



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

February 23, 2007

REPLY TO
ATTENTION OF:

Inland Environment Team
Planning and Environmental Division

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

Dear Ms. Carmody:

On February 16, 2007, the U.S. Army Corps of Engineers (Corps), Mobile District submitted a Biological Assessment (BA) for proposed changes to the Jim Woodruff Dam Interim Operations Plan (IOP) pursuant to the requirements of Section 7 of the Endangered Species Act (ESA) and in accordance with the terms and conditions of Reasonable and Prudent Measure 3 (RPM3) of the IOP Biological Opinion (BO) issued in September 2006. As described in the BA, the proposed action (Concept 5) was developed based on informal consultation discussions, modeling of various drought provision scenarios, and consideration of stakeholder comments submitted during the consultation period and following a workshop conducted in December 2006. We are providing the following additional information and clarifications in response to a request from your office regarding our review and evaluation of the stakeholder comments during development of an RPM3 drought provision operation.

During our consultation discussions, it was agreed that the goal of RPM3 is to provide for a drought provision operation that could be implemented during the 2007 spring spawning period (March 1 – May 31). In order to meet this goal, it was necessary to develop modifications to the IOP that met the intent of RPM3 without resulting in adverse effects to the listed species and critical habitat; and/or without resulting in effects that differ significantly from those addressed in the BO for the IOP. Any proposal that would produce potentially adverse effects when considering the evaluation criteria used in the BO, or that would include a range of effects not previously addressed 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.

On January 31, 2007, Mobile District submitted an Annual Report of activities completed in conformance with the requirements of the BO. The Annual Report included a summary of efforts undertaken to develop a drought provision operation pursuant to RPM3 of the BO. The Annual Report stated that we had reviewed the stakeholder's alternative concepts for a drought provision or alternative concepts for the IOP and made the determination that each of the suggested concepts as a whole would constitute a change to the water control plan. The intent of the IOP and the RPM3 drought provision is to identify adjustments to water management operations within the constraints

of the existing water control plan that would support or minimize harm to the federally protected endangered and threatened species and critical habitat for those species. Therefore, the concepts presented by the stakeholders that represent changes to the existing water control plan, would more appropriately be addressed in proposals to update the water control plans at a future date. It should be noted that the proposed action in the BA addresses many of the concerns expressed by the other stakeholders, such as providing for higher flows for mussels most of the time, using some degree of storage for flow support; storing additional water during the spring refill months; and basing operational decisions on available water within the system (taking into account both basin inflow and available storage). There are possible additional elements incorporated in the alternative stakeholder concepts, such as utilizing climatic or hydrological condition forecasting in conjunction with our operations under the existing water control plan, which might merit some further consideration. However, these alternative elements could not be adequately evaluated and modeled prior to a March 1, 2007, implementation date this spring. We suggest that other possible alternatives comprising selected elements of the stakeholder alternative concepts continue to be evaluated. Possible additional modifications to the IOP, if determined practicable and beneficial, could potentially be considered for implementation at a future time under the adaptive management provisions contained in RPM1 of the BO.

A matrix is enclosed that outlines the various stakeholder comments received and describes whether they were addressed by the Concept 5 proposal, are outside the scope of the IOP, or would require additional review and evaluation for possible future modifications to the IOP.

In summary, additional comments and suggested alternative concepts for an RPM3 drought provision or other possible modifications to the IOP submitted by others will continue to be carefully reviewed and evaluated. However, this careful review will not be completed in time to formulate an additional drought provision alternative that could be implemented by March 1, 2007. In addition, many of the suggestions or alternative concepts proposed by the stakeholders 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 proposed RPM3 drought provision, we may recommend future adaptations or adjustments to the IOP or drought provision, consistent with the provision for adaptive management specified in RPM1. Mobile District will continue to determine what type operations are appropriate and consistent with our responsibility to operate the projects under our existing water control plans in a balanced manner, taking into account the authorized multiple project purposes and our responsibility to minimize impacts to the Federally protected species and critical habitat. We would continue to informally consult with your staff during the consideration and development of any other alternative concepts. At this time, we believe our proposed Concept 5 drought provision operations adequately meets the terms and conditions of RPM3 in the BO, can effectively be implemented during the 2007 Spring spawning period without resulting in adverse effects to spawning for Gulf sturgeon or host fish for mussels, and will provide the desired benefits of higher flows to support mussel species most of the time.

If you have any additional questions, comments, or recommendations regarding our proposed operations or the biological assessment, please contact Ms. Joanne Brandt by telephone at (251) 690-3260 or email at joanne.u.brandt@sam.usace.army.mil; or Mr. Brian Zettle by telephone at (251) 690-2115 or email at brian.a.zettle@sam.usace.army.mil.

Sincerely,

A handwritten signature in black ink that reads "Roger A. Burke". The signature is written in a cursive style with a large initial "R".

Roger A. Burke
Assistant Chief, Planning and Environmental
Division

Enclosure

SOURCE	ISSUE	RECOMMENDATION	CORPS RESPONSE
SEPA	Dependable hydropower and potential loss of customers	Compensation analysis for loss benefits	The compensation analysis would be needed if proposed changes resulted in lower summer pools, impacts to dependable hydropower, or reductions in hydropower generation irrespective of hydrologic status. These types of operational modifications would require changes to the water control plan and are not being considered at this time.
GA-EPD	Best available scientific information demonstrates that flows required to support sturgeon spawning are too high. Gulf sturgeon habitat decreases at flows above 23,000 and there is insignificant gain above 10,000 cfs.	Reduce releases for sturgeon spawning to 11,000 cfs. Relate releases for spawning above this level to reservoir storage.	This action would not require a change to the water control plan. However, our consultation history with UFSWS suggests that spring flows in this range could result in adverse effects to Gulf sturgeon and host fish for mussels. The intent of RPM3 is to provide higher flows for mussels in the June – February months without adversely affecting sturgeon or host fish for mussels. Concept 5 reduces the spring flow thresholds in a manner to assure discretionary operations provide sufficient flows and into account available inflows in the basin.
	Storage during high flow is an illusion. Large portion of basin inflow is provided by Flint River and can not be stored.	Set reservoir refilling as the highest priority and maintain storage to support 5,000 cfs minimum flow.	The system is operated in a balanced fashion to support all authorized project purposes. Placing the suggested priority on these project purposes would require a change to the water control plan and could also require congressional authorization. The Concept 5 proposal allows for more storage during the spring refill month while still maintaining a balance between the goal to refill and also meet the other project purposes.
	Reservoir refill period corresponds with sturgeon spawning period; IOP allows few opportunities to gain storage.	Abolish the year-round 37,400 upper flow threshold. Avoid releases above 23,000 except when necessary for flood control.	This action would not require a change to the water control plan. The current RPM3 proposal does not include a year-round 37,400 cfs upper flow threshold; reduces the upper flow threshold; and allows for storage of a portion of the BI between when flows are greater than 18,000 cfs during the spring months (Mar-May), and when flows are greater than 10,000

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	IOP ramping limitation prevents storing of water	Loosen rampdown rate restrictions and offset loss of storage due to rampdown by releasing less than BI as BI rises and peaks.	cfs during the remainder of the year (Jun-Feb). This action would not require a change to the water control plan. The current RPM3 proposal does not change the rampdown schedule, but does include the volumetric balancing caveat to assist in preventing significant over releases and associated loss of storage, which achieves a similar result to the suggested operation.
	Supporting high flows during the spawning period and minimum flows above BI the rest of the time results in a year-round augmentation mode. Unable to meet the needs of all interests.	For months June-February store 100% of inflow above 5,000 minimum flow unless reservoir storage and climate forecast indicate reservoir refill will occur the following spring.	This action would require a change to the water control plan as it would eliminate a balanced reservoir system operation and would place higher priority on maintaining and refilling reservoir levels (presumably for water supply and recreation) at the detriment of downstream flow needs. Furthermore, it fails to accomplish the goal of RPM3 which is to maintain flows higher than 5,000 cfs when reservoir storage and climatic conditions allow in support of listed mussels.
	IOP ramping limitation prevents storing of water.	Allowable ramp-up rate = ramp-down rate	This action would require a change to the water control plan since it would significantly change current flood control operations.
	Current Water Control Plan Action Zones are out of date.	Raise Lake Sidney Lanier and West Point Action Zones 2 thru 4 by one foot each	Changes to the Action Zone elevations in the storage reservoirs would require a change to the water control plan and could also require congressional authorization.
ARC (Hydrologics)		Use conditional forecast technique to determine flow releases. Use available storage to determine the maximum sustainable flow. Determine Water Available and Maximum Supportable Flow: <ul style="list-style-type: none"> Forecast inflow to Lake Sidney Lanier between current day and June 1 	This plan requires a considerable change to the way water in the ACF Basin is managed. Almost every aspect of the plan would require a change in the water control plan for the basin. The system is currently operated in a balanced fashion to support all authorized project purposes. Placing priorities on keeping reservoirs full to support water supply and facilitating other project purposes incidentally would

SOURCE	ISSUE	RECOMMENDATION	CORPS RESPONSE								
		<ul style="list-style-type: none"> • Lanier used as a surrogate for system storage; when Lanier is full, the system is full • Currently using 90th percentile of forecasts • Subtract out volume needed for M&I, minimum flow, evaporation, and refill • Use graph to determine maximum supportable flow <table border="1" data-bbox="771 724 1052 1207"> <tr> <td>System storage > full</td> <td>Releases needed to maintain flood protection</td> </tr> <tr> <td>System storage > 5000 cfs carry-over</td> <td>Enhancement releases = max supportable flow</td> </tr> <tr> <td>System storage > safety storage</td> <td>5000 cfs</td> </tr> <tr> <td>System storage < safety storage</td> <td>No requirement</td> </tr> </table> <p>Storage available for enhancement releases is managed to avoid the last two cases for the entire historical record</p> <p>Provide highest minimum flow possible while refilling system by June 1 and reserve enough water to meet public health and safety requirements (2030 demands).</p>	System storage > full	Releases needed to maintain flood protection	System storage > 5000 cfs carry-over	Enhancement releases = max supportable flow	System storage > safety storage	5000 cfs	System storage < safety storage	No requirement	<p>require a change to the water control plan and could also require congressional authorization. Furthermore, this plan would likely result in a significantly higher frequency of flows at or near 5,000 cfs which does not meet the intent of RPM3. However, the use of a forecasting tool to assist in making operational decisions is being further considered and evaluated.</p>
System storage > full	Releases needed to maintain flood protection										
System storage > 5000 cfs carry-over	Enhancement releases = max supportable flow										
System storage > safety storage	5000 cfs										
System storage < safety storage	No requirement										
		<p>Protect Endangered Species; Reserve enough water to maintain 5,000 cfs and respect ramping rates over a multi-year period.</p>	<p>This aspect of the ARC plan is met by the current RPM3 proposal which includes provisions to maintain at least 5,000 cfs flow.</p>								
		<p>Maintain maximum supportable flow, but no more than 10,000 cfs</p>	<p>This aspect places a cap on the amount of support the storage reservoirs can provide, and relies on flows from the Flint River for the remainder of the Apalachicola River flow. Our consultation history with the USFWS suggests that flows resulting from this discretionary operation plan would likely result in adverse effects to Gulf sturgeon and listed mussels,</p>								

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FL DEP	IOP is reactive rather than proactive operation. No distinction between wet and dry seasons.	Develop a set of predictive conditions to select minimum Chatahoochee flow and base mussel flow target on January – March basin inflow.	particularly during drought conditions. The intent of RPM3 is to provide higher flows for mussels in the June – February months without adversely affecting sturgeon or host fish for mussels in the spring.
	5,000 cfs is an unacceptable flow floor; IOP does not allow for drafting of storage for benefit of mussels, except at 5,000 cfs.	Within the context of the IOP, the Corps can provide a higher flow in the Apalachicola River. In the majority of years a minimum flow of 6,300 cfs can be maintained and minimum flows should never drop below 5,700 cfs even under the most dire circumstances. Draft from storage to meet higher flow targets of 6,300 and 5,700 cfs June - February.	Use of forecasting in making water management decisions can be implemented without changing the water control plan, and is currently utilized to some degree in Mobile District water management operations. As mentioned before, the use of a forecasting tool to assist in IOP operational decisions is being further considered and evaluated.
		Draft from storage to meet higher flow floors	Changing the minimum flow from 5,000 cfs to 5,700 cfs would require changes to the water control plan and therefore was not considered. However, the current Concept 5 proposal generally meets the provisions of this recommendation by maintaining a desired flow of at least 6,500 cfs 95% of the simulated record (1975-2001) and resulting in flows less than 5,700 cfs only 4% of the simulated record. Flows were never below 5,000 cfs. The Concept 5 proposal also provides for those conditions when storage would be drafted to support the higher desired flow of 6,500 cfs; and those conditions when the lower required flow of 5,000 cfs would be prudent.
		Draft from storage to meet higher flow floors	The Concept 5 operation provides for drafting of storage in support of higher desired flow of 6,500 cfs for most of the time, but also provides for the drought provision which identifies when such augmentation would no longer be prudent under sustained drought conditions, but flow would be no lower than the required 5,000 cfs. Changing the minimum flow to 5,700 cfs would require a change to the water control plan.

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		<p>Maximize refilling of Lake Lanier from December to February.</p>	<p>These aspects of the Florida proposal requires changes to the water control plan since it would raise the winter pool of Lake Lanier to 1071, change the rule curve in the current water control plan, potentially impact flood control operations, and requires prioritizing refill of one project at the cost of the other projects and other authorized project purposes.</p>
		<p>Florida Concept Protects M&I intakes at Lake Lanier (i.e., intakes at elevation 1045 ft and below)</p>	<p>Operations under the current water control plan take into consideration the locations of the water supply intakes in making water management decisions, but there is no provision to maintain lake levels above the water supply intakes. Such a provision would effectively raise the bottom of the conservation pool and require a change to the water control plan. The Model outputs of the Florida concept and the Concept 5 operation suggest that both plans prevent lake levels from exposing existing water supply intakes at Lake Lanier.</p>