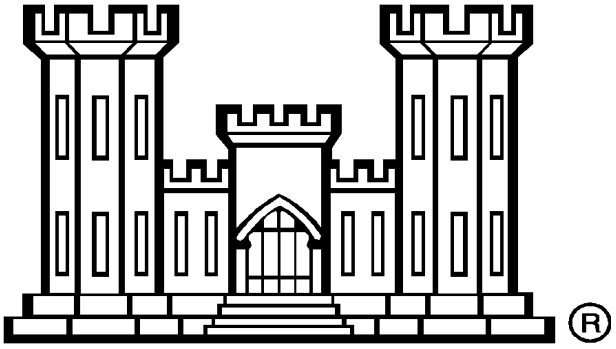
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
MODIFICATIONS TO THE INTERIM OPERATIONS PLAN FOR SUPPORT OF ENDANGERED AND THREATENED SPECIES AND TEMPORARY WAIVER FROM ACF WATER CONTROL PLAN
JIM WOODRUFF DAM
GADSDEN AND JACKSON COUNTIES, FLORIDA AND DECATUR COUNTY, GEORGIA

Prepared by

U.S. Army Corps of Engineers, Mobile District
Planning and Environmental Division
Environment and Resources Branch
Inland Environment Team



JUNE 2008

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1. INTRODUCTION:

The National Environmental Policy Act (NEPA) requires Federal agencies to supplement environmental assessments (EA) and environmental impact statements (EIS) in response to new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. (40 C.F.R. 1509(c)(1)(ii)).

The various iterations of the Interim Operations Plan (IOP) at Jim Woodruff Dam and the Exceptional Drought Operations (EDO) temporary modifications to the IOP were previously analyzed in the EAs and associated Finding(s) of No Significant Impact (FONSI) completed by the U.S. Army Corps of Engineers (Corps), Mobile District, on October 9, 2006; March 8, 2007; and November 16, 2007 (Appendix A). These EAs were prepared utilizing a systematic, interdisciplinary approach integrating the natural and social sciences and the design arts with planning and decision-making. The EAs assessed the environmental impacts associated with implementing the IOP and its alternatives and evaluated them in multiple contexts for short-term and long-term effects and for adverse and beneficial effects. The proposed action and alternatives considered in this supplemental EA were previously not analyzed. This document supplements the EA and FONSI prepared in March 2007 and the proposed action represents a general integration of that action and the EDO previously considered in November 2007. This supplemental EA will incorporate by reference pertinent information from these previous EAs, as appropriate, and supplement it with the analysis for the proposed action.

a. Location: Jim Woodruff Dam is located at the confluence of the Chattahoochee and Flint Rivers and marks the upstream extent of the Apalachicola River Navigation project at Navigation Mile (NM) 106.3. The dam is located on the Chattahoochee, Florida U.S. Geological Survey quadrangle map (Figure 1), in Gadsden and Jackson Counties, Florida, and Decatur County, Georgia. Jim Woodruff Dam is the most downstream dam on the Apalachicola-Chattahoochee-Flint (ACF) system (Figure 2). Releases from Jim Woodruff Dam are made to the Apalachicola River, which is free-flowing from Jim Woodruff Dam to the Gulf of Mexico, a distance of approximately 106 miles, through Jackson, Gadsden, Liberty, Calhoun, Franklin and Gulf Counties, Florida.

The IOP directly impacts flows in the Apalachicola River and utilizes the composite storage of the reservoirs within the ACF system. Therefore the project area includes the ACF system upstream of Jim Woodruff Dam and the Apalachicola River, its distributaries, and Apalachicola Bay downstream of Woodruff Dam.

b. Proposed Action: The proposed action does not represent a new Water Control Plan for Jim Woodruff Dam or a new Master Operating Manual for the ACF. The proposed action is a modification of the current IOP, which is a definition of temporary discretionary operations within the limits and rule curves established by the existing water control plan (1989) for Jim Woodruff Dam. The IOP describes minimum releases and maximum fall rates for releases from the dam to the Apalachicola River in order to minimize or avoid adverse impacts or provide support to 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 threatened Chipola slabshell mussel (*Eliptio chipolaensis*). The drought plan incorporated into the proposed action would require a temporary waiver from the existing water control plan to provide for minimum releases less than 5,000 cubic feet per second (cfs) from Jim Woodruff Dam when the appropriate trigger is met and would also include provisions to allow temporary storage above the winter pool rule curve at the Walter F. George and West Point projects if the opportunity presents itself and/or begin spring refill operations at an earlier date in order to provide additional conservation storage for future needs.

The Corps operates five Federal reservoirs on the ACF as a system, and releases made from Jim Woodruff Dam under the IOP reflect the downstream end-result for system-wide operations measured by daily releases from Jim Woodruff Dam into the Apalachicola River. The proposed action does not address operational specifics at the four federal reservoirs upstream of Woodruff or other operational parameters at these reservoirs, other than the use of the composite reservoir storage of the system and releases from the upstream reservoirs as necessary to assure releases from Jim Woodruff Dam support and minimize adverse impacts to endangered or threatened species or critical habitat. Because the listed species and critical habitat areas of concern are predominately 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.

Like the current IOP, the proposed action specifies two parameters applicable to the daily releases from Jim Woodruff Dam: a minimum discharge and a maximum fall rate. Also like the current IOP, the proposed action places limitations on refill, but does not require a net drawdown of composite storage unless basin inflow is less than 5,000 cfs. However, the proposed action modifies how the minimum discharge is determined and identifies conditions under which maintenance of the maximum fall rate schedule is suspended and more conservative drought contingency operations begin. The proposed action does not change the current IOP basin inflow calculation (7-day moving average daily basin inflow), use of Chattahoochee gage to measure releases/river flow, use of volumetric balancing as described in the May 16, 2007 letter to U.S. Fish and Wildlife Service (USFWS), nor the limited hydropower peaking operations at Jim Woodruff Dam. A detailed description of the proposed action and how it modifies the current IOP is provided in the "DESCRIPTION OF THE RECOMMENDED PLAN**"** section below.

Operations under the proposed action will be implemented and continued until such time as additional formal consultation may again be initiated and completed, either in association with the update and revision of water control manuals for the ACF system, or sooner if conditions change or additional information is developed to justify a possible revision to operations. The most recent approved Water Control Manual for the ACF system is dated 1958. However, a draft Water Control Manual for the ACF was completed in 1989. Since that time, operations have been conducted in accordance with the draft Water Control Plan, with minor adjustments as necessary in recent years to accommodate current needs, such as operations in support of fish and wildlife and endangered and threatened species. The 1989 draft Water Control Manual has not been finalized due to ongoing litigation filed by the State of Alabama in 1990, which is currently consolidated for hearing in the Multiple District Litigation Court, held in the District Court for the Middle District of Florida. The Corps, Mobile District was recently directed by the Secretary of the Army to update and revise the ACF Water Control Manual and a Notice of Intent (NOI) to prepare a draft Environmental Impact Statement for the updated Water Control Manuals was published in the Federal Register on February 22, 2008. It is expected that any update of water control plans would include additional formal consultation under Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq*.) and additional National Environmental Policy Act (NEPA) documentation regarding system operations.

Figure 1. Jim Woodruff Dam Location

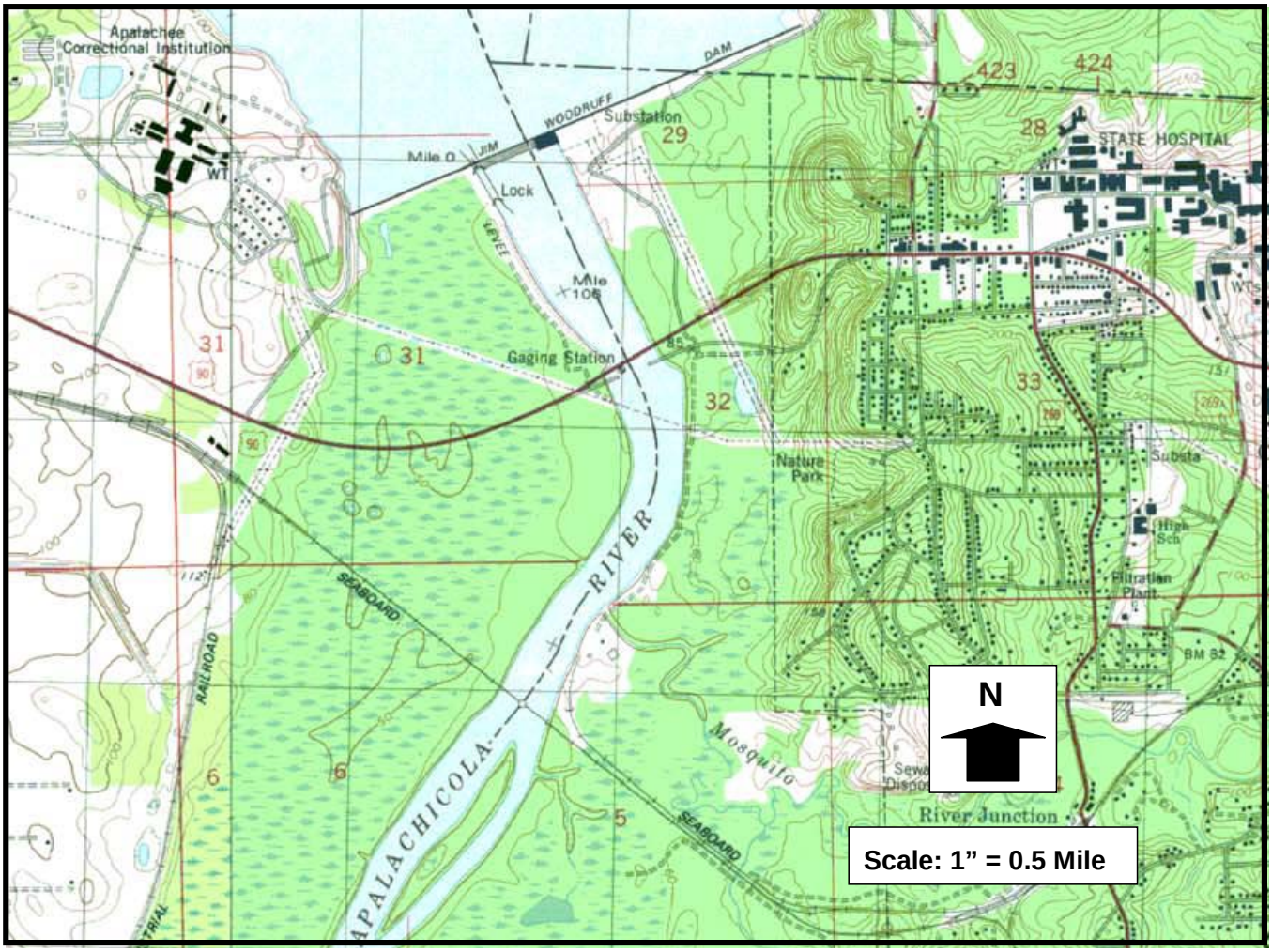
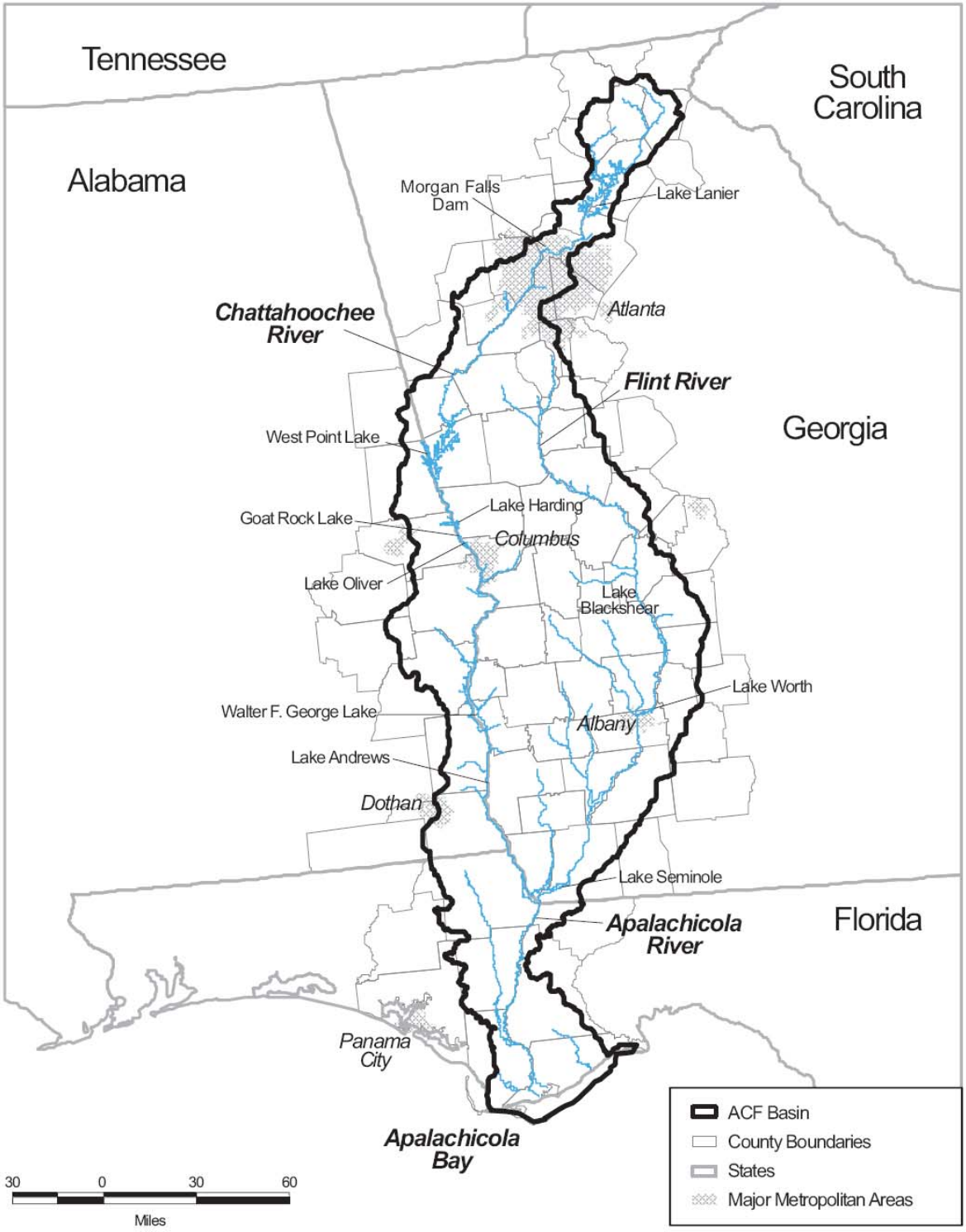


Figure 2. Apalachicola-Chattahoochee-Flint (ACF) River Basin



c. Purpose and Need for the Proposed Action: The purpose of any modification to the IOP would be to minimize adverse impacts to listed species in the Apalachicola River while making allowances for increased storage opportunities and/or reductions in the demand of storage in order to provide continued support to project purposes, minimize impacts to other water users, and provide greater assurance of future sustained flows for species and other users during a severe multi-year drought, currently being experience in the ACF basin.

The proposed action was developed based upon review of the current species information, basin stakeholder input, lessons learned from 2006-07, and continuing discussions between the Corps and the USFWS. The proposed modifications to the current IOP are intended to support listed species and their critical habitat in the Apalachicola River and avoid or minimize potential adverse impacts associated with discretionary operations at Jim Woodruff Dam. Throughout our previous consultations on the IOP and its implementation, we learned that two issues needed further consideration 1) incorporation of some form of drought plan and 2) additional need for storage conservation when system storage is low. In fact, the Reasonable and Prudent Measure 3 (RPM3) drought provision modifications incorporated into the current IOP were based, in part, on addressing these concerns. The proposed action further addresses these needs by 1) incorporating a drought contingency plan that allows for additional storage conservation and system recovery during periods of extreme drought, and 2) providing additional opportunities to conserve storage as we enter and exit drought conditions while still providing support for listed species and their critical habitat in the Apalachicola River.

By letter to the USFWS, on April 15, 2008, the Corps requested the initiation of formal Section 7 consultation pursuant to the ESA, on the proposed action. A final Biological Opinion (BO) determining no jeopardy associated with the proposed action and an Incidental Take Statement for Gulf sturgeon and the listed mussel species was issued by the USFWS, Panama City Field Office on June 1, 2008 (Appendix B).

d. Authority: A Federal interest in the ACF River basin dates to the 1800's when river improvements for navigation were authorized under the River and Harbor Act of 1874. The River and Harbor Acts of 1945 and 1946 provided for the initiation of construction of the Apalachicola River navigation project and a series of multipurpose reservoirs on the system. Modifications of this plan have resulted in the completion of five Corps dams in the basin, four on the Chattahoochee River, and one at the confluence of the Chattahoochee and Flint Rivers. The Buford project was completed in 1956, the Jim Woodruff project in 1957, and the Walter F. George and George W. Andrews projects in 1963. The West Point project was completed in 1984 (operations began in late 1974), pursuant to authorization by the River and Harbor Act of 1962 (Title I) and the Flood Control Act of 1962 (Title II). These projects are operated as a system to provide the authorized project purposes of flood control, fish and wildlife conservation, navigation, hydroelectric power, water supply, water quality, and recreation.

The ESA requires consultation with the Department of the Interior, USFWS or the

National Oceanic and Atmospheric Administration, National Marine Fisheries Service and provides authority for operating federal projects to protect endangered and threatened species. The Fish and Wildlife Coordination Act (P.L. 85-624) requires consultation with the USFWS and State fisheries management agencies regarding project impacts on other fish and wildlife.

2. AFFECTED ENVIRONMENT:

A current, detailed description of the environmental setting and significant resources occurring in the project area are incorporated by reference from the November 2007 ENVIRONMENTAL ASSESSMENT TEMPORARY EXCEPTIONAL DROUGHT OPERATIONS MODIFICATIONS TO THE INTERIM OPERATIONS PLAN FOR SUPPORT OF ENDANGERED AND THREATENED SPECIES AND TEMPORARY WAIVER FROM ACF WATER CONTROL PLANS JIM WOODRUFF DAM supporting the November 16, 2007 FONSI.

3. DESCRIPTION OF THE RECOMMENDED PLAN:

Like the current IOP, the recommended plan specifies two parameters applicable to the daily releases from Jim Woodruff Dam: a minimum discharge and a maximum fall rate. Also like the current IOP, the recommended plan places limitations on refill, but does not require a net drawdown of composite storage unless basin inflow is less than 5,000 cfs. However, the recommended plan modifies how the minimum discharge is determined and identifies conditions under which maintenance of the maximum fall rate schedule is suspended and more conservative drought contingency operations begin. The recommended plan does not change the current IOP basin inflow calculation (7-day moving average daily basin inflow), use of Chattahoochee gage (USGS number 02358000) to measure releases/river flow, use of volumetric balancing as described in the May 16, 2007 letter to USFWS, nor the limited hydropower peaking operations at Jim Woodruff Dam. A detailed description of the recommended plan and how it modifies the current IOP is provided below.

Minimum Discharge: Like the current IOP, the recommended plan varies minimum discharges from Jim Woodruff Dam by basin inflow and by month and the releases are measured as a daily average flow in cubic feet per second (cfs) at the Chattahoochee gage. Table 1 shows minimum releases from Jim Woodruff Dam prescribed by the recommended plan and shows when and how much basin inflow is available for increasing reservoir storage. Except when basin inflow is less than 5,000 cfs, the minimum releases are not required to exceed basin inflow. The current IOP defines three basin inflow threshold levels that vary by two seasons (spawning and non-spawning season). The recommended plan defines additional basin inflow threshold levels that vary by three seasons: spawning season (March-May); non-spawning season (June-November); and winter (December-February). The recommended plan further modifies the current IOP by also incorporating composite storage thresholds that factor into minimum release decisions. Composite storage is calculated by combining the storage of Lake Sidney Lanier, West Point Lake, and Walter F. George Lake. Each of the

individual storage reservoirs consists of four Zones. These Zones are determined by the operational guide curve for each project. The composite storage utilizes the four Zone concepts as well; i.e., Zone 1 of the composite storage represents the combined storage available in Zone 1 for each of the three storage reservoirs. During the spawning season, two sets of four basin inflow thresholds and corresponding releases exist based on composite storage. When composite storage is in Zones 1 and 2, a less conservative operation is in place. When composite storage is in Zone 3, a more conservative operation is in place while still avoiding or minimizing impacts to listed species and critical habitat in the river. When composite storage falls below the bottom of Zone 3 into Zone 4 the drought contingency operations are "triggered" representing the most conservative operational plan. A detailed description of the drought contingency operations is provided below. During the spawning season, a daily monitoring plan that tracks composite storage will be implemented in order to determine water management operations. Recent climatic and hydrological conditions experienced and meteorological forecasts will be used in addition to the composite storage values when determining the appropriate basin inflow thresholds to utilize in the upcoming days.

During the non-spawning season, one set of four basin inflow thresholds and corresponding releases exists based on composite storage in Zones 1-3. When composite storage falls below the bottom of Zone 3 into Zone 4 the drought contingency operations are "triggered".

During the winter season, there is only one basin inflow threshold and corresponding minimum release (5,000 cfs) while in composite storage Zones 1-3. There are no basin inflow storage restrictions as long as this minimum flow is met under these conditions. When composite storage falls below the bottom of Zone 3 into Zone 4 the drought contingency operations are "triggered".

Figures 3-5 below provide a graphical comparison of the operational provisions of the current IOP and the recommended plan based on season.

Table 1. Recommended plan Modified IOP Releases From Jim Woodruff Dam				
Months	**Composite Storage Zone**	**Basin Inflow (BI) (cfs)**	**Releases from JWLD (cfs)**	**Basin Inflow Available for Storage[1]**
March - May	Zones 1 and 2	>= 34,000	>= 25,000	Up to 100% BI > 25,000
		>= 16,000 and < 34,000	>= 16,000 + 50% BI > 16,000	Up to 50% BI > 16,000
		>= 5,000 and < 16,000	>= BI	
		< 5,000	>= 5,000	
	Zone 3	>= 39,000	>= 25,000	Up to 100% BI > 25,000
		>= 11,000 and < 39,000	>= 11,000 + 50% BI > 11,000	Up to 50% BI > 11,000
		>= 5,000 and < 11,000	>= BI	
		< 5,000	>= 5,000	
June - November	Zones 1,2, and 3	>= 24,000	>= 16,000	Up to 100% BI > 16,000
		>= 8,000 and < 24,000	>= 8,000 + 50% BI > 8,000	Up to 50% BI > 8,000
		>= 5,000 and < 8,000	>= BI	
		< 5,000	>= 5,000	
December - February	Zones 1,2, and 3	>= 5,000	>= 5,000 (Store all BI > 5,000)	Up to 100% BI > 5,000
		< 5,000	>= 5,000	
At all times	Zone 4	NA	>= 5,000	Up to 100% BI > 5,000
At all times	Drought Zone	NA	>= 4,500[2]	Up to 100% BI > 4,500

[1] Consistent with safety requirements, flood control purposes, and equipment capabilities.
[2] Once composite storage falls below the top of the Drought Zone ramp down to 4,500 cfs will occur at a rate of 0.25 ft/day drop.

Figure 3. Spawning Season Comparison

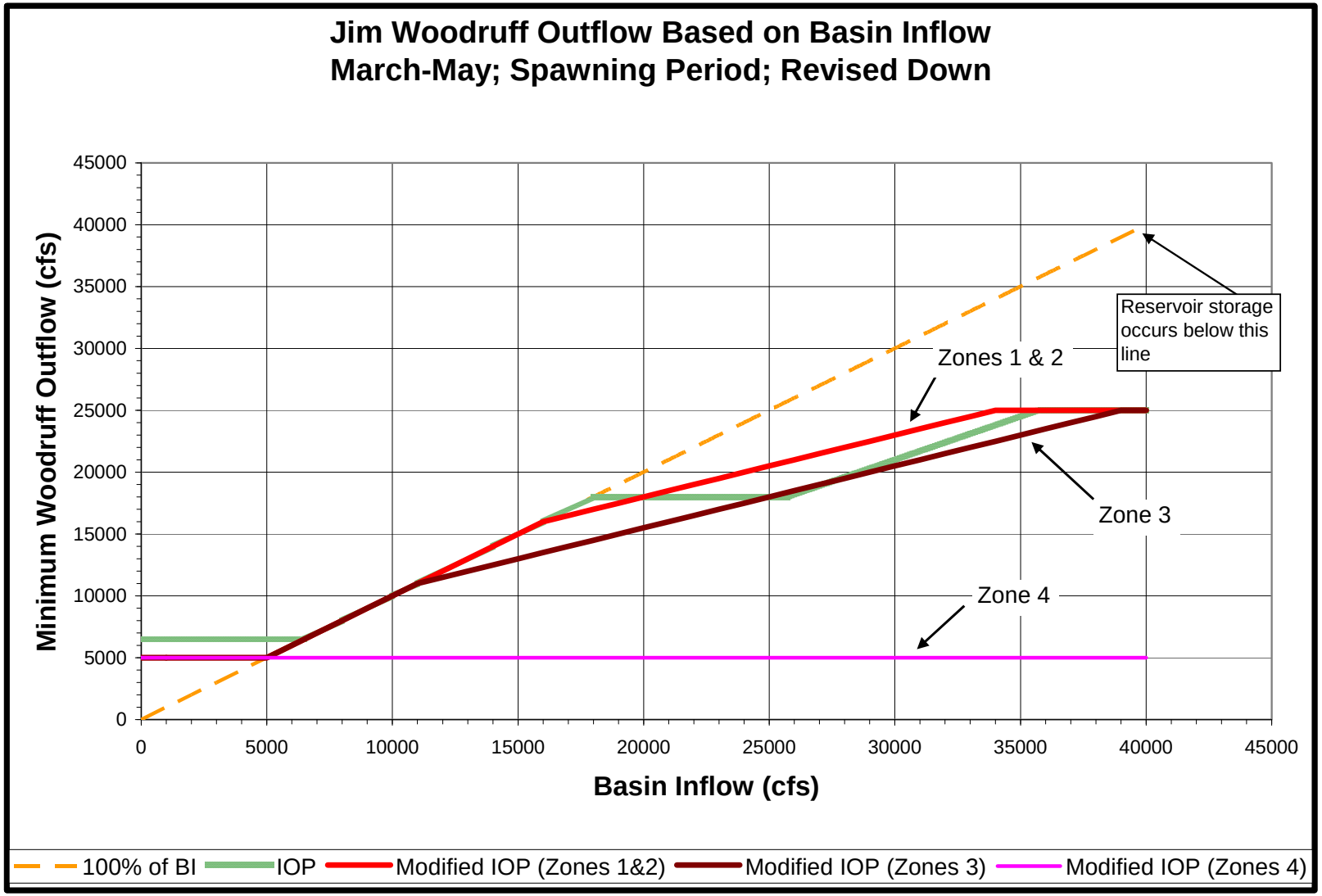


Figure 4. Non-Spawning Season Comparison

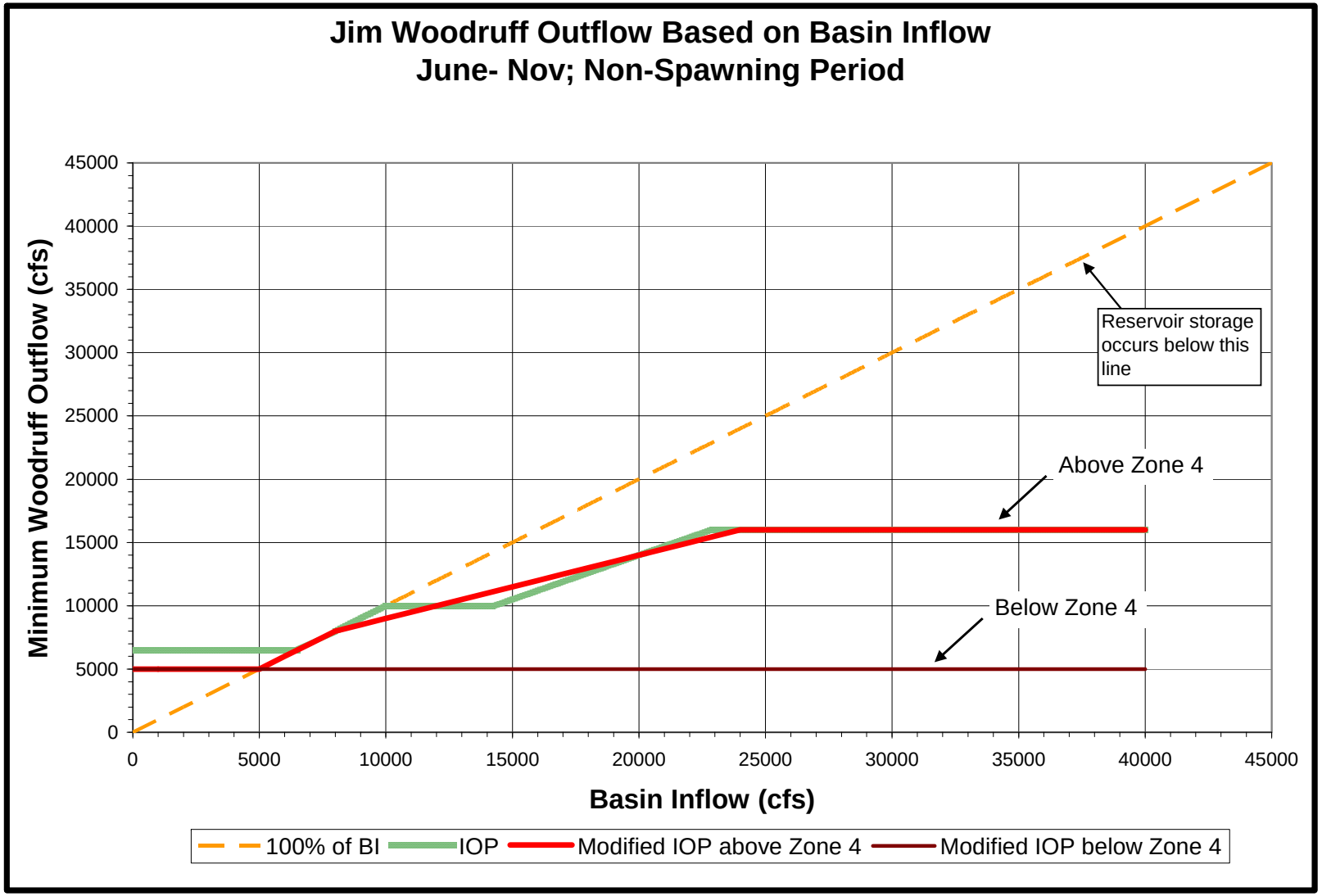
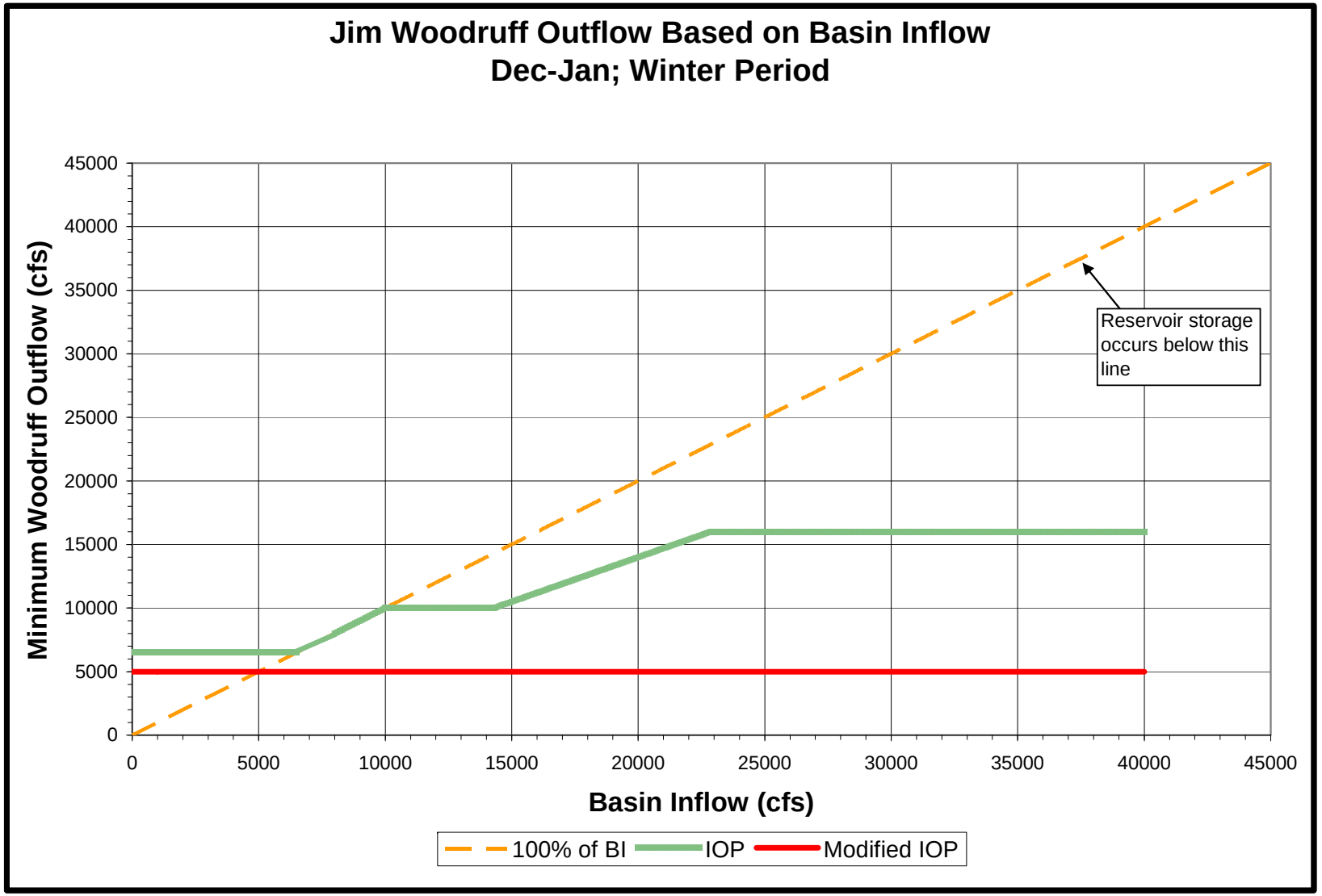


Figure 5. Winter Season Comparison



Per RPM3 of the 2006 BO, the current IOP includes a higher minimum flow provision (formerly termed "drought provision") that identifies conditions where a desired minimum flow (6,500 cfs) would be maintained, and a "trigger" to determine those conditions that would require a minimum flow (5,000 cfs) as opposed to the desired minimum flow. The recommended plan does not include this higher minimum flow provision. We believe incorporation of additional basin inflow thresholds for the spawning and non-spawning seasons as well as composite storage thresholds meets the intent of the higher flow provision.

Like the current IOP, the flow rates included in Table 1 prescribe minimum, and not target, releases for Jim Woodruff Dam. During a given month and basin inflow rate, releases greater than the Table 1 minimum releases may occur consistent with the maximum fall rate schedule, described below, or as needed to achieve other project purposes, such as hydropower or flood control.

Maximum Fall Rate: Fall rate, also called down-ramping rate, is the vertical drop in river stage (water surface elevation) that occurs over a given period. The fall rates are expressed in units of feet per day (ft/day), and are measured at the Chattahoochee gage as the difference between the daily average river stage of consecutive calendar days. Rise rates (*e.g.*, today's average river stage is higher than yesterday's) are not addressed. The recommended plan does not change the maximum fall rate schedule (Table 2) prescribed by the current IOP other than to suspend it when composite storage is in Zone 4 and the drought contingency operation described below is implemented. Unless otherwise noted, fall rates under the drought contingency operation would be managed to match the fall rate of the basin inflow. Also, the recommended plan does not change the use of volumetric balancing as described in the May 16, 2007, letter to USFWS, which is intended to prevent a substantial drawdown of storage due to gradual down ramping while following declining basin inflow.

Drought Contingency Operations: The recommended plan incorporates a drought contingency operation (referred to as drought plan) that does not exist in the current IOP. The drought plan is similar to the EDO in that it specifies a minimum release from Jim Woodruff Dam and temporarily suspends the other minimum release and maximum fall rate provisions until composite storage within the basin is replenished to a level that can support them. The minimum discharge is determined in relation to composite storage and not average basin inflow under the drought plan. The drought plan is "triggered" when composite storage falls below the bottom of Zone 3 into Zone 4. At that time all the composite storage Zone 1-3 provisions (seasonal storage limitations, maximum fall rate schedule, minimum flow thresholds, and volumetric balancing accounting) are suspended and management decisions are based on the provisions of the drought plan. The drought plan includes a temporary waiver from the existing water control plan to allow temporary storage above the winter pool rule curve at the Walter F. George and West Point projects if the opportunity presents itself and/or begin spring refill operations at an earlier date in order to provide additional conservation storage for future needs as well as provide for a minimum releases less than 5,000 cfs from Jim Woodruff Dam.

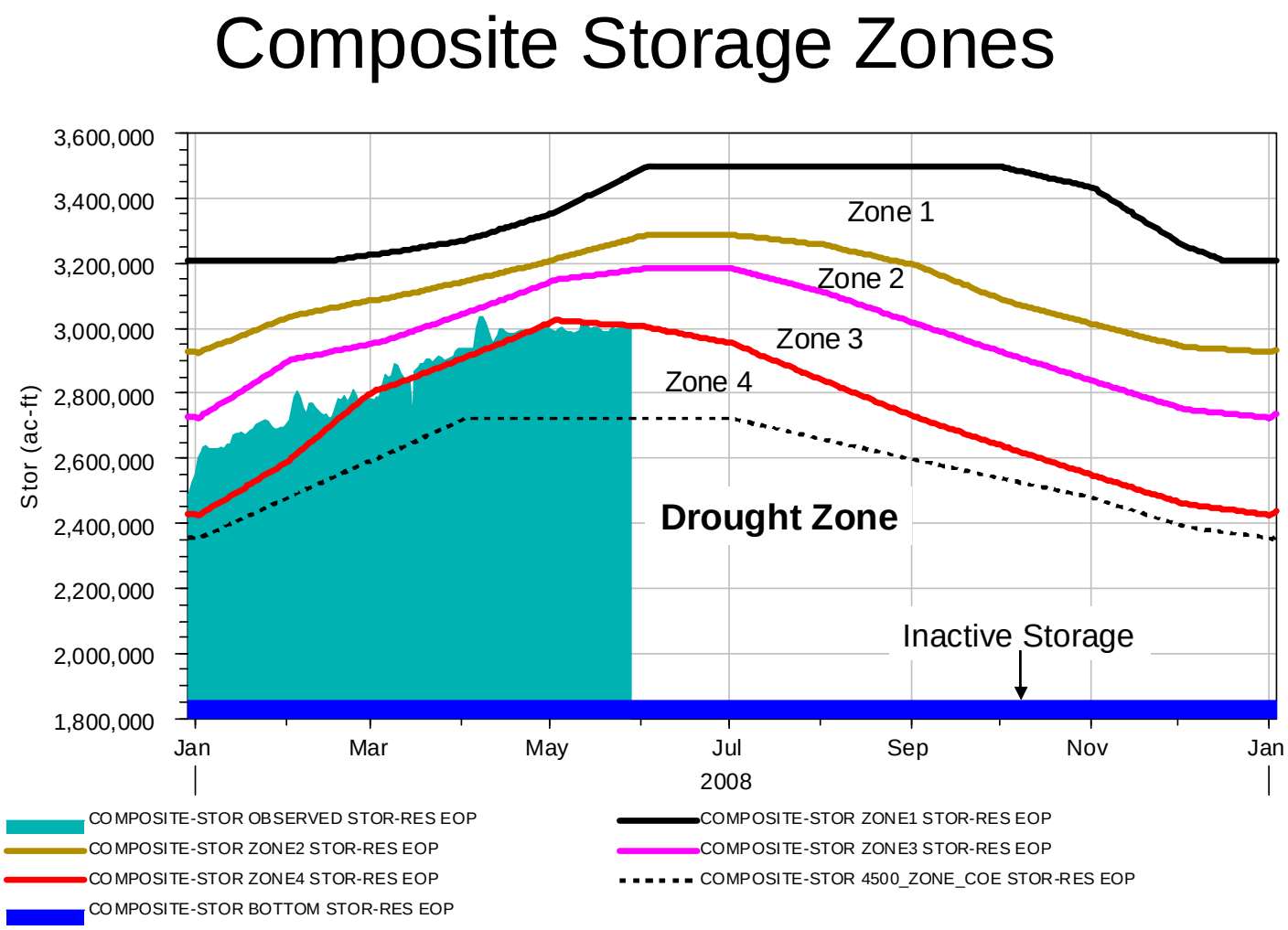
Table 2. Recommended plan Modified IOP Maximum Fall Rate Schedule Composite Storage Zones 1,2, and 3*	
Release Range (cfs)	Maximum Fall Rate (ft/day), measured at Chattahoochee gage
> 30,000**	No ramping restriction***
> 20,000 and <= 30,000*	1.0 to 2.0
Exceeds Powerhouse Capacity (~ 16,000) and <= 20,000*	0.5 to 1.0
Within Powerhouse Capacity and > 8,000*	0.25 to 0.5
Within Powerhouse Capacity and <= 8,000*	0.25 or less

*Maximum fall rate schedule is suspended in Composite Zone 4
**Consistent with safety requirements, flood control purposes, and equipment capabilities.
***For flows greater than 30,000 cfs, it is not reasonable and prudent to attempt to control down ramping rate, and no ramping rate is required.

The drought plan prescribes two minimum releases based on composite storage in Zone 4 and an additional zone referred to as the Drought Zone (Figure 6). The Drought Zone delineates a volume of water roughly equivalent to the inactive storage in lakes Lanier, West Point and Walter F. George plus Zone 4 storage in Lake Lanier. The Drought Zone line has been adjusted to include a smaller volume of water at the beginning and end of the calendar year. When the composite storage is within Zone 4 and above the Drought Zone, the minimum release from Jim Woodruff Dam is 5,000 cfs and all basin inflow above 5,000 cfs that is capable of being stored may be stored. Once the composite storage falls below the Drought Zone, the minimum release from Jim Woodruff Dam is 4,500 cfs and all basin inflow above 4,500 cfs that is capable of being stored may be stored. When transitioning from a minimum release of 5,000 to 4,500 cfs, fall rates will be limited to a 0.25 ft/day drop. The 4,500 cfs minimum release is maintained until composite storage returns to a level above the top of the Drought Zone, at which time the 5,000 cfs minimum release is re-instated. The drought plan provisions remain in place until conditions improve such that the composite storage reaches a level above the top of Zone 3 (i.e., within Zone 2). At that time, the temporary drought plan provisions are suspended, and all the other provisions are re-instated. During the drought contingency operations a monthly monitoring plan that tracks composite storage in order to determine water management operations (the first day of each month will represent a decision point) will be implemented to determine which operational triggers are applied. In addition, recent climatic and hydrological conditions experienced and meteorological forecasts will be used when determining the set of operations to utilize in the upcoming month.

Although the drought plan provides for flows lower than 5,000 cfs in the river, incorporation of provisions that allow for reduced flows during the refill period when system storage is lower and storage conservation measures when composite storage is in Zone 4 should result in fewer occasions when these low flows are triggered or in occasions where storage shortages result in flows less than 5,000 cfs.

Figure 6. Composite Storage Zones



4. ALTERNATIVES TO THE RECOMMENDED PLAN:

a. "No Action" - The Council on Environmental Quality (CEQ) regulations require analysis of the "no action" alternative. (40 C.F.R. § 1502.14). Based on the nature of the proposed action, "no action" represents "no change" from the current management direction or level of management intensity. This alternative would represent the current IOP water control operations at Jim Woodruff Dam (i.e., implementing the provisions of the IOP as described in the 23 March 2007 letter to USFWS since the EDO incidental take statement expires on June 1, 2008). This alternative is not feasible given the impact the drought has had and continues to have on the composite storage. Composite storage in the basin has not recovered to a level capable of supporting the current IOP and implementation of the current IOP would further limit recovery potential. Although, conditions within the basin have improved, much of the ACF basin is still experiencing drought conditions ranging from abnormally dry to severe drought (U.S. Drought Monitor, May 27, 2008). The period of June through December is the most critical period during a dry year. This generally represents the period where significant amounts of storage are required to augment the basin inflow to meet the 5,000 cfs minimum flow. Our analysis indicates this critical period provides the maximum opportunity to conserve storage (not refill) during a severe drought. An opportunity to reduce discharges below the 5,000 cfs minimum during the critical period is necessary. The "no action" alternative does not provide sufficient opportunity to conserve storage until basin inflows increase to a level where storage recovery can begin. Furthermore, extended periods with composite conservation storage in Zone 4 (the current level) and especially those with composite conservation storage levels significantly lower than the top of Zone 4 greatly limit our ability to respond to drought conditions as severe as and more severe than are currently occurring. Previous modeling conducted for the EDO impacts analysis demonstrated that the "no action" alternative rapidly depleted the remaining composite conservation storage of the system under an extreme drought hydrology and resulted in near depletion of the composite conservation storage under less severe drought conditions. This alternative was deemed not a fair balance between providing more opportunities to conserve storage for future augmentation flows and continued flow support to threatened and endangered species and the multiple project purposes in the basin. Therefore, additional alternatives were considered.

b. Lower Drought Zone Trigger – This alternative represents the proposed modifications to the current IOP with the exception of a lower Drought Zone trigger. The lower Drought Zone trigger to allow discharges less than 5,000 cfs does not provide sufficient opportunity to conserve storage until system storage has been considerably compromised. Therefore, additional alternatives were considered.

c. Incorporate EDO into Current IOP – This alternative consists of incorporating the provisions of the temporary EDO modifications into the current IOP as a drought contingency plan. Although, this alternative does address one of the issues identified for the IOP, the need for some form of drought plan, it does not address the need to provide additional opportunities to conserve storage as we enter and exit drought

conditions. Furthermore, this alternative would result in an increase in the number of days that flows were less than 5,000 cfs as compared to the recommended plan since the EDO provides for releases as low as 4,750 cfs when composite storage is below the top of Zone 4. Therefore, this alternative was not carried forward for further consideration.

d. Continue EDO operations – This alternative would include continuing to operate under the provisions of the EDO. The ESA authorizations for incidental take for the EDO plan expire on June 1, 2008. Without additional USFWS authorization, reductions in minimum discharges to the Apalachicola River below 5,000 cfs are not authorized. The current IOP does not include the EDO or any other extreme drought contingency plan. Since we are still experiencing drought conditions throughout much of the ACF basin and in light of the current composite storage level (Zone 4) and the more restrictive provisions of the current IOP regarding storage conservation, we determined that the system had not recovered to a level capable of supporting the current IOP. During informal consultation with USFWS regarding operations after June 1, 2008 it was agreed that additional modifications to the IOP or EDO that reduced the magnitude and duration of flows less than 5,000 cfs in the Apalachicola River should be considered in order to minimize impacts to listed species while still supporting other authorized project purposes in the basin. Therefore, this alternative was not carried forward for further consideration.

5. ENVIRONMENTAL IMPACTS OF THE RECOMMENDED PLAN:

Due to the similarity of the recommended plan to the previous IOP plans, the impacts associated with implementation of the proposed modifications are comparable to those previously described in the October 2006, March 2007, and November 2007 EAs. To determine the future environmental impacts of project operations as prescribed by a particular plan, we compared the environmental conditions expected to occur under that plan to those expected to occur if no action were taken. This is accomplished by running HEC-5 model simulations for the "no action" and recommended plans and generating graphical representations of the results for various analyses (reservoir elevations and river flows). The HEC-5 model simulates river flow and reservoir levels using a daily time series of flow data for a certain period of record.

Since the future hydrologic conditions are unknown, we have utilized synthesized flow data set from the historic period 1939 to March 2008. The flow data set includes the unimpaired flow data for the period of record (1939-2001) and the observed local flow into the four Federal reservoirs from 2002- March 2008. The synthesized flow data captures the range of hydrologic conditions from wet to dry. Inclusion of the 2006-to March 2008 hydrology also allows evaluation of the most recent exceptional drought conditions. The synthesized flow data set is the input to the HEC-5 reservoir system simulation modeling software. HEC-5 simulates the recommended plan under various hydrological conditions and generates a potential range of flows and reservoir elevations that might be experienced. A range of future environmental impacts can be assessed based on these generated river flows and reservoir elevations.

The environmental impacts associated with the recommended modifications to the current IOP fall within the range of environmental impacts previously considered and determined not to be significant. These previous impact analyses are incorporated by reference here (Section 5 of the October 2006; March 2007; and November 2007 EAs). This is due to the similarity of the recommended plan to the previous IOP plans and the provisions of the previous plans which generally included greater use of storage and fewer opportunities for conserving storage or considered river flows as low as 4,150 cfs. Thus we have determined that implementation of the recommended plan will have no significant environmental or human impacts. Appendix C contains additional HEC-5 model simulation results comparing the hydropower generation, reservoir pool elevations, and river flows of the recommended plan (termed Concept 6) to those of the current IOP (termed Concept 5) and illustrates the similarities in the resultant river flows and pool elevations. A discussion of the impacts to the basin resources is provided below.

1. Physical Impacts. As previously described, physical habitat conditions in the project area are largely determined by flow regime, and channel morphology sets the context for the flow regime. Based on the analyses described in the previous documents, the Corps has determined that the Apalachicola River appears to be in a relatively stable dynamic equilibrium. We have no ability at this time to predict specific effects on channel morphology due to the influence of the recommended plan on the flow regime.

However, it appears unlikely that erosion rates will increase over time unless there are significant changes of the flow regime or reduction in sediment supply, which do not appear likely to occur under the provisions of the recommended plan. Moreover, the influence of the recommended plan on the Apalachicola River flow regime is not expected to adversely impact stream channel stability; nor alter sand, gravel, or cobble bottom substrate. Therefore, the recommended modifications to the current IOP will not significantly impact physical habitat conditions in the project area including conditions within critical habitat areas.

2. Land Use Changes. Predominant land uses in the drainage area of the Apalachicola River in Florida include upland forests (53.5 percent), wetlands (30.5 percent), agriculture (8.4 percent), and urban/built-up (2.1 percent). The recommended plan does not change land use within the project area and will not impact State, area-wide and local plans and programs for land use in the area.

3. Historic and Archaeological Resources. As described above, implementation of the recommended plan is not expected to impact stream channel stability or alter channel substrates. Therefore, potentially adverse effects to cultural resources in the Apalachicola River, such as increased erosion, increased deposition, and increased access to historic and archaeological sites will not significantly change through implementation. Furthermore, as illustrated in Appendix C the recommended plan results in slightly higher pool elevations at the reservoirs as compared to the current IOP, which may benefit cultural resource sites located along the shorelines. Therefore, there would be no adverse effect on historic or archeological properties listed, eligible for listing in the National Register of Historic Places, or otherwise of historical or archaeological value.

4. Fisheries. The recommended plan does not limit our ability to comply with the Division Regulation (DR) 1130-2-16 and draft Corps Mobile District Standard Operating Procedure (CESAM SOP) 1130-2-9 regarding project operations in support of reservoir fish management. The goal of the SOP is to manage the reservoir conditions such that they are relatively stable or rising for a minimum 4-6 week period within the principal fish spawning period for each project site; while also providing for relatively stable or gradually declining Apalachicola River stages for a minimum designated period (Table 3). Generally stable or gradually declining river stages are defined as ramping down of ½ foot per day or less. However, the SOP recognizes that droughts and floods within the basin present specific water management challenges that may limit our ability to meet both the reservoir and river spawning provisions. All of the previous analyses demonstrated that the 4-6 week goal for holding steady or rising levels at the reservoirs and steady or declining river levels can be met most of the time. In fact, throughout the implementation of the IOP, the SOP goals have been met. The 2008 fish spawn operations occurred while the EDO was in place. The 2008 fish spawning period evaluation is currently ongoing, but preliminary analysis suggests that project operations in support of reservoir fish management successfully complied with the SOP. However, preliminary analysis suggests that Apalachicola River flows may not have conformed to the ½ foot per day or less ramp down rate for a minimum 4 week period. This is due to EDO provisions that suspend the maximum fall rate schedule and instead limit fall rates

to that of the basin inflow. Generally, fall rates can be managed in a way that meets the EDO and SOP guidance without the use of valuable storage. However, hydrological conditions can result in brief periods when the ½ foot per day ramp down rate of the SOP is not met in order to conserve storage during drought plan operations. The recommended plan includes a drought contingency plan that also allows fall rates greater than ½ foot per day if the basin inflow fall rate exceeds this threshold. However, the SOP recognizes that droughts may limit our ability to meet the reservoir and/or river spawning provisions. The HEC-5 simulated April and May monthly flow durations as measured at the Chattahoochee gage for the recommended plan and the current IOP are nearly identical with relatively minor differences when flows are less than 25,000 cfs. The recommended plan provides slightly higher flows between 18,000 and 25,000 cfs. The recommended plan results in flows lower than the current IOP when flows are less than 18,000 cfs (Appendix C). Flows below approximately 15,000 cfs and 10,000 cfs during April and May respectively would be indicative of drought conditions. Therefore, implementation of the recommended plan will not result in a significant impact to fisheries in the reservoirs and the Apalachicola River.

Table 3. Project specific principal fish spawning period for operational considerations.

Project	Fish Spawn Period
Lake Lanier	01 Apr – 01 Jun
West Point	01 Apr – 01 Jun
Walter F. George	15 Mar – 15 May
Lake Seminole	01 Mar – 01 May
Apalachicola River	01 Apr – 01 Jun

5. Essential Fish Habitat (EFH). The impacts of the recommended plan to hydrology and water quality fall within those previously considered and determined to not be significant. The HEC-5 simulated Apalachicola River annual flow duration, as measured at the Chattahoochee gage, for the recommended plan and the current IOP are nearly identical and relatively minor differences are limited to flows less than 12,000 cfs (Appendix C). The recommended plan provides for slightly lower river flows between 5,000 and 11,000 cfs. However, flow differences of this magnitude are not likely to significantly affect salinity levels in the Bay. In the 2008 BO, the USFWS determined that implementation of the recommended plan is not anticipated to result in changes in salinity or estuarine habitat. If drought conditions continue or return in the future, there may be temporary salinity increases in the Apalachicola Bay but they will be attributable to the drought conditions not implementation of the recommended plan. The recommended plan includes provisions to maintain a minimum flow less than 5,000 cfs (the minimum in the current IOP). However, the recommended plan will result in less low flow impacts than the EDO since the drought plan incorporated into it maintains a minimum flow of 4,500 cfs rather than the 4,150 cfs minimum flow evaluated for the EDO. The EFH impacts of the recommended plan fall within those previously

considered and determined to not be significant. Therefore, the EFH in the Apalachicola Bay system will not be significantly impacted by the recommended plan.

6. Wildlife. The impacts of the recommended plan to hydrology and water quality fall within those previously considered and determined to not be significant. Therefore, aquatic and riparian habitats supporting wildlife species in the Apalachicola River and Bay system and aquatic and terrestrial wildlife resources occurring in the project area will not be significantly impacted by the recommended plan.

7. Threatened and Endangered Species: On June 1, 2008, the USFWS issued a BO on the recommended modifications to the IOP at Jim Woodruff Dam, and the associated releases to the Apalachicola River, and its effects on the Gulf sturgeon, fat threeridge mussel, purple bankclimber mussel and Chipola slabshell mussel; and habitat designated as critical habitat for the Gulf sturgeon and the mussels, pursuant to Section 7 of the ESA. The USFWS determined that implementation of the recommended plan, including its provision to reduce minimum releases from Woodruff Dam to as low as 4,500 cfs:

a) will not jeopardize the continued existence of the Gulf sturgeon, fat threeridge, purple bankclimber, and Chipola slabshell; and
b) will not destroy or adversely modify designated critical habitat for the Gulf sturgeon, fat threeridge, purple bankclimber, and Chipola slabshell.

The USFWS determined that the recommended plan could result in incidental take of Gulf sturgeon, fat threeridge, Chipola slabshell and purple bankclimber. Take of Gulf sturgeon due to the recommended plan may occur when project operations result in rapid declining stages, especially during drought contingency operations during the sturgeon spawning period. The form of this take is mortality of fertilized eggs or larvae that results from habitat modification leading to oxygen stress, temperature stress, and/or increased sedimentation. The take may occur in hard-bottom microhabitats that become shallow or exposed when releases from Woodruff Dam are less than 40,000 cfs and decline more than 8 feet in less than 14 days during the months of March, April, and May. Due to the complexities of the analysis of fall rates, the anomalies in the HEC-5 model results with respect to the fall rates of Woodruff releases, and the fact that take would not occur until the spring of 2009, at the earliest, the USFWS has not yet provided a direct or surrogate measure of anticipated take of this form. However, the USFWS will work with the Corps to produce a surrogate measure of anticipated take by January 31, 2009.

Take of listed mussel species due to the recommended plan may occur when conditions are such that the Corps reduces the releases from Woodruff Dam to 4,500 cfs. The form of this take is mortality that results from habitat modification leading to oxygen stress, temperature stress, and/or increased predation. The take may occur in moderately depositional microhabitats that become exposed or isolated from flowing water when releases from Woodruff Dam are less than 5,000 cfs. The USFWS determined that for a flow reduction to 4,500 cfs, a maximum of 200 purple bankclimbers may be exposed on

the rock shoal at RM105 and at a few locations elsewhere in the Action Area; and a maximum of 100 Chipola slabshells may be exposed in the Chipola River downstream of the Chipola Cutoff; and a maximum of 21,000 fat threeridge (9% of the population) may be exposed in the Apalachicola River, Chipola Cutoff, and Chipola River downstream of the Chipola Cutoff.

In the June 1, 2008 BO, the USFWS determined that the level of anticipated take for reducing the minimum release from Jim Woodruff Dam to 4,500 cfs once in the foreseeable future would not result in jeopardy to the species or destruction or adverse modification of designated critical habitat. Therefore, the threatened and endangered species occurring in the project area will not be significantly impacted by the recommended plan.

8 Recreation. Implementation of the recommended plan will not significantly impact recreational opportunities at the upstream reservoirs. The model simulation results provided in Appendix C demonstrate that pool elevations at Lake Lanier, West Point, Walter F. George, and Lake Seminole will be equivalent to or higher than those of the current IOP. The recommended plan is also consistent with support of reservoir fish spawning and Apalachicola fish spawn during spring months, and could benefit sport fish accordingly.

The model simulation results provided in Appendix C demonstrate that Apalachicola River flows (measured at the Chattahoochee gage) are almost identical for the recommended plan and no action. The recommended plan results in slightly lower river flows than the “no action” plan when flows are less than 10,000 cfs. However, recreational impacts when flows are in this range are generally attributable to dry conditions and not relatively minor differences in releases. Impacts to any component of the National Wild and Scenic Rivers System; and any park, parklands, ecologically critical areas or other areas of ecological, recreational, scenic or aesthetic importance are similar to those considered in the previous impact analysis and determined not to be significant. Implementation of the recommended plan will not significantly impact recreational opportunities on the Apalachicola River or Apalachicola Bay.

9. Hydrology: As discussed above, and illustrated in Appendix C implementation of the recommended plan does not result in significantly different reservoir levels or river flows than the “no action” plan. Furthermore, the recommended plan provides for maintenance of a minimum flow of 4,500 cfs as opposed to the 4,150 cfs minimum flow previously evaluated for the EDO and determined to not significantly impact the hydrology of the Apalachicola River and bay system. Therefore, the implementation of the recommended plan will not significantly impact the hydrology of the Apalachicola River and bay system, or the upstream reservoirs.

10. Water Quality: Buford, West Point, and Jim Woodruff dams all provide minimum continuous flow releases to meet State water quality commitments. Walter F. George provides occasional releases, as needed, to maintain acceptable DO values below the dam. Occasional special releases are also made at Buford to insure adequate DO and water temperature at the Buford Fish Hatchery located downstream of the dam.

Implementation of the recommended plan will not affect water quality releases at these reservoirs. Implementation of the recommended plan will not result in reservoir levels that limit the ability to support water quality releases. Releases from the upstream reservoirs are able to meet the 750 cfs minimum flow on the Chattahoochee River near Peachtree Creek and provide adequate flows for the estimated assimilative capacity needs on the Chattahoochee River near Columbus, Georgia. The HEC-5 model simulation results provided in Appendix C illustrate that flows at Atlanta, Columbus, and George Andrews are essentially the same under both the recommended plan and the "no action". We lack sufficient information to determine if the minimum flows prescribed by the recommended plan or the "no action" plan would alter baseline water quality of the action area. However, the Apalachicola River flows resulting from both plans are consistent with those previously determined to not significantly impact water quality.

11. Aesthetics: The recommended plan will not permanently affect the aesthetics in the project area. During periods of drought, the Federal reservoirs could experience sustained low water conditions and still be in low water conditions during the prime recreational season. In this situation, shoreline and bottom areas could continue to be exposed, boat docks could continue to be exposed, and property values along the lake shore areas could be affected. However this impact is attributable to drought conditions, and not the recommended plan, which should mitigate some of these anticipated drought impacts. The impacts of the recommended plan to aesthetics are consistent with those previously considered and determined to not be significant.

12. Water Supply: Implementation of the recommended plan will not affect water supply for M&I use at the upstream reservoirs or the Chattahoochee and Apalachicola Rivers. The recommended plan will not result in reservoir levels or river levels that limit the ability to support water supply, and the recommended plan includes provisions to conserve storage as much as possible during drought conditions in order to support water supply, water quality, and fish and wildlife needs. The impacts of the recommended plan to water supply are consistent with those previously considered and determined to not be significant.

13. Flood Control. Implementation of the recommended plan will not significantly affect flood control operations at the upstream reservoirs. The purpose of the recommended modifications to the current IOP, in part, is to replenish storage in the Federal reservoirs to support authorized project purposes and threatened and endangered species needs in the Apalachicola River and bay system. While operating under the drought plan provisions of the recommended plan, a temporary waiver from the existing water control plan would also include provisions to allow temporary storage above the winter pool rule curve at the Walter F. George and West Point projects if the opportunity presents itself and/or begin spring refill operations at an earlier date in order to provide additional conservation storage for future needs. However, the recommended plan will be implemented in a manner that would not result in reservoir levels that limit the ability to manage flood waters. Therefore, the implementation of the recommended plan will not significantly impact flood control. Furthermore, the reservoir levels and river flows

simulated under the recommended plan are consistent with those previously considered and determined to not result in significant impacts to flood control.

14. Navigation. The impacts of the recommended plan to navigation are consistent with those previously considered and determined to not be significant. The lack of dredging and routine maintenance has led to inadequate depths in the Apalachicola River navigation channel, and commercial navigation has only been possible on a seasonal basis when flows in the river are naturally high, with flow support for navigation suspended during drier times of the year. On a case-by-case basis, limited releases for navigation have been made for special shipments when a determination can be made that other project purposes will not be significantly impacted and any fluctuations in reservoir levels or river stages would be minimal. The recommended plan does not limit our ability to support navigation as compared to the "no action".

15 Hydropower. The HEC-5 model simulation results provided in Appendix C illustrate that annual and monthly generation at the Federal reservoirs are essentially the same under both the recommended plan and the "no action". The impacts of the recommended plan to hydropower generation are consistent with those previously considered and determined to not be significant. Therefore the implementation of the recommended plan will not significantly impact hydropower generation at Jim Woodruff or the upstream dams as compared to "no action".

16 Floodplain/Wetlands. The amount and duration of inundated floodplain habitat is determined by the flow in the rivers. As described above, the simulated Apalachicola River flows under both the recommended plan and the "no action" plan are very similar. Furthermore, the simulated river flows are much higher than those evaluated for the EDO and determined to not result in significant impacts. The "no action" plan provides for slightly higher flows and consequently slightly more floodplain inundation than the recommended plan when flows are less than 11,000 cfs. However, under these dry hydrologic conditions floodplain connectivity is minimal with or without the implementation of the recommended plan. Therefore the implementation of the recommended plan will not significantly impact floodplain habitat as compared to the "no action" Alternative.

17. Prime and Unique Farmland: The recommended plan will have no effect on prime farmlands or unique agricultural lands.

18. Environmental Justice: Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (11 February 1994) requires that Federal agencies conduct their programs, policies, and activities that substantially affect human health or the environment in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under such programs, policies, and activities because of their race, color, or national origin.

The recommended plan is not designed to create a benefit for any group or individual. The recommended plan does not create disproportionately high or adverse human health or environmental impacts on any low-income populations of the surrounding area. Review and evaluation of the recommended plan have not disclosed the existence of any identifiable minority or low-income communities that would be adversely affected by implementation.

19. Protection of Children: The EO 13045, Protection of Children from Environmental Health Risks and Safety Risks (21 April 1997), recognizes a growing body of scientific knowledge that demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because children's bodily systems are not fully developed; because children eat, drink, and breathe more in proportion to their body weight; because their behavior patterns may make them more susceptible to accidents. Based on these factors, the President directed each Federal agency to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. The President also directed each Federal agency to ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

Implementation of the recommended plan does not involve activities that would pose any disproportionate environmental health risk or safety risk to children.

20. Cumulative Impacts. The CEQ regulations define cumulative impacts as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action." 40 C.F.R. § 1508.7. Actions considered in the cumulative impacts analysis include implementation of the recommended plan and other Federal, State, Tribal, local or private actions that impact the resources affected by the recommended plan. The resources affected by the recommended plan are described above and are generally limited to habitat conditions and species closely linked to the flow regime in the Apalachicola River.

Within the project area, various past Federal, State, and private actions have impacted the ACF basin and Apalachicola River habitat and natural flow regime including construction of the Corps' dams, urban development, agricultural activities, navigation channel maintenance dredging and disposal, water withdrawals, and small impoundments. Urban development and agricultural activities have adversely affected water quality and riverine and floodplain habitat. The associated water withdrawals have also impacted the flow regime. The five Corps' dams continue to affect the Apalachicola River by trapping sediment in reservoirs that would otherwise move as bed load through the system. The interruption of this bed load movement and past navigation channel maintenance dredging and disposal activities have contributed to the altered channel morphology in the project area. Channel morphology sets the context for the flow regime. However, the addition of 3.7 million acre ft of reservoir storage (including inactive storage) during the post-West Point period does not appear to have altered the

overall relationship between precipitation in the Chattahoochee and Flint Basins and discharge into the Apalachicola Basin (USFWS 2008). Analysis of the historic annual average discharge (1929-1955 pre-Lanier period), current annual average discharge (1975-2007 post-West Point period), and the recommended plan annual average discharge suggest that operations under the recommended plan will not significantly alter the Apalachicola River flow regime. The annual average discharge for the Apalachicola River during the pre-Lanier period and the post-West Point period suggests that average annual flow prior to the construction of dams in the ACF basin is comparable to the average annual flow currently experienced. Analysis of the annual average discharge under the recommended plan indicates that flows are comparable as well. Therefore, implementation of the recommended plan should not significantly contribute to the cumulative impacts affecting riverine habitat and flow regime in the Apalachicola River or habitat in Apalachicola Bay.

Adverse effects to riverine habitat from continued urbanization and agricultural activities in the ACF basin are reasonably certain to occur. However, state and local governments have regulations in place to minimize these effects, including regulations regarding construction best management practices, storm water control, and treatment of wastewater.

Additionally, an increase in net consumptive depletions due to water supply are reasonably certain to occur based on increased M&I demands in the ACF basin (particularly in the upper basin). In order to assess the potential magnitude of these increases we developed an M&I projection for 2017 (10 year projection) based on a trend analysis of M&I water use since the year 2000 (data provided by the Georgia and Alabama water resource agencies). In order to capture regional growth trends, rather than applying uniform growth throughout the basin, the water use data was summed by HEC-5 model nodes and a separate trend analysis was computed for each model node by developing formulas for the individual model reaches. The analysis suggests an approximately 25% increase in Net M&I Water Use basin wide, with the largest increases occurring on the Flint River near Griffin, GA and Albany, GA and from Lake Lanier, West Point Lake and Columbus, GA area on the Chattahoochee side. When combined with dry or drought conditions, this increase in M&I water use could result in lower reservoir elevations and reduced flows on the Apalachicola River. During extended severe drought conditions, like those experienced in 2006 and 2007, the recommended plan ameliorates these impacts compared to the “no action” by incorporating a drought plan that conserves storage to support a minimum flow of at least 4,500 cfs in the Apalachicola River even when basin inflow is much less. The “no action” plan could result in depletion of conservation storage and flows considerably lower than 4,500 cfs under the same circumstances.

The Georgia Environmental Protection Division has determined that the most acres in the basin for which irrigation is economically feasible are already irrigated, and that agricultural demand has likely “plateaued” at close to the year 2000 demands. However, increases in the amount of water applied per acre would occur if the current crops are converted to more water intensive crops. Implementation of the recommended plan

would not contribute to cumulative impacts affecting resources on the Flint River since there are no Corps projects controlling water releases in this system. However, increases in consumptive depletions for agriculture could adversely affect habitat in the Apalachicola River and Apalachicola Bay by further altering the natural flow regime.

Due to the similarity of the recommended plan to the previous IOP plans, the cumulative impacts associated with implementation of the proposed modifications are comparable to those previously described in the October 2006, March 2007, and November 2007 EAs and determined to not be significant. Implementation of the recommended plan could include potential beneficial cumulative impacts compared to the "no action" plan, as it provides for additional opportunities to store or conserve water, which might be essential for these resources during periods of severe drought. Therefore, implementation of the recommended plan should not significantly contribute to the cumulative impacts affecting the ACF River Basin resources described above.

6. ANY IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS WHICH WOULD BE INVOLVED SHOULD THE RECOMMENDED PLAN BE IMPLEMENTED:

Any irreversible or irretrievable commitments of resources involved in the recommended plan have been considered and are either unanticipated at this time, or have been considered and determined to present only minor impacts.

7. ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED:

Any adverse environmental effects, which cannot be avoided during implementation of the recommended project, are expected to be minor both individually and cumulatively. Unavoidable impacts to threatened and endangered species while operating for releases less than 5,000 cfs will be minimal and short term so beneficial augmentation flows higher than basin inflows can be sustained over the long term.

8. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY:

The proposed project constitutes a short-term use of man's environment. The proposed action includes modifications to an interim plan which is a component of the existing water control plan for the ACF basin and specifically Jim Woodruff Dam. It is anticipated that it will be implemented until such time as the existing water control plan is revised or updated and a new Water Control Plan is completed. At that time, additional public coordination, consultation, and NEPA documentation would be prepared for the new water control plan, and elements of the recommended plan could change at that time. Also, in the event of additional information or changed conditions, consultation would be re-initiated with the USFWS to determine if any additional changes to the recommended plan would be necessary. At this time we do not have an estimate of when that will occur. As noted in the 2008 BO completing formal Section 7 consultation, operations

under the recommended plan are not expected to result in any permanent changes or impacts to listed species, critical habitat for listed species or other project purposes or resources within the basin. The conditions of the BO for the recommended plan also include monitoring and adaptive management, so adjustments could be made in the future, pursuant to additional consultation, in the event any unanticipated impacts are documented.

9. COORDINATION:

On September 20, 2007, the Corps began conducting bi-weekly Stakeholder Drought Summit Teleconferences for the ACF basin, in order to inform the stakeholders and water users within the basin of developing drought conditions in the basin, planned drought contingency operations planned by the Corps, allow the stakeholders to inform the Corps of other user needs and contingency actions being taken, and in order to provide sufficient notice to the stakeholders so their drought contingency measures can be taken. These bi-weekly teleconferences are continuing to date and continue to provide opportunities for basin stakeholders to receive status updates regarding the informal and formal consultation between the Corps and USFWS. Pertinent information relating to the Section 7 consultation has also been posted throughout the consultation process on the Mobile District website at:

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

Appendix D contains copies of coordination letters, memos, and reports received during the development of the recommended plan and associated Section 7 consultation. A brief description of these correspondences is summarized below. All comments were considered in determining whether additional adjustments to the recommended plan would be pursued and in assessing impacts of the recommended plan on other project purposes. However, it should be noted that some comments and suggestions would require changes to the existing Water Control Plan or result in otherwise avoidable adverse effects to listed species in the Apalachicola River, based on the evaluation criteria used in the BO.

By letter to the Corps dated April 14, 2008, the Atlanta Regional Commission (ARC), on behalf of the North Georgia Water Supply Providers, provided comments for consideration in formulating modifications to the IOP or EDO.

By letter to the USFWS, on April 15, 2008, the Corps requested the initiation of formal Section 7 consultation pursuant to the ESA, on the proposed modifications to the IOP.

By letter to the Corps dated April 18, 2008, the USFWS expressed concern about recent stage declines in the Apalachicola River and a potential increased risk of possible adverse effects to Gulf sturgeon eggs and larvae under the provisions of the EDO and similar provisions proposed in the modifications to the IOP as described in the April 15, 2008 request to initiate formal Section 7 consultation.

By letter to the Corps dated April 22, 2008, Alabama Governor Riley expressed opposition to the proposed modifications to the IOP as described in the April 15, 2008 request to initiate formal Section 7 consultation. In the letter Governor Riley states that the revised IOP is fundamentally incompatible with legal requirements, imperils downstream interests in Alabama, ignores navigation, and could cause significant problems at the Farley Nuclear Plant and other industry in Alabama.

By letter to the USFWS dated April 24, 2008, the Corps provided clarification of the circumstances that resulted in the recent stage decline; assurances that continuing operations would adhere to the fall rate analyzed and approved in the BO for the EDO; clarification on how the fall rate will be calculated and implemented; and notice that no changes to the recently submitted proposal for modifications to the IOP would be needed.

By letter to the Corps dated April 25, 2008, the City of Columbus and Columbus Water Works expressed opposition to the proposed modifications to the IOP as described in the April 15, 2008 request to initiate formal Section 7 consultation due to a lack of specified minimum instream flows at gages on the Middle Chattahoochee, including West Point, Columbus, and Walter F. George Lock & Dam.

By letter to the Corps and USFWS dated April 30, 2008, the Florida Department of Environmental Protection (FDEP) expressed opposition to the proposed modifications to the IOP as described in the April 15, 2008 request to initiate formal Section 7 consultation. In the letter FDEP states that the revised IOP does not provide a balanced operational regime that addresses the needs of Florida's ecology and economy during routine operations nor an equitable shared adversity during times of drought.

By letter to the Corps dated May 1, 2008, the Lake Lanier Association, Inc. (LLA) expressed opposition to the proposed modifications to the IOP as described in the April 15, 2008 request to initiate formal Section 7 consultation. In the letter the LLA states that the revised IOP does not positively impact Lake Lanier and that the lake needs specific consideration and management rather than inclusion with the entire ACF system.

By letter to the Corps and USFWS dated May 9, 2008, the Florida Congressional Delegation expressed opposition to the proposed modifications to the IOP as described in the April 15, 2008 request to initiate formal Section 7 consultation. In the letter the Delegation states that the revised IOP fails to consider basic hydrological terms of flow measurement and violates the authorized uses of the ACF, the 1958 Water Supply Act, recent Court Rulings, and the Coastal Zone Management Act of 1972.

By letter to the Corps and USFWS dated May 13, 2008, the Alabama Power Company (APC) provided comments regarding the proposed modifications to the IOP as described in the April 15, 2008 request to initiate formal Section 7 consultation. In the letter the APC expressed concern that the revised IOP does not specifically provide for flows and reservoir elevations required for Farley Nuclear Plant's safe and reliable operation, assumes no operations for navigation in the ACF basin, limits the refill of Federal reservoirs, and overestimates the flow needs of the Gulf sturgeon and mussels.

By letter to the Corps and USFWS dated May 13, 2008, the Franklin County (FL) Board of County Commissioners expressed agreement with the FDEP letter opposing the proposed modifications to the IOP as described in the April 15, 2008 request to initiate formal Section 7 consultation and submitted evidence of damage to harvestable species in Franklin County.

By letter to the Corps and USFWS dated May 15, 2008, the State of Georgia provided comments on the proposed modifications to the IOP as described in the April 15, 2008 request to initiate formal Section 7 consultation. In the letter Georgia states that implementation of the revised IOP will result in releases from Federal reservoirs in excess of those necessary for federally protected species in the Apalachicola River and deplete storage necessary for vital needs, including species protection, in the event of significant droughts.

By letter to the USFWS dated May 15, 2008, FDEP forwarded a letter from the Northwest Florida Water Management District (NWFWMD) addressing a series of flaws in the Corps' discretionary operations under the IOP and revised IOP. In the letter FDEP requests that this letter be considered a supplement to the April 30, 2008 FDEP letter.

By letter to the USFWS dated May 20, 2008, the Apalachicola Riverkeeper expressed opposition to the proposed modifications to the IOP as described in the April 15, 2008 request to initiate formal Section 7 consultation. The letter states that the revised IOP fails to provide the flow regime required to sustain the fish and wildlife of the Apalachicola River and bay; is biased toward North Georgia water users; and conflicts with National Water Policy.

By letter to the Corps and USFWS dated May 23, 2008, the State of Georgia provided supplemental comments to its May 15, 2008 letter. The letter states that the purpose of the supplement is to respond to comments made by FDEP and several inaccurate and confusing assertions made by NWFWMD in a letter included with the May 15, 2008 letter from FDEP.

By letter to the Corps and USFWS dated May 29, 2008, the ARC, on behalf of the North Georgia Water Supply Providers, provided comments on the proposed modifications to the IOP and development of the new Water Control Plan for the ACF Basin. Regarding the IOP, the letter expresses concern over limited refill opportunities; continued use of down ramping rates and volumetric balancing; flawed drought provisions; and the effects of low lake levels at Lake Lanier on the local economy.

By letter to the USFWS dated May 30, 2008, the Florida Coastal and Ocean Coalition provided comments on the proposed modifications to the IOP. The letter states that the proposed action would adversely modify vast areas of critical habitat for federally listed species and jeopardize the existence of the Gulf sturgeon and protected mussel populations in the ACF watershed.

On June 1, 2008, the USFWS, Panama City Field Office issued a final Biological Opinion for the proposed modifications to the IOP. The BO determined there would be no jeopardy to listed species associated with the proposed action and an Incidental Take Statement for Gulf sturgeon and the listed mussel species was issued.

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