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

REPLY TO
ATTENTION OF

January 31, 2007

Inland Environment Team
Planning and Environmental Division

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

Dear Ms. Carmody:

On September 5, 2006, the U.S. Army Corps of Engineers, Mobile District received a Biological Opinion (BO) from the U.S. Fish and Wildlife Service (USFWS) regarding the impacts of our Interim Operations Plan and associated releases from the Jim Woodruff Dam to the Apalachicola River. The BO includes five Reasonable and Prudent Measures (RPMs) and terms and conditions for implementing the RPMs. In accordance with RPM1, we are hereby submitting the first Annual Report for fiscal year 2006, which summarizes the status of compliance with the terms and conditions of the BO. Although the BO only requires a status of efforts to comply with the terms and conditions for the previous fiscal year (through September 30, 2006), we are also including a summary of efforts undertaken by the Mobile District since October 1, 2006.

Please note that we have, by separate letter, requested an extension of the due date for implementation of the drought provision required under RPM3 until February 28, 2007. A concept for the drought provision was presented to the USFWS in December 2006 (Concept 3). A workshop on the proposed Concept 3 drought provision was held with the USFWS, the States of Alabama, Florida, and Georgia as well as other interested stakeholders on December 13, 2006. However, once the evaluations of the effects of Concept 3 were completed using analyses similar to that completed for the BO, a potential tradeoff of benefits to mussels (higher sustained flows during low flow conditions) for adverse effects to host fish for mussels (due to reduced floodplain inundation) was identified. In consultation with your staff, it was agreed that additional adjustments to the proposed drought provision should be investigated to see if this tradeoff of effects can be avoided or minimized. We believe an alternative conceptual plan for a drought provision can be identified, and our evaluation of the effects of the adjusted conceptual plan completed, such that an RPM3 drought provision can be implemented before the initiation of the spring spawning operations on March 1, 2007.

The BO also recognizes that certain studies and other outreach programs in the RPMs and conservation measures are subject to the availability of funds by Congress. The Mobile District agreed to exercise its best efforts to secure funding for those activities. In the event the necessary funding is not obtained to accomplish the RPM activities by the dates established, the

Mobile District would reinitiate consultation with the USFWS. The Mobile District is currently operating under Continuing Resolution Authority (CRA) funding constraints, which are anticipated to continue well into the year. The CRA funding constraints have delayed the initiation of the Apalachicola River sedimentation/morphology panel evaluations required by RPM4, and the development of a monitoring plan to determine the abundance and distribution of listed mussels required by RPM5. In accordance with the BO, both of these activities are to be completed by March 30, 2007. Due to current funding constraints, we will not be able to meet that due date for these activities. However, the Mobile District has been aggressively pursuing other possible funding sources and expects to have funding in place later this spring to initiate efforts required by RPM4 and RPM5. Therefore, it is hereby requested that the due date for these RPM4 and RPM5 requirements be extended until August 30, 2007. This schedule would provide for consideration of the panel report and the proposed monitoring plan at the next semi-annual meeting with USFWS scheduled for August 2007.

If you have any questions regarding the enclosed annual report or wish to discuss our request for an extension of the due dates for RPM3, RPM4, or RPM 5, please contact Ms. Joanne Brandt, Compliance Manager, by telephone at 251-690-3260, or by email at: joanne.u.brandt@sam.usace.army.mil.

Sincerely,

for Curtis M. Flakes, Chief
Planning and Environmental
Division

Enclosure

Jim Woodruff Dam Interim Operations Plan Biological Opinion
Annual Report
31 January 2007

On 7 March 2006, the U.S. Army Corps of Engineers, Mobile District, submitted a request to initiate formal consultation pursuant to Section 7 of the Endangered Species Act (ESA) regarding the impact of releases from the Jim Woodruff dam to the Apalachicola River on Federally listed endangered or threatened species and critical habitat for those species. Operations regarding releases to the Apalachicola River were described in an Interim Operations Plan (IOP) for Jim Woodruff Dam, since consultation on the overall project operations for the Apalachicola, Chattahoochee,Flint Rivers (ACF) system would be deferred until future efforts to update the water control plans and basin manual for the system. Species of concern include the threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*) and critical habitat for the Gulf sturgeon; the endangered fat threeridge mussel (*Amblema neislerii*); the threatened purple bankclimber mussel (*Elliptoideus sloatianus*); and the Chipola slabshell mussel (*Eliptio chipolaensis*). A final Biological Opinion (BO) for the Jim Woodruff Dam IOP was issued by the U.S. Fish and Wildlife Service, Panama City Field Office on 5 September 2006. By issuance of the final BO, USFWS authorized a specific amount of incidental take of mussels associated with water management operations under the IOP, in the form of a surrogate measure of potential take. The surrogate measure in the Incidental Taking Statement is represented by the number of days releases from Jim Woodruff Dam, as measured on the Apalachicola River at the U.S. Geological Survey (USGS) Chattahoochee, FL river gage, are less than the daily basin inflow, when the daily basin inflow is between 8,000 cfs and 10,000 cfs. This determination of potential for take is based on the findings in the BO that the IOP operations may result in an increase in the number of days, when flows are between 8,000 cfs and 10,000 cfs, that releases under the IOP would be less than daily basin inflow due to managing releases using a 7-day average of the basin inflow. An authorized 39 days per calendar year of "potential take days" was included in the BO. The BO also included five reasonable and prudent measures (RPMs) for limiting the amount of incidental take associated with water management operations and at Jim Woodruff Dam. For each of the five RPMs, the BO also included specific terms and conditions which must be met in order to assure compliance with the RPMs.

This annual report summarizes efforts that have been taken and the status of compliance with the terms and conditions since issuance of the BO on 5 September 2006. Although the BO only requires a summary of actions through the previous fiscal year, a number of activities have been accomplished since 1 October 2006 (beginning of FY 2007) and will also be summarized in this report.

STATUS OF COMPLIANCE WITH TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, the Mobile District must comply with the following terms and conditions, which implement the reasonable and prudent measures described in the BO. These terms and conditions are mandatory. However, the studies

and other outreach programs in the RPMs and conservation measures are subject to the availability of funds by Congress. The Corps will exercise its best efforts to secure funding for those activities. In the event the necessary funding is not obtained to accomplish the RPM activities by the dates established in the BO, the Mobile District will reinitiate consultation with USFWS as necessary.

Adaptive management (RPM1). Identify ways to minimize harm as new information is collected.

Rationale. Additional information will be collected about the listed species and their habitats in the action area, water use upstream, and climatic conditions. This information needs to be evaluated to determine if actions to avoid and minimize take associated with the Corps' water management operations are effective or could be improved.

a. The Corps shall organize semi-annual meetings with the Service to review implementation of the IOP and new data, identify information needs, scope methods to address those needs, including, but not limited to, evaluations and monitoring specified in this Incidental Take Statement, review results, formulate actions that minimize take of listed species, and monitor the effectiveness of those actions.

STATUS: In discussions with USFWS, it was recommended that a semi-annual meeting be held in the early fall of each year (preferably in August); and in the late winter or early spring prior to initiation of fish spawn activities (preferably in February). Since the BO was issued in September 2006, the first semi-annual meeting was held at the USFWS Panama City Field Office on 26 October 2006. A copy of the Memorandum for Record of this meeting is enclosed (**Enclosure 1**). At this meeting, the Corps and USFWS discussed current water management operations in support of the listed species, a draft plan and schedule for implementing the RPMs and terms and conditions, and confirmed the monitoring plans being implemented to track potential taking days. The next semi-annual meeting will be scheduled for late February or early March 2007.

b. The Corps shall assume responsibility for the studies and actions that both agencies agree are reasonable and necessary to minimize take resulting from the Corps' water management actions.

STATUS: Suggestions for conduct of studies and actions described in the BO were discussed at the semi-annual/planning meeting on 26 October. The Corps accepts responsibility for those reasonable and necessary actions, subject to authority and funding limitations. Due to budget constraints (the Corps has been operating under limited Continuing Resolution Act funding since the beginning of Fiscal Year 2007, and these funding limitations are anticipated to continue for several more months into 2007), implementation of some of the activities requiring additional studies or procurement of other services may be delayed or deferred until funding is available. However, all the actions related to project operations and that can be accomplished within current funding levels are being implemented. In the meantime, other sources of funding are being

sought to assist in implementing the other required studies as soon as possible. Incremental funding is expected to be available in Spring 2007.

c. The Corps shall evaluate refinements to predictive tools.

STATUS: The Mobile District is actively pursuing two actions that will assist in the use of predictive modeling tools. These include the extension of the unimpaired flow dataset for the Apalachicola-Chattahoochee-Flint River (ACF) basin from 2001 through 2004. In the event additional demand data can be obtained from the States of Alabama, Florida and Georgia, attempts will be made to further extend the unimpaired flow dataset through 2005. The other action being pursued is to update the predictive hydrological model from HEC-5 to HEC-ResSim. The ResSim model will be more flexible, and can be programmed to run model simulations with if/then/else statements. This conversion should be completed by early in 2007 for the existing operations conditions, with the IOP as reflected in the BiOp integrated into the existing operations. It is anticipated that the ResSim model and the extended unimpaired flow data set would be used as a base for analyses incorporated into the Environmental Impact Statement (EIS) for proposed Interim Water Storage Contracts at Lake Lanier, and any future EIS to address updates or revisions to the existing water control plans.

The Mobile District is also investigating the use of the Apalachicola Bay 3-D Hydrodynamic model in the evaluations programmed for the EIS for the proposed Lake Lanier Interim Storage Contracts. This model can provide predictive measures for both circulation and salinity within the bay, and could therefore provide a measure of changes in salinity in sturgeon feeding areas due to potential changes in flow into the bay. If the Interim Storage Contracts at Lake Lanier would result in substantive changes in IOP operations and potential changes in freshwater flows, this model could assist in the required Section 7 consultation regarding potential modifications to sturgeon habitat in Apalachicola Bay and the estuarine channel areas.

USFWS recommends additional flow/velocity studies be conducted at the sturgeon spawning areas immediately below Jim Woodruff Dam in order to build the information based used in future consultations. The Mobile District has flow/velocity meters on hand that could be used to measure velocities at particular sites and depths, as determined necessary. The Mobile District is currently planning to work with the U.S. Geological Survey to prepare an updated flow/stage rating table relating to releases from the dam later this spring. Additional flow/velocity data may be able to be collected during the flow rating study, and this information could then be used to assist in future consultations regarding project operations.

d. The Corps shall provide an annual report to the Service on or before January 31 each year documenting compliance with the terms and conditions of this Incidental Take Statement during the previous federal fiscal year, any conservation measures implemented for listed species in the action area; and recommendations for actions in the coming year to minimize take of listed species.

STATUS: This report represents compliance with this term and condition. This report includes a status of compliance with the terms and conditions of the BO, and lists those RPM actions programmed for implementation in FY 2007 and 2008. In addition, several efforts have been accomplished over the past few months to accomplish the conservation measure recommendation for additional public outreach methods to inform the public regarding project operations and management efforts in support of endangered and threatened species. These efforts include a special display on the limitations of reservoir storage projects within the ACF basin that was provided and staffed during the five public scoping meetings in November and December 2006 on the Lake Lanier Interim Storage Contracts EIS; and the Drought Provision Workshop held in Columbus, Georgia on 13 December 2006 with representatives from the States of Alabama, Florida and Georgia and various interested stakeholders.

RPM2. Adjust June to February Lower Threshold to 10,000 cfs. Replace the proposed 8,000 cfs threshold in the IOP with a threshold of 10,000 cfs.

Rationale. Mussels may be in vulnerable areas where take may occur when flows are less than 10,000 cfs. Not increasing reservoir storage when basin inflow is 10,000 cfs or less from June to February will avoid and minimize the potential for take in the zone of 8,000 to 10,000 cfs.

a. The Corps shall immediately release the 7-day moving average basin inflow, but not less than 5,000 cfs, when the 7-day moving average basin inflow is less than 10,000 cfs for the months of June to February, and shall incorporate this revision into the IOP table of minimum discharges.

STATUS: The Mobile District implemented the requirements of RPM2 immediately upon issuance of the BO. Whenever the 7-day basin inflow is less than 10,000 cfs, at least basin inflow but not less than 5,000 cfs will be released. A copy of the revised IOP table was provided to USFWS by letter dated 7 September 2006 (**Enclosure 2**) and has been posted on the Mobile District website: http://www.sam.usace.army.mil/ACF.htm. A copy of this letter is also enclosed with this report. Below is a copy of the updated IOP table as required by the final BO.

U.S Army Corps of Engineers, Mobile District
Interim Operations Plan at Jim Woodruff Dam
and Releases to the Apalachicola River
In Support of Listed Mussels and Gulf Sturgeon

Minimum Releases

Months	Basin Inflow (BI) (cfs)*	Releases from JWLD (cfs)
March - May	>= 37,400	not less than 37,400
	>= 20,400 and < 37,400	>= 70% BI; not less than 20,400
	< 20,400	>= BI; not less than 5,000
June - February	>= 23,000	not less than 16,000
	>=10,000 and < 23,000	>= 70% BI; not less than 10,000
	< 10,000	>= BI; not less than 5,000

*The running 7-day average daily inflow to the Corps' ACF reservoir projects, excluding releases from project storage.

Down Ramping Rates

Release Range	Maximum Fall Rate (ft/day), measured at Chattahoochee gage
Flows greater than 30,000 cfs*	No ramping restriction**
Flows greater than 20,000 cfs but <= 30,000*	1.0 to 2.0 ft/day
Exceeds Powerhouse Capacity (~16,000 cfs) but <= 20,000 cfs*	0.5 to 1.0 ft/day
Within Powerhouse Capacity and > 8,000 cfs*	0.25 to 0.5 ft/day
Within Powerhouse Capacity and <=8,000 cfs*	0.25 ft/day or less

*Consistent with safety requirements, flood control purposes, equipment cababilities.
**For flows greater than 30,000 cfs, it is not reasonable or prudent to attempt to control down ramping rate, and no ramping rate is required.

RPM3. Drought provisions. Develop modifications to the IOP that provide a higher minimum flow to the Apalachicola River when reservoir storage and hydrologic conditions permit.

Rationale. Take of listed species due to the IOP may occur when the Corps is using a portion of basin inflow to increase ACF reservoir storage. The Corps can minimize mussel mortality due to low-flow conditions by supporting a higher minimum flow when total reservoir storage and/or hydrologic conditions permit. As proposed, the IOP uses reservoir storage to support a 5,000 cfs minimum flow. The available data indicates that higher minimum flows are supportable during normal and wet hydrologic periods, and during dry periods when the reservoirs are relatively full. Conversely, during extended drier than normal conditions, it may be prudent to store more water than allowed under the IOP during certain times of the year to insure minimum water availability later.

Possible components and triggers of the drought plan could be, but are not limited to: Corps reservoir action zones, cumulative reservoir storage remaining, total basin inflows, indictors of fish spawn, climatic condition indices, and flow levels at gages downstream of the Chattahoochee gage, such as the gage at Wewahitchka.

a. The Corps, with Service concurrence, shall initiate by January 30, 2007, IOP drought provisions that identify the reservoir, climatic, hydrologic, and/or listed species conditions that would allow supporting a higher minimum flow in the Apalachicola River, and that identify recommended water management measures to be implemented when conditions reach the identified drought trigger point(s).

b. If modifications to the IOP parameters for the months of March through May are adopted as part of the drought provisions, the Corps shall assess potential effects to Gulf sturgeon spawning and floodplain inundation. The Corps shall provide the models and a biological assessment of the effects of the drought provisions on listed species at least 135 days in advance of implementing the drought provisions in order to reinitiate this consultation relative to any proposed changes in the IOP.

STATUS: During the 26 October 2006 semi-annual/planning meeting, USFWS suggested that the Mobile District investigate whether a higher minimum flow than the 5,000 cfs specified in the IOP could be sustained year-round if there were opportunities to provide for additional storage during the spring spawning months (March – May) to support future augmentation releases for the higher minimum flows. The higher minimum flow identified for further consideration under the RPM3 drought provision were based on the flow conditions necessary to provide "flow-through" conditions at swift Slough and adequate depths at the impacted "hooks and bays"; as well as operational constraints while making releases through the powerhouse turbines during low flow conditions. Three scenarios were identified for further modeling and evaluations initially: alternative minimum flows of 5,800 cfs, 6,500 cfs and 7,000 cfs. In order to provide for additional storage during the March-May timeframe, it was agreed to consider lowering the upper threshold to 25,000 cfs (below which at least 70 percent of basin inflows would be released and up to 30 percent could be stored); and lowering the lower threshold to 16,000 cfs (below which 100 percent of the basin inflows would be released). The three scenarios modeled are shown in the table below:

		Basin Inflow (cfs)	Release
Mar-May	High	≥ 25,000	not less than 25,000
	Mid	≥ 16,000 and <25,000	≥ 70% BI, not less than 16,000
	Low	<16,000	≥ BI, not less than 5,800 (Scenario 1) 6,500 (Scenario 2) 7,000 (Scenario 3)

Jun-Feb	High	≥ 23,000	not less than 16,000
	Mid	≥ 10,000 and < 23,000	≥ 70% BI, not less than 10,000
	Low	< 10,000	≥ BI, not less than 5,800 (Scenario 1) 6,500 (Scenario 2) 7,000 (Scenario 3)

The Mobile District agreed to model these three scenarios as a screening tool to see if the system could support the higher minimum flows and/or if these adjustments would provide any meaningful benefits in providing higher support flows for mussels. The Mobile District agreed to provide feedback on the model results to USFWS in November, and then meet again on 6 December 2006 to discuss any additional adjustments or concepts for a drought provision that could be implemented by 30 January 2007.

The Mobile District provided modeling results to USFWS on 1 November 2006 for the above three scenarios (based on composite storage within the basin), which indicated that there would be shortages for each of the three scenarios, although the shortage for the 5,800 cfs scenario would be small. This indicated that a sustained minimum flow close to 5,800 cfs might be sustainable, but that a drought "trigger" would likely be required for this or higher minimum flow scenarios to indicate when the lower 5,000 cfs minimum flow would be prudent during sustained low flow or drought conditions. It was agreed the Mobile District would attempt to define a drought trigger, and that the results of further considerations and modeling would be presented at the 6 December meeting.

On 1 November 2006, the Florida Department of Environmental Protection (FDEP) requested a status of Corps efforts to develop the RPM3 drought provision and a meeting with their modelers regarding any proposed provision (**Enclosure 3**). By letter from Mobile District dated 6 November 2006 (**Enclosure 4**), the FDEP was informed that preliminary discussion and modeling had begun in consultation with USFWS, and that both agencies had agreed the first step was to investigate whether possible reductions in spring releases would provide sufficient composite storage to allow sustained higher releases in the summer months during drought conditions. It was noted that additional modeling would be conducted prior to an early December meeting with USFWS. Also under consideration was a possible workshop with ACF basin stakeholders, to be held before the end of the year, during which preliminary modeling results and suggested drought provisions could be discussed. It was also noted that the Mobile District intended to identify proposed components of a drought provision by the end of January, as required by the terms of RPM3; and that revisions to the spring release schedule or other elements of the IOP may require completion of additional Section 7 consultation prior to implementation under the IOP.

During November, the Mobile District was also approached by the Atlanta Regional Commission (ARC), regarding their suggestions for a drought provision or other modification to the IOP.

On 27 November 2006, an announcement was sent to the States of Alabama, Florida and Georgia, Federal agencies and other stakeholders regarding a Drought Provision Workshop to be held on 13 December 2006, in Columbus, Georgia (**Enclosure 5**).

During the Drought Provision Workshop, the Corps presented several concepts that had been considered (Concepts 1 through 4), with Concept 3 selected as the drought provision plan to be carried forward for further consideration. Concept 3 is comprised of operating in conformance with a modification of the IOP to lower the upper and lower flow thresholds for the March – May spawning period to 25,000 cfs and 16,000 cfs, respectively, as shown in the below table. Under normal to wet flow conditions, a higher minimum release of 6,500 cfs would be maintained. However, during sustained dry or drought conditions, a more conservative drought management operation would "trigger" the reversion to the lower minimum release of 5,000 cfs. The drought trigger would be determined by computing the Composite Storage** within the storage reservoirs within the basin. Whenever the Composite Storage falls below the bottom of Zone 2 into Zone 3, the drought trigger would dictate a minimum release of 5,000 cfs. The drought provision would maintain a minimum release of 5,000 cfs until conditions improve such that the Composite Storage reaches a level above the top of Zone 2 (i.e., within Zone 1). At this time, the drought provision would be suspended, and the higher minimum release of 6,500 cfs would be maintained.

		Basin Inflow (cfs)	Release
Mar-May	High	$\geq$ 25,000	not less than 25,000
	Mid	$\geq$ 16,000 and <25,000	$\geq$ 70% BI, not less than 16,000
	Low	<16,000	$\geq$ BI, not less than 6,500*
Jun-Feb	High	$\geq$ 23,000	not less than 16,000
	Mid	$\geq$ 10,000 and < 23,000	$\geq$ 70% BI, not less than 10,000
	Low	< 10,000	$\geq$ BI, not less than 6,500*

*Drought Provision: When Composite Storage is within Zones 1 and 2, then the higher minimum Release of 6,500 cfs would be maintained. When Composite Storage falls below the top of Zone 3, then Release will be reduced to the 5,000 cfs minimum; when Composite Storage is restored to above the top of Zone 2 (i.e., within Zone 1), then the higher minimum Release of at least 6,500 cfs would again be maintained.

**Composite Storage is the combined storage of Lake Sidney Lanier, West Point Lake and Walter F. George Lake.

Preliminary modeling results for Concept 3 were presented by the Mobile District at the 13 December workshop. Other stakeholders making presentations regarding suggestions for a drought provision, or information to be considered in development of a drought provision, included the State of Georgia Environmental Protection Division (GA-EPD) and ARC. A copy of the workshop memorandum of record is enclosed (**Enclosure 6**).

The memorandum for record of the workshop was provided to all workshop participants on 15 December 2006, and copies of all presentations, modeling assumptions, and the memorandum of the workshop have been posted on the Mobile District website at:

http://www.sam.usace.army.mil/ACF.htm

Participants in the workshop were requested to submit any additional comments on the proposed drought provision or suggestions for alternatives not later than 10 January 2007 so they may be considered prior to submittal of a drought provision on 31 January 2006.

Additional comments on the proposed drought provision were received from Gwinnett County, Georgia by letter dated 5 January 2007; from the GA-EPD by letter dated 9 January 2007; from the ARC by proposal submitted on 10 January 2007; from the Southeastern Power Administration (SEPA) by letter dated 10 January 2007; and from the FDEP by letter dated 16 January 2007. FDEP provided additional comments on the ARC and Georgia proposed concepts by letter dated 29 January 2007. Copies of this correspondence are enclosed (**Enclosures 7 – 12**) and are also posted on the Corps webpage. The Mobile District and USFWS are currently reviewing these comments to determine whether elements of the suggestions and concepts presented could provide some benefits in developing a drought provision. However, this evaluation cannot be completed by the due date of 30 January 2007 specified in the BO.

On 26 January 2007, the Mobile District completed the modeling and evaluation of the Concept 3 drought provision proposal using the same statistical analyses and effects analysis as prepared by the USFWS in the BO. In reviewing these results, it was determined that the Concept 3 plan would provide the desired beneficial effects on low flow conditions, providing for fewer years when flows were between 5,000 cfs and 7,000 cfs, higher sustained flows for mussels more of the time than the IOP during low flow conditions between 8,000 cfs and 10,000 cfs. However, it was determined in consultation with USFWS that the proposed reduction in spring releases provided lower frequencies and shorter durations of floodplain inundation for certain flow conditions which may produce adverse effects on host fish for mussels. Therefore, USFWS could not reach a determination that the proposed drought provision would result in a "not likely to adversely affect" determination for habitat for host fish for mussels. As a result, formal Section 7 consultation with the USFWS would be required for further consideration of the Concept 3 drought provision. However, it appears that additional adjustments to the proposed drought provision could be made that may remove this potential for adverse effect. These possible adjustments have been discussed with USFWS and it is agreed that they should be further investigated. Additional modeling and evaluation of the effects of possible adjustments to the Concept 3 drought provision are currently underway, but cannot be completed by 30 January 2007. However, it is anticipated that a drought provision can be identified, modeled, evaluated and implemented prior to the upcoming sturgeon spawning period which begins 1 March 2007.

Based on the new information that has been developed during the informal consultation discussions related to development of the drought provision, USFWS has agreed that it is

appropriate to continue efforts to identify an acceptable drought provision that can be implemented for this spring season. The Mobile District has requested an extension until 28 February 2007 in order to complete the necessary modeling and evaluations of the proposed adjustments to the proposed RPM3 drought provision. A copy of the request for the extension (letter dated 30 January 2007) is enclosed (**Enclosure 13**).

Additional comments and suggested alternative concepts for an RPM3 drought provision submitted by others will continue to be carefully reviewed and evaluated. However, it is unlikely that this careful review would be completed in time to formulate a revised drought provision that could be implemented by 1 March 2007. In addition, many of the suggestions would require a modification to the current ACF water control plans and cannot be considered at this time. We will continue our review, and if elements of the concepts appear to offer benefits to the current IOP or RPM3 drought provision, we may propose future adaptations or adjustments to the IOP or drought provision, consistent with the provision for adaptive management specified in RPM1. However, any proposal that produces adverse effects when considering the evaluation criteria used in the BO would likely require the re-initiation of formal consultation under Section 7 of the ESA. Formal Section 7 consultation would likely require a minimum of 135 days to complete.

RPM4. Sediment dynamics and channel morphology evaluation. Improve our understanding of the channel morphology and the dynamic nature of the Apalachicola River.

Rationale. The dynamic conditions of the Apalachicola need to be evaluated to monitor the zone at which take may occur and to identify alternatives to minimize effects to listed mussels in vulnerable locations. Both sediment transport and channel morphology need to be considered to provide a basis for predicting changes in morphology that may affect the relative vulnerability of mussels to take due to the IOP. The amount of mussel habitat and thus IOP-related take depends on channel morphology. This evaluation will inform alternatives that may be considered under RPM1 and RPM3.

a. In coordination with the Service, and other experts jointly identified, the Corps shall evaluate before March 30, 2007, the current status of sediment transport and channel stability in the Apalachicola River as it relates to the distribution of listed mussels and their vulnerability to low-flow conditions. The goals of the evaluation are to identify: 1) feasible water and/or habitat management actions that would minimize listed mussel mortality; 2) current patterns and trends in morphological changes; and 3) additional information needed, if any, to predict morphological changes that may affect the listed mussels. This evaluation shall be based on available information and tools and best professional judgment.

STATUS: The Mobile District draft plan presented to USFWS on 26 October 2006 recommended that a panel of experts be selected, with the first meeting scheduled in November 2006, and second meeting in February 2007 with a report due in March 2007. However, due to budget constraints (the Corps is currently operating under Continuing Resolution Authority (CRA) funding) and the time required to procure expert services, it was jointly agreed to defer a panel meeting until January 2007. Possible sources of

expert services were discussed including: the U.S. Army Corps Engineer Research and Development Center (ERDC) in Vicksburg, MS, possible 3rd party private consultant that reviewed the previous Simon and Li report on the Apalachicola River; a potomologist from St. Louis District or other similar expertise from Missouri River or other Corps Districts; or those involved in the Lidstone and Anderson report on the ACF. It was recommended that the Mobile District provide an expert from ERDC and/or a private consulting geomorphologist or Corps potomologist. USFWS also recommended inclusion of the USGS geomorphologist from Denver, CO (Kirk Vincent) that worked with USGS on the recent study on declining river levels on the Apalachicola River. The Mobile District would fund services for the ERDC, other Corps, and/or private consultant; and USFWS would fund the services of USGS (another DOI agency).

Additional funding constraints could delay initiation or completion of this action. It was agreed to revisit the funding situation in January, and the need for further consultation with USFWS regarding the due date would be determined. The Corps is continuing to operate under CRA funding constraints, which are anticipated to continue well into the year. However, the Corps has been aggressively pursuing other possible funding sources and expects to have funding in place later this spring to initiate efforts required by RPM4. Therefore, it is requested that the due date for this RPM4 requirement be extended until 30 August 2007. This schedule would provide for consideration of the panel report at the semi-annual meeting with USFWS in August 2007.

RPM5. Monitoring. Monitor the level of take associated with the IOP and evaluate ways to minimize take by studying the distribution and abundance of the listed mussels in the action area.

Rationale. Take needs to be monitored monthly to insure that the level of take identified in the biological opinion is not exceeded. As natural conditions change, the populations of the species need to be assessed and the amount of take evaluated relative to any new information. Since this is an interim plan and there will be additional consultations on the overall operations of the ACF project for flood control, water supply contracts, hydropower, and navigation, the monitoring information is needed to prepare the biological assessments for these future consultations.

a. The Corps shall monitor the number of days that releases from Woodruff Dam (daily average discharge at the Chattahoochee gage) are less than the daily basin inflow when daily basin inflow is less than 10,000 cfs but greater or equal to 8,000 cfs. If the total number of days of releases in this range in a calendar year is projected to exceed the total number of days of daily basin inflow in this range by more than 39, the Corps shall reinitiate consultation immediately.

STATUS: During the 26 October 2006 semi-annual/planning meeting, the Mobile District demonstrated to USFWS the spreadsheets used to track basin inflows and releases and to track the number days when the daily average discharge from Jim Woodruff Dam is less than the daily basin inflow while the daily inflow is between 8,000 cfs and 10,000 cfs. These conditions were tracked from 1 January 2006 through 31 December 2006. There were 23 days during calendar year 2006 when daily average

release was less than the daily basin inflow. Information regarding daily average inflow, 7-day average inflow and daily releases are regularly posted on the Mobile District Water Management website: http://water.sam.usace.army.mil/

Below is a listing of the potential taking days (dates when the daily release from Jim Woodruff Dam was less than the daily basin inflow).

	1-Day* Discharge	1-Day Inflow	16 Days prior to Sep 5
9/19/2006	7457	9334	1
9/25/2006	7585	8480	1
10/20/2006	7068	9105	1
10/24/2006	5849	8565	1
10/31/2006	6573	8091	1
11/11/2006	7142	8907	1
11/13/2006	7513	8578	1
			23

* As measured at the Chattahoochee Gage

b. In coordination with the Service, the Corps shall develop on or before March 30, 2007, a feasible plan to monitor listed mussels in the action area. The goals are to:
1) periodically estimate total abundance of listed mussels in the action area; and
2) determine the fraction of the population that is located in habitats that are vulnerable to low-flow impacts.

STATUS: During the 26 October 2006 semi-annual/planning meeting with USFWS, the Corps presented a conceptual plan for a recon level study, comprised of a mussel biologist and a river hydraulic scientist to review aerial photography and/or field inspections on the river to observe potential habitat and river hydraulic conditions. The purpose would be to identify those areas with potential habitat and those areas with stable or unstable river conditions. The recon level study would assist in development of a survey/sampling design for a mussel monitoring plan. This effort could potentially be integrated with the sediment/morphology panel review. However, this effort is currently delayed due to funding constraints (CRA funding limitations). It was agreed to revisit the funding situation in January, and the need for further consultation with USFWS regarding the due date would be determined. As noted above, the Corps expects to have funding in place later this spring to initiate efforts required by RPM5. Therefore, it is requested that the due date for this RPM5 requirement be extended until 30 August 2007. This schedule would provide for consideration of the mussel monitoring plan at the semi-annual meeting with USFWS in August 2007.

c. The Corps shall implement the studies outlined above as soon as is practicable.

STATUS: No funds for studies recommended by the sediment/morphology panel or to implement the mussel monitoring plan are available in FY 2007. However, funds have been requested for inclusion in the President's budget for FY 2008, and current plans are to initiate the mussel monitoring plan and studies or actions recommended by the sedimentation/morphological panel in FY 2008, as appropriate within funding and authority limitations.

d. The Corps shall include monitoring results in the annual report provided to the Service under Condition 1.c.

STATUS: Monitoring of the amount of take, consistent with RPM5, are reported in this report. Once the recommended additional monitoring and studies are funded and completed, the results will be included in the annual report as appropriate.

RAMPING RATES

The BO requires specific ramping rates for reducing the discharge, based on current discharge values as shown in Table 1.3.A of the BO, which is reproduced below. Since the BO was issued on 5 September 2006, all ramping rates have been met, as measured by the USGS Chattahoochee, FL river gage.

Table 1.3.A. IOP maximum fall rate for discharge from Woodruff Dam by release range.

Release Range (cfs)	Maximum Fall Rate (ft/day)[a]
≥ 30,000	Fall rate is not limited.
≥ 20,000 and < 30,000	1.0 to 2.0
> 16,000 and < 20,000	0.5 to 1.0
> 8,000 and ≤ 16,000	0.25 to 0.5
≤ 8,000	0.25 or less

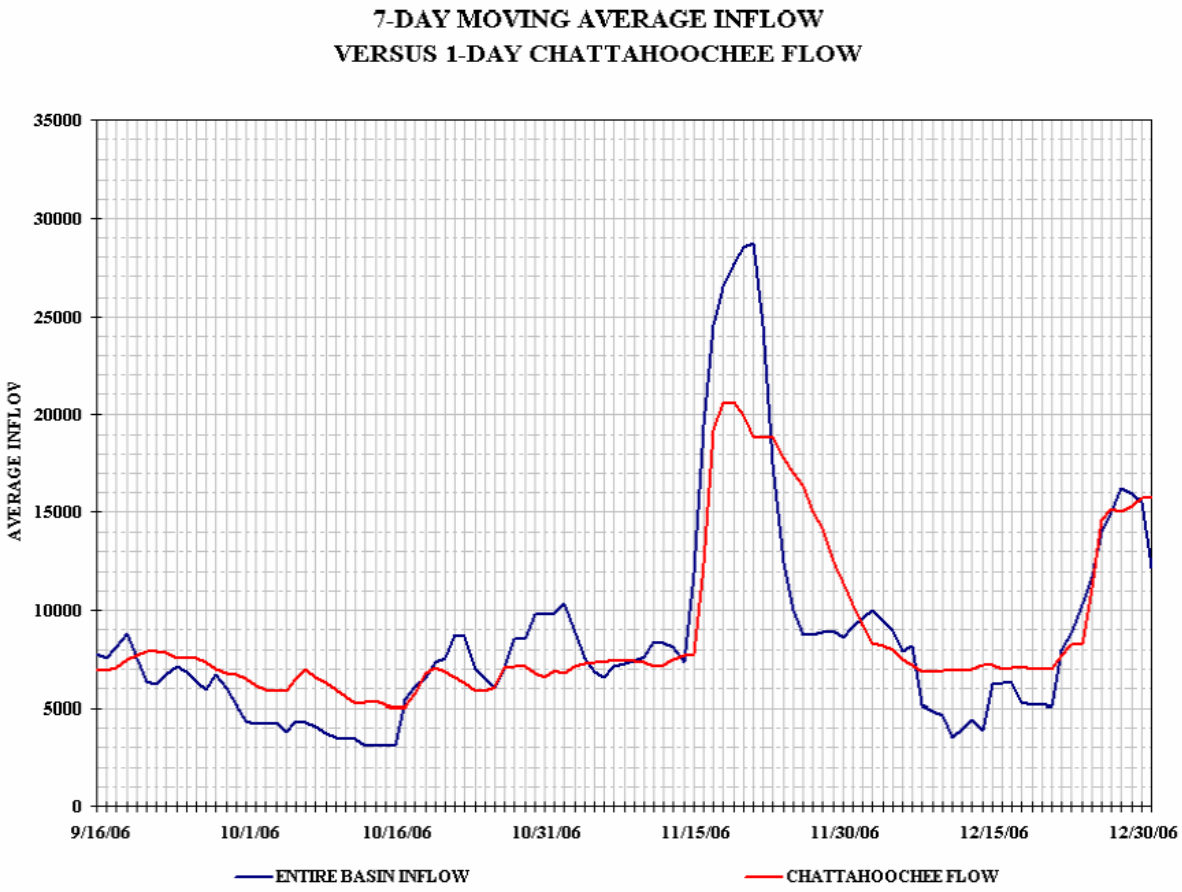
[a] Consistent with safety requirements, flood control purposes, and equipment capabilities, the IOP indicates that the Corps will attempt to limit fall rates to the lower value specified for each release range.

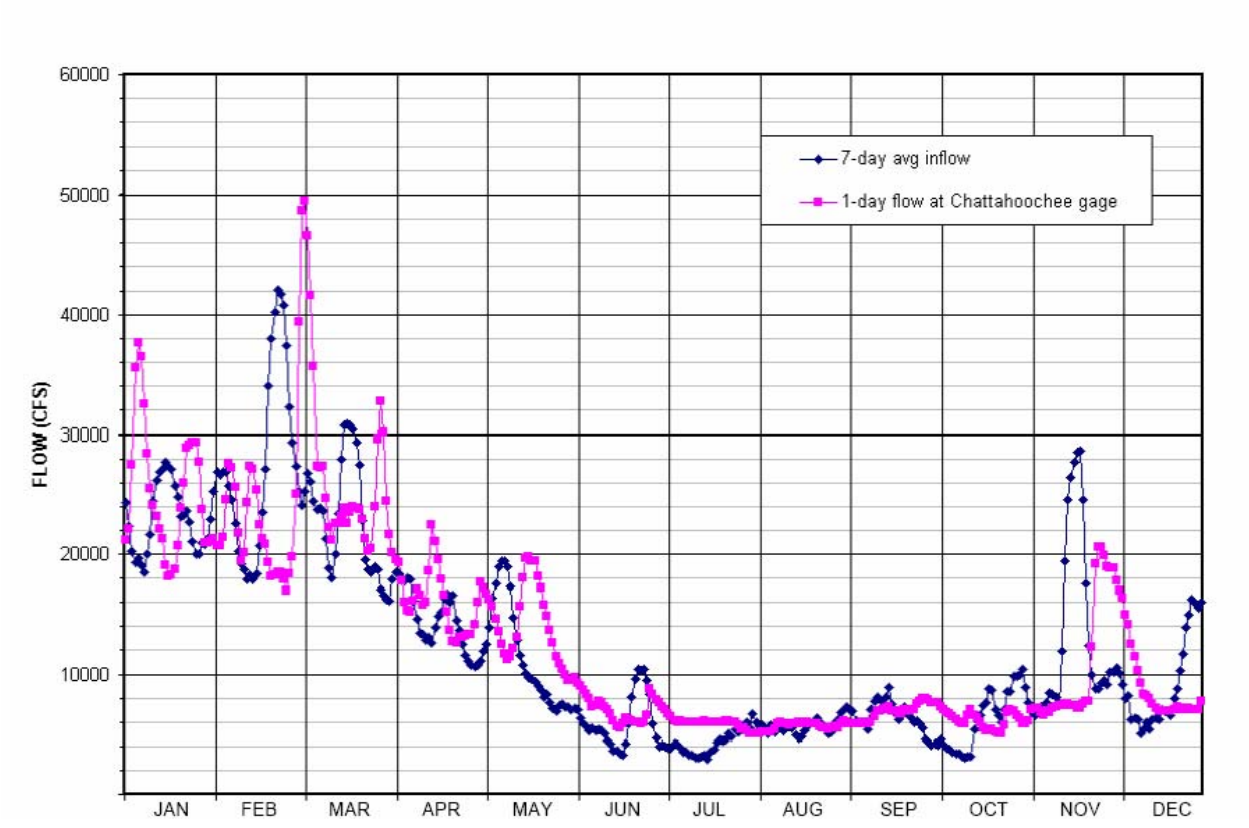
VOLUMETRIC BALANCING OF RELEASES

The BO also allows a volumetric balancing of releases in cases where following the ramping rates specified in the BO causes a release greater than that required to meet the above the calculated 7-day average basin inflow. During rain events, the required ramping rates are often more gradual than the decline in basin inflows, and potential over-releases and additional drain on reservoir storage could occur, especially when trying to match releases to the computed 7-day average basin inflow. In order to avoid over-releases and conserve storage, the volume of releases can be balanced during and following rain events. Releases after the rainfall events are adjusted to account for any computed under-release or over-release, to assure that releases are balanced to meet the computed volume of basin inflow over time. The volumetric balancing computations do not include releases for flood control or other special releases not required by the IOP, but primarily account for possible over-releases that occur due to the ramping rate restrictions.

From 5 September – 31 December 2006, in addition to the flows released for flood control and other special releases, 104.6% of the basin inflow was released.

Below is a hydrograph showing the 7-day average inflows and the 1-day average release from Jim Woodruff Dam, as measured at the USGS Chattahoochee, FL river gage during the September – December 2006 timeframe (following issuance of the final BO). Also below is a similar hydrograph showing the 7-day average basin inflow and the 1-day average releases for the entire year 2006. Additional information is posted regularly on the Mobile District Water Management website: http://water.sam.usace.army.mil/.


7-DAY MOVING AVERAGE INFLOW
VERSUS 1-DAY CHATTAHOOCHEE FLOW
AVERAGE INFLOW
35000
30000
25000
20000
15000
10000
5000
0
9/16/06
10/1/06
10/16/06
10/31/06
11/15/06
11/30/06
12/15/06
12/30/06
ENTIRE BASIN INFLOW
CHATTAHOOCHEE FLOW



(NOTE: Mobile District began operations under the originally submitted IOP in March 2006; under the revised IOP in June 2006; under a court-mandated operation from 21 June – 24 July 2006; reverted to the revised IOP on 24 July 2006; and initiated operations under the final IOP approved in the BO on 5 September 2006.)