



IN REPLY REFER TO:

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February 28, 2007

Curtis Flakes
Inland Environment Team
Planning Environmental Division
Mobile District, Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Mr. Flakes:

The U.S. Fish and Wildlife Service (Service) has received your letter and Biological Assessment (BA) dated February 15, 2007, regarding modifications to the Interim Operating Plan (IOP) for Jim Woodruff Dam and the associated releases to the Apalachicola River. Reasonable and Prudent Measure 3 (RPM3) of our September 5, 2006, Biological Opinion (BO) for the IOP requires operational modifications that would allow supporting a higher minimum flow (> 5,000 cfs) in the Apalachicola River when reservoir storage and hydrologic conditions permit. The BA describes a proposal called Concept 5 that is intended to achieve the purpose of RPM3. Your letter requests our approval to begin implementing Concept 5 on March 1, 2007, and requests our concurrence with your determination that doing so will either not likely adversely affect listed species or critical habitats or will result in effects that are similar to those addressed in the BO. This letter is the Service's answer to these two requests.

As described in your BA, Concept 5 alters some of the basin inflow thresholds and the associated releases from Woodruff Dam that are included in the minimum discharge schedule of the IOP (Table 1). For comparative purposes, Table 1 shows the thresholds and releases of the IOP both with and without (in italics) the Concept 5 modifications. Concept 5 does not alter the maximum fall rate (down ramping) schedule or other components of the IOP. Changes to the IOP under Concept 5 are limited to the spring months (March through May), and to low flow conditions year-round.

Table 1. Concept 5 minimum discharge from Woodruff Dam by month and by basin inflow (BI) rates (discharge values of the IOP without the Concept 5 modifications are given in italics and enclosed in parenthesis for comparative purposes only).

Months		Basin Inflow (cfs) ^a	Releases from Woodruff Dam (cfs)
March - May	High	$\geq 35,800$ (<i>37,400</i>)	Not less than 25,000 (<i>37,400</i>)
	Mid	$\geq 18,000$ (<i>20,400</i>) and $< 35,800$ (<i>37,400</i>)	$\geq 70\%$ BI; not less than 18,000 (<i>20,400</i>)
	Low	$< 18,000$ (<i>20,400</i>)	\geq BI; not less than 6,500 (desired) ^b \geq BI; not less than 5,000 (required) ^b
June - February	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 (desired) ^b \geq BI; not less than 5,000 (required) ^b

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

^b Drought provision: when composite storage (Lanier, West Point, and W.F. George) is within zones 1 or 2, the desired release of 6,500 cfs is supported. When composite storage falls into zone 3, the required release of 5,000 cfs is supported until storage returns to composite zone 1.

The IOP is an addition to the reservoir volume zones and schedules of the Water Control Plan (WCP) and is keyed to 7-day-average basin inflow. During the spring months, Concept 5 lowers the basin inflow thresholds and associated releases of the IOP. The general operational effects of these changes are to:

- broaden the high range of basin inflow (wherein the Corps withholds water in the reservoirs without restriction);
- shift the mid range of basin inflow downward (wherein releases are at least 70% of basin inflow); and
- narrow the low range of basin inflow (wherein releases are greater than or equal to basin inflow, but not less than a minimum level).

When basin inflow is in the low range regardless of season, Concept 5 adds a “desired” minimum release of 6,500 cfs to the required minimum release of 5,000 cfs that was already in the schedule. The desired 6,500 cfs minimum release is supported by drafting reservoir storage under certain circumstances, which are defined by the combined volume of water in Lanier, West Point, and W.F. George reservoirs relative to the zones of the WCP. The desired release is supported when composite reservoir storage is within Zone 1, and also within Zone 2, unless the system is refilling from Zone 3 levels and has not yet returned to Zone 1 levels. When storage falls into composite Zone 3, the desired minimum release is discontinued and replaced by the required 5,000 cfs minimum release. Following a drop into Zone 3, support of the desired 6,500 cfs release does not resume until composite storage has refilled to the top of Zone 2 (bottom of Zone 1).

The BA adds two sets of flow analyses to those included in the September 5, 2006, BO of the IOP: 1) flows simulated for the IOP as modified by RPM2 (called IOP Revised [IOPR] in the BA), which increases the threshold for the low range of basin inflow during June through February from 8,000 cfs to 10,000 cfs; and 2) flows simulated for the IOP with the proposed Concept 5 modifications. We find that the methods contained in the BA are consistent with those of our BO.

We have further examined the Corps' Concept 5 model results specifically to determine how the frequency of flows less than 6,500 cfs would be affected by the proposed operational modifications. This analysis was not included in the BA or BO, but is appropriate to include here, since 6,500 cfs is the desired minimum flow supported by these modifications. Table 2 shows how Concept 5 would reduce the number of days of flow less than 6,500 cfs relative to observed flows and the other modeled scenarios. For calendar years 1975-2001, the observed flow of the Apalachicola River at Chattahoochee, FL, was less than 6,500 cfs for 585 days. Consumptive water uses gradually increased to present-day levels during these years. The hydrologic models subtract year 2000 consumptive water uses from unimpaired flow for this period of record to simulate 1,115 days of basin inflow (labeled as run-of-river in Table 2) less than 6,500 cfs. The Concept 5 simulation, which also uses year 2000 consumptive demands, results in 504 days less than 6,500 cfs. Therefore, the Concept 5 simulation is augmenting low basin inflow with releases from storage for $1115 - 504 = 611$ days (about 6 percent of the period). Concept 5 reduces the number of days in this low-flow range relative to historic conditions and relative to the previous versions of the IOP. Because it achieves a reduction in the amount of time that flow is less than 6,500 cfs while always maintaining a 5,000 cfs minimum flow, the Service finds that the proposed Concept 5 operations are consistent with the purpose of RPM3.

Table 2. Number of days less than 6,500 and 5,000 cfs from Jan. 1, 1975, to Dec. 31, 2001, for the Apalachicola River at Chattahoochee, FL, under observed (Baseline) and simulated (Interim Operations Plan [IOP], Run of River [ROR], IOP as revised by RPM2 [IOPR], Concept 5) operations of the Corps' Federal reservoirs in the basin.

Flow (cfs)	Number of days 1975-2001				
	Baseline	IOP	RoR	IOPR	Concept 5
< 6,500	585	561	1115	560	504
< 5,000	80	0	579	0	0

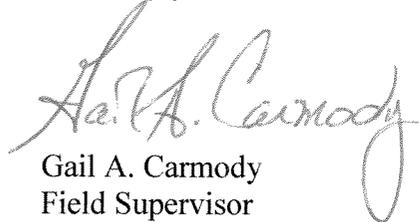
Various stakeholders provided recommendations regarding RPM3, and we recognize that some of these could possibly provide greater instream flow support consistent with the purpose of RPM3 than the proposed Concept 5 modifications. We asked the Corps to document its review of these recommendations for us, which the Corps provided to us by letter dated February 23, 2007. This review notes whether stakeholder recommendations are addressed by the Concept 5 proposal, are outside of the scope of the IOP (i.e., a departure from the WCP), or would require additional review and evaluation for possible future modifications to the IOP. In order to minimize the impacts of incidental take of listed species as described in the BO, the terms and conditions for RPM3 called for initiating by January 30, 2007, provisions for supporting a higher minimum flow when conditions permit. By letter dated February 2, 2007, we agreed with you to delay this initiation until February 28, 2007. We acknowledge that Concept 5 is the Corps'

proposal for an action, having considered alternatives and stakeholder recommendations, that: 1) fulfills the purpose of RPM3; 2) is consistent with the Corps' authorities; 3) and is feasible for immediate implementation.

The BA considers the effects of Concept 5 on: 1) the flow regime of the Apalachicola River generally; 2) submerged hard bottom substrates (sturgeon spawning habitat); 3) salinity and invertebrate populations in Apalachicola Bay (sturgeon feeding habitat); 4) submerged habitat below 10,000 cfs (mussel habitat); and 5) floodplain connectivity and system productivity. We have reviewed your analyses and find that, as intended, the IOP with the proposed Concept 5 modifications would store more water during the spring months and release more water during low-flow conditions than the IOP without Concept 5. We agree that implementing Concept 5 is likely to reduce the impacts of incidental take authorized in the BO and will not likely result in any additional impacts to listed species and critical habitats that are significantly greater than those already addressed in the BO. Until the Corps evaluates and proposes alternative operations via the adaptive management process under RPM1, the Service agrees to Concept 5 as the means of implementing RMP3 beginning March 1, 2007.

Thank you for the good effort on this task. We look forward to working with you further on system operations and fish and wildlife conservation in the basin. If you have any questions or comments, please contact Jerry Ziewitz at extension 223.

Sincerely yours,



Gail A. Carmody
Field Supervisor