

## MEMORANDUM FOR RECORD

SUBJECT: Jim Woodruff Dam Existing Water Management Operations Section 7 Consultation – Teleconference with U.S. Fish and Wildlife Service on Elements of the Interim Operations Plan

1. A teleconference was held on 25 April 2006 between the U.S. Army Corps of Engineers, Mobile District and U.S. Fish and Wildlife Service (USFWS) to discuss the status of water management operations to implement the Interim Operations Plan, as proposed in the request to initiate formal Section 7 consultation. The intent was to share with USFWS the “lessons learned” to date in attempts to meet the conditions specified in the Interim Operations Plan, to clarify requirements and/or intent of the elements of the Interim Operations Plan, and to assure that there was a common understanding of the definition of and measurement of basin inflows and ramping rates upon which the Interim Operations Plan is based. The Mobile District, also wanted to offer some suggestions for possible adjustments to operations or to consider possible alternative operations methods or measurement tools that would make the Interim Operations Plan more manageable from a project operations perspective while still meeting the needs of the federally-protected species. The following representatives from Mobile District and USFWS participated in the teleconference and discussions.

Jerry Ziewitz

USFWS, Panama City, FL Field Office

## OPERATIONS DIVISION REPRESENTATIVES:

Jim Walker

Asst. Chief, Operations Division

Leon Cromartie

Chief, Hydropower Section

Jerry Fulton

Natural Resources Section

Bill Smallwood

Operations Project Manager, ACF Project Office

Richard Johns

Jim Woodruff Dam Powerhouse

Bob Chitwood

Walter F. George Resource Management Office

Bo Ansley

Lake Seminole Resource Management Office

Bill Bond

Lake Seminole Resource Management Office

## ENGINEERING DIVISION REPRESENTATIVES:

Memphis Vaughan

Chief, Water Management Section

Cheryl Hrabovsky

ACF Water Manager

## PLANNING DIVISION REPRESENTATIVES:

Mike Eubanks

Team Leader, Inland Environment Team

Joanne Brandt

ACF Compliance Manager, Inland Environment Team

Matt Lang

Inland Environment Team

2. Status of Gulf Sturgeon Spawning and Effectiveness of the Interim Operations. Jerry Ziewitz gave a current status of the progress of Gulf sturgeon spawning below Jim Woodruff Dam. Sturgeon eggs have been collected from three spawning locations this year: the previously known spawning site at approximate NM 105 immediately below Jim Woodruff Dam; a second site located on the left descending bank just downstream of the I-10 Hwy bridge; and a third site identified earlier this week on the right descending bank immediately upstream of the I-10 Hwy bridge. Although eggs were collected this week, water temperatures have risen to about 24 degrees centigrade, and spawning activities are expected to be concluding shortly due to the rising water temperatures. Jerry Z. had reviewed the web postings of basin inflows, discharges from Jim Woodruff Dam to the Apalachicola River, and found only one incident where discharges were less than basin inflows when addressed on a weekly time-step. That incident was during the weekend of 21 March, after a large rain event in the upper basin. It was understood by both agencies that releases did not catch back up with the basin inflows for several days after the rain event while waiting for the water to move downstream from the upper basin to the lower basin. Jerry stated he considered the Mobile District water managers were doing a pretty good job at implementing the Interim Operations Plan, and suggested that the longer time-step (i.e., 7-day rather than 3-day average) was probably more appropriate to manage and monitor for consistency with the Interim Operations Plan due to the logistics of managing flows within the system.

3. Measurement of Average Basin Inflows and Releases from Jim Woodruff Dam. Memphis and Cheryl described Mobile District efforts to manage releases from the dam to meet 100 percent of basin inflows by monitoring the 3-day average basin inflows, as described in the Interim Operations Plan, and the difficulties in matching releases to basin inflows over the short-term. There can often be a several day delay, as long as 7 to 10 days, before rainfall received in the upper basin can be moved and released from Jim Woodruff to the Apalachicola River. It is also often difficult to predict how much the basin inflow will increase for a given rainfall event and to anticipate the necessary adjustments to releases to assure that 100 percent will be released over the short timeframe. Another concern was that the gradual ramping rates also must be considered as part of the computed release, and often result in much more gradual ramping rates than the rate of declining basin inflows, which means more storage would be required to provide the gradual ramping of releases. When managing releases after rain events, Mobile District has accordingly often released less than the peak basin inflow during the rain event, but used the balance to assist in providing smoother transitions and the more gradual ramping rates. This represents more of a volumetric computation of the amount of inflows and releases, rather than trying to follow daily fluctuations in the basin inflows - which is difficult if not impossible to achieve from a system management perspective. Jerry Z. noted that there should be a higher priority on providing the smoother transitions and gradual ramping rates in order to prevent standing of sturgeon or other fish, and to be protective of mussels, especially during low flow conditions. It was therefore agreed that the Corps should continue to "smooth" off the peaks of the rain events in order to use the excess basin inflow to provide the more gradual ramping rates following the rain event. Jerry Z. also liked the idea of the 7-day volumetric computation of basin inflows and releases, and recommended it be computed from Wednesday to the next Tuesday (since the Mobile District weekly Water Management meeting is typically on Wednesdays). Computations of inflows and releases and back-casting for consistency would be monitored on the weekly basis, and any adjustments could be made the next week as necessary

to compensate for any shortfall of releases the previous week. Adjustments would typically consist of sustaining releases at a base level for a longer period, increasing releases incrementally if basin inflows had increased, or decreasing releases incrementally if basin inflows had declined. Such a volumetric measurement of inflow versus releases could also be monitored for the entire March through May sturgeon spawning period. Daily water management decisions would then focus on ramping rates for the river and the reservoirs during the fish spawn periods.

Bill Smallwood noted that he had been receiving multiple complaints about rapid declines in Walter F. George Lake levels after rain events, as water was rapidly moved downstream to meet the basin inflow targets on the Apalachicola River. The alternative of managing on a longer time-step, and the volumetric method for computation of basin inflows and releases, would likely minimize fluctuations in river stages, and may also minimize rapid fluctuations in the upstream reservoirs following rain events.

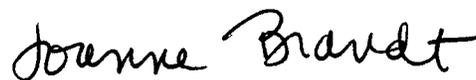
4. Computation and Management of Percentage of Basin Inflows to be Released. The Interim Operations Plan requires a minimum of 70 percent of basin inflows to be released during certain times of the year and certain flow conditions. Similar to the above discussion, this has been difficult to achieve during and immediately following rain events on a short-term basis. Basin inflows may rapidly rise and fall during a rainfall event, but inflows from a rainfall event in the upper basin may take several days to reach the lower basin for release to the Apalachicola River. It was agreed to use the same 7-day volumetric computation as described above when determining the amount of inflows that will be stored and released, and make adjustments in releases as necessary the following week. Any excess storage may therefore be used to assist in augmenting or sustaining flows for longer periods following the rain event.

5. Ramping Rates. The Interim Operations Plan specifies ramping rates of 0.5 ft/day to 1.0 ft/day when flows/releases exceed the capacity of the powerhouse, and 0.25 ft/day to 0.5 ft/day or less when passing flows/releases through the powerhouse. The Interim Operations Plan specified that the powerhouse capacity was 18,000 cfs (capacity of previous turbines); however, it was noted that the capacity of the new turbines was closer to 16,000 cfs (5,500 cfs per turbine). There was much discussion about the difficulties of achieving specific ramping rates at such fine increments as 0.25 ft/day. Although a 500 cfs reduction of flow is generally equivalent to a 0.25 ft reduction in stage at Blountstown, and a 1000 cfs reduction is equivalent to a 0.5 ft reduction at Blountstown, this relationship can be affected by many other factors and is attenuated as you proceed downstream. Generator outflow is based on head differentials at the dam, which can vary with different flow conditions. Lockages can provide additional flow (estimated at 380 cfs per lockage). Efforts to produce a gradual change in stage by switching on and off units or opening trash gates, spill gates or other operations at the dam obviously cannot produce a very precise or predictable change in stage. It was therefore suggested that instead of trying to manage for changes in releases to meet a specific ft/day reduction in stage, water management operations would provide for a specific gradual ramping down of flows, with the understanding that the flow reduction was also equivalent to a gradual reduction in stage (e.g., reduction in flow of 500 cfs per day would be equivalent to an equivalent reduction in stage of 0.25 ft/day as measured at Blountstown gage).

Jerry Z. also recommended that the ramping rates be tied to the Chattahoochee gage rather than the Blountstown gage. Memphis noted that access of the Powerhouse to the Chattahoochee gage data had recently been removed by the U.S. Geological Survey, but that he had already initiated steps to restore access by the Powerhouse to the gage. Jerry also noted that achieving the 0.25 ft/day ramping rates (i.e., 500 cfs reduction in flow) was most important during the lower flow conditions in the upper river, in order to not strand fish and expose mussels. Attenuation of the ramping rates occurs downstream, which means managing for these rates in the upper river by referencing the Chattahoochee gage is the more conservative approach.

6. “Mini-Peaking” Operation at Jim Woodruff Powerhouse. Operations personnel pointed out that there has been for several years a “mini-peaking” operation at Jim Woodruff powerhouse. Under contractual agreements Mobile District has been providing a daily generation schedule of 36 MW for one or two hours a day, typically between the hours of 5:00 p.m. to 6:00 p.m. It is proposed to continue this operation under the Interim Operations Plan. Fluctuations in stage during the “peaking” operation are generally more pronounced during low flow conditions, but appear to be less than one foot as measured from the base flow. During higher flow conditions there may be no peaking if the 36 MW is achieved during normal releases and generation schedules. Jerry Z. stated he had noticed this peaking operation in his previous review of the Chattahoochee gage hourly data, that it represented a temporary spike above the base flow, and was not a severe or long-term fluctuation as in typical peaking plants. Jerry agreed to review the biological literature to see if he can ascertain how the species would react to such short-term fluctuations. He also noted that in computing or monitoring for rates of change on a daily basis, the daily rate of change is generally the average of the hourly rates of change over a 24-hour period compared to the average rate of change for the next 24-hour period.

7. Jerry Z. complimented the Mobile District water managers for their efforts in managing such a complex system to meet the need of the species, and noted that there had been no evidence of problems with Gulf sturgeon spawning this year while implementing the Interim Operations Plan. We agreed that Mobile District should decide on the appropriate management tools for computing the basin inflows and releases and managing ramping rates, based on these discussions and any other pertinent information. Mobile District will provide by official correspondence a description of the proposed adjustments to the operating plan to be considered during the formal Section 7 consultation process. We will then decide how to describe the operation and the appropriate assumptions to be incorporated into the modeling of the Interim Operations Plan. Modeling will be conducted in a team approach between both USFWS and the Mobile District, and will include modeling of the overall Interim Operations Plan on a daily/weekly basis; and some form of modeling to capture the impacts of the “mini-peaking” operation hourly fluctuations. Discussion on modeling efforts are planned to begin next week.



JOANNE BRANDT  
Compliance Manager  
Inland Environment Team