, but ratings for these turbines are still being established. Regardless of these limitations, step down releases of more than 1-foot per day will not occur except in emergency situations or during flood pulses.

The goal will be to provide a reduction in releases of 0.5 foot per day (but not less than 1.0 foot per day) when releases exceed the capacity of the powerhouse (approximately 18,000 cfs or greater). When releases are within the capacity of the powerhouse but greater than 9,000 cfs, then any reductions in releases will be made at the rate of 0.25 to 0.5 foot per day, with the goal to meet the 0.25 foot rate as flows approach 9,000 cfs. This rate of gradual reductions has been employed in previous years, with releases usually maintained for around 1 week between the next gradual reduction in releases. A flow of 9,000 cfs provides for approximately 0.5 foot of water above the highest stage at which mussel occur (8,000 cfs). Therefore, no mussels should be exposed by these reductions in flow, and other fish should be able to avoid stranding at these gradual step down rates. When releases are within the capacity of the powerhouse but less than or equal to 9,000 cfs, then attempts will be made to reduce releases at the rate of 0.25 foot per day or less. Rates of 0.25 foot per day are potentially achievable for powerhouse operations (reductions in flow of 500 cfs provide an approximate 0.25 foot reduction in stage). It is uncertain whether rates of less than 0.25 foot per day can be achieved. Previous operations have resulted in reductions in releases at the rate of 0.25 to 0.5 foot per day during sustained low flow periods. These rates appear to be within the tolerance of the two mussel species' ability to move to lower stages, as demonstrated by the presence of mussels between 8,000 cfs and 5,000 cfs levels following several years of drought conditions (1998 – 2002), during which flows approximating 5000 cfs were experienced for extended periods of time. Fall rates of 0.25 foot per day or less would provide several days for mussels to move to lower bed elevations, especially when there are several days to a week between each incremental reduction in flow.

Mobile District will continue to adhere to the 5,000 cfs minimum release from Jim Woodruff Dam, consistent with existing project operations under the 1989 draft ACF water control plan. However, comparison of the low flow mussel study data to flow/elevation data indicate that a significant percentage of listed mussel species occur at substrate depths that may be exposed by flows between 5,000 cfs and 7,000 cfs. Only a few mussels would be affected by flows between 7,000 cfs and 8,000 cfs, and no listed mussels were found at substrate depths above 8,000 cfs flow. Mobile District proposes to implement the low flow operations protocol for protected mussels whenever it appears that flows on the Apalachicola are falling or predicted to fall below levels identified as necessary to fully support protected mussel species needs. (Only *A. neslerii* were addressed in the study, but the study also noted that *E. sloatianus* occur much less frequently and typically in deeper water than *A. neslerii*.) Mussels are capable of moving deeper in the substrate in lower flow conditions, provided ramping down rates are gradual enough to accommodate this movement. Therefore, a conservative assumption is that impacts to protected mussels may potentially occur whenever flows are less than 8000 cfs. Based on this assumption, and in order to conservatively protect listed mussels from declining flows during sustained low flow conditions, informal consultation discussions will be initiated with USFWS whenever the computed 3-day basin inflows indicate that releases will fall below 8000 cfs. Consultations will be conducted via telephone conferences and/or email coordination with the USFWS and the appropriate State agency representatives to collaboratively develop the appropriate water management decisions to avoid or mitigate impacts to protected mussel species. The low flow operations protocol will provide for releases to the Apalachicola River that approximate or exceed the computed 3-day average basin inflow whenever inflows are at or below 8,000 cfs. The timing and rate of any reductions in releases below 8,000 cfs will be collaboratively determined during the consultation discussions, based on current basin inflow and predicted climatic conditions. The intent will be to reduce releases as gradually as possible (a more conservative ramping rate of 0.25 foot or less per day will be implemented), and to sustain flows as long as possible above 8,000 cfs, with any gradual step down in flow taking into consideration predicted climatic conditions, and potential impact on upstream reservoir storage and the ability to continue to sustain augmentation flows for a sustained period. It is recognized that conservation of some reservoir storage is critical to the ability of the Mobile District to provide augmentation flows during sustained low flow periods or drought conditions; and that augmentation flows may be critical to protection of mussels from exposure to the air during declining basin inflows. Flows will be maintained above 5,000 cfs even if basin inflows fall below 5,000 cfs.

As noted above, Mobile District plans to operate Jim Woodruff Dam such that minimum flows will always exceed 5,000 cfs. There are no plans to reduce flows below 5,000 cfs as part of the above-described low flow operations protocols. When basin inflows are declining below 5000 cfs, Mobile District will augment flows by making releases to the Apalachicola River that equal or exceed 5,000 cfs. In the event that the 5,000 cfs minimum release can not be met due to severe and extended drought conditions, and concern that upstream reservoir storage would be significantly depleted by the continued augmentation of flow, the Mobile District will initiate

formal consultation with USFWS, pursuant to Section 7 of the ESA, to determine the effect of implementing any drought contingency measure resulting in a reduction in minimum release flows below 5,000 cfs on the protected mussel species. However, it is highly unlikely dry conditions in 2006 would result in the need for such a drought contingency measure.

Operations at Jim Woodruff Dam conducted in accordance with the above-described Interim Operations will assure that in most cases low flow conditions experienced on the Apalachicola River will not be the result of a discretionary action by the Mobile District, but would be the consequence of extended low and/or declining basin inflows during extended dry or drought periods. Efforts by the Mobile District to augment flows above the basin inflow will provide mitigation for declining basin inflow and will benefit the federally protected species. However, during extended dry or drought periods, recommended operations at Jim Woodruff Dam could result in trade-offs between minimal impacts to Gulf sturgeon spawning activities or critical habitat area, or to host species life cycle needs during the spring or summer months, in order to conserve sufficient storage in upstream reservoirs to provide for future augmentation flows in the summer or fall months to protect listed mussels from exposure. Mobile District believes that adjustments to project operations and more conservative operations measures that have been employed, as developed during previous informal consultation with USFWS, provide sufficient assurance that any such trade-off impacts will be minimal and should not jeopardize the continued existence of the species.

Based on the above Interim Operations protocols proposed for implementation in 2006, and the associated more conservative avoidance and minimization measures established to protect listed species, the Mobile District has determined that operations at Jim Woodruff Dam and releases to the Apalachicola River during low flow conditions may affect but are non-jeopardizing to the federally threatened Gulf sturgeon, federally endangered fat threeridge mussel, or federally threatened purple bankclimber mussel and will not result in the destruction or adverse modification of Gulf sturgeon critical habitat. This determination is consistent with Section 7(d) of the ESA, which allows ongoing actions to continue after initiation of consultation if they do not irreversibly or irretrievably commit resources which would foreclose the development of reasonable and prudent alternatives.

We request you review the enclosed information with respect to ESA compliance and provide concurrence with our determination. Should you have any questions, comments, or recommendations, please contact Ms. Joanne Brandt at (251) 690-3260 or Mr. Brian Zettle at (251) 690-2115.

Sincerely,

A handwritten signature in black ink, appearing to read 'Curtis M. Flakes', with a long horizontal line extending to the right.

Curtis M. Flakes
Chief, Planning and Environmental
Division

Enclosures

LIST OF ENCLOSURES

- Enclosure 1: Interim Operations Table
- Enclosure 2: FWS-COE letter dated April 28, 2000
- Enclosure 3: COE-FWS letter dated June 13, 2000
- Enclosure 4: FWS-COE letter dated October 12, 2000
- Enclosure 5: FWS-COE letter dated August 10, 2000
- Enclosure 6: COE-FWS letter dated November 17, 2000
- Enclosure 7: COE-FWS letter dated January 18, 2006 – Transmittal of Draft Low Water Mussel Study Report (**Depth Distribution of the Fat Threeridge Mussel, *Amblyma neislerii*, during Low Flow Stages on the Apalachicola River, Florida – 6 January 2005**)
- Enclosure 8: FWS-COE letter dated June 11, 2002
- Enclosure 9: Memorandum for Record, meeting with FWS on August 12, 2002
- Enclosure 10: Division Regulation DR 1130-2-16
- Enclosure 11: CESAM SOP 1130-2-9
- Enclosure 12: Memorandum for Record, Annual Fish Management Coordination Meeting, 20 February 2003
- Enclosure 13: Memorandum for Record, Annual Fish Management Coordination Meeting, 12 February 2004
- Enclosure 14: Memorandum for Record, Annual Fish Management Coordination Meeting, 15 February 2005
- Enclosure 15: Memorandum for Record, Annual Fish Management Coordination Meeting, 7 February 2006
- Enclosure 16: Memorandum for Record, Informal Consultation Telecon, 12 March 2004
- Enclosure 17: Memorandum for Record, Informal Consultation Telecon, 1 April 2004
- Enclosure 18: Memorandum for Record, Informal Consultation Telecon, 20 April 2004

- Enclosure 19: Memorandum for Record, Informal Consultation Telecon, 29 April 2004
- Enclosure 20: Memorandum for Record, Informal Consultation Telecon, 4 May 2004
- Enclosure 21: Memorandum for Record, Informal Consultation Telecon, 11 May 2004
- Enclosure 22: Memorandum for Record, Informal Consultation Telecon, 17 May 2004
- Enclosure 23: Memorandum for Record, Informal Consultation Telecon, 24 May 2004
- Enclosure 24: Memorandum for Record, Informal Consultation Telecon, 11 May 2005
- Enclosure 25: FWS-COE Email, Concurrence with Informal Consultation, 12 May 2005
- Enclosure 26: COE-FWS Email, Informal Consultation, 17 May 2005
- Enclosure 27: Memorandum for Record, Gulf Sturgeon Spawning Habitat Survey and Mapping, 23-23 October 2002
- Enclosure 28: Memorandum for Record, Gulf Sturgeon Spawning Habitat Survey and Mapping, 6-7 November 2003, 20-21 November 2003 and 21-22 January 2004
- Enclosure 29: Areal Extent of Gulf Sturgeon Spawning Habitat Inundated at NM 105
- Enclosure 30: FWS Sturgeon Eggs, Flow and Temperature Data, 2005
- Enclosure 31: FWS Summary of Sturgeon Spawning Monitoring Data, 10 June 2005
- Enclosure 32: Updated Mussel Depth Distribution Tables for 3,000 cfs – 12,000 cfs
- Enclosure 33: ACF Basin Inflows vs. Jim Woodruff Dam Releases, 2000 – 2005
- Enclosure 34: ACF Basin Reservoir Levels, 2000 – 2005
- Enclosure 35: Monthly Flows at Chattahoochee Gage, 1929 - 2004