

## **Appendix D**

### **Additional Coordination Correspondence**

## Georgia Department of Natural Resources

2 Martin Luther King Jr., Drive, Suite 1152 East Tower, Atlanta, Georgia 30334

Noel Holcomb, Commissioner

Carol A. Couch, Ph.D., Director

Environmental Protection Division

(404) 656-4713

September 14, 2007

Colonel Byron Jorns  
Commander and District Engineer  
Department of the Army  
Mobile District, Corps of Engineers  
190 Saint Joseph Street  
Mobile, Alabama 36602-3630

Re: Corps ACF Operations

Dear Colonel Jorns:

Georgia continues to monitor very closely the elevations of the federal reservoirs within the Apalachicola-Chattahoochee-Flint (ACF) River Basin. The ACF Basin continues to be in a severe drought, and no relief is in sight. In fact, the drought conditions of 2006, combined with this year's, suggest that the current multi-year drought could continue for some time and be one of the worst, if not the worst, of record before conditions ultimately relent. Meanwhile, the Interim Operations Plan (IOP) that is guiding the Corps' operations in the IOP, and the Corps' releases in excess of the IOP requirements, are inhibiting refill of the federal reservoirs and drawing significantly on the water that is stored in the ACF Basin reservoirs. I am writing to update you on our modeling of the Corps' current operations and share with you the concerns that we have about the effect that those operations will have on the reservoirs within the ACF Basin.

### STATUS OF ACF RESERVOIRS

As of September 13, 2007, surface elevation at Lake Lanier is at 1060.6 feet. This is 10.4 feet below the top of conservation pool, and is in Zone 4. West Point elevation is at 624.9 feet, which is 10.1 feet lower than its top of conservation, less than an inch away from Zone 4, and only 4.9 feet away from the bottom of conservation pool. Walter F. George elevation is at 184.9 feet. It is in Zone 4 and less than a foot away from its inactive storage.

The system storage at this point is about **50.5%** of the full system capacity of 1.64 million acre-feet. During numerous days in August and September 2007, the Corps recorded negative inflows to Lake Lanier, and average August inflow to Lanier was a mere 124 cfs. This is the second lowest August monthly average inflow, and is lower

than what was recorded in the previous drought years of 1981, 1986, 1988, 1999, 2000, and 2006.

Basin Inflow (BI) for the ACF Basin system this year has been fairly similar to the extremely dry year of 2000 (Fig. 1), which was characterized by extended periods of BI being lower than 5,000 cfs and, consequently, significant draws from conservation storage to maintain the 5,000 cfs flow in the Apalachicola River at the Chattahoochee, Florida gage. So far this year, the Corps has had to augment flows significantly for approximately three months to provide a flow of 5,000 cfs at Chattahoochee, Florida. **If BI remains at the level it was in August, this augmentation will completely deplete system storage.**

#### INABILITY OF THE RESERVOIRS TO REPLENISH

We are not only concerned about the draw on storage to meet the 5,000 cfs, but also that the IOP will not allow the Corps to store water and reverse the downward trend of the federal reservoirs should conditions improve. The IOP-5 imposes strict limitations on the amount of water that the Corps can store in the ACF federal reservoirs. For example, for the months of June through February (i.e., for the remainder of this year and early next year), the IOP-5 prescribes that an amount equal to BI would have to be released from Jim Woodruff Dam when BI is less than or equal to 10,000 cfs. Even when BI is higher than 10,000 cfs but less than 23,000 cfs, only a small fraction of BI can be stored. In the summer of a drought year, BI in the magnitude of higher than 10,000 cfs is a rarity, and BI higher than 23,000 cfs is non-existent (see year 2000 BI shown in Figure 1). Thus, the no-storing policy under the IOP-5 basically means not storing any inflow during the summer and fall in a drought year.

Figure 5 illustrates the approximate amount of BI above the 5,000 cfs minimum flow requirement that would exist assuming year 2000 hydrology (see shaded area between the blue line, which reflects simulated flow at Chattahoochee, Florida that closely follows BI when BI is higher than 5,000 cfs, and the red line, which reflects 5,000 cfs). Unfortunately, under the IOP-5, little of that excess BI beyond 5,000 cfs can be stored to replenish the reservoirs, even when the basin is facing an extremely severe and prolonged drought with only half of its conservation storage left.

#### MODELING AND PROJECTION OF THE ACF RESERVOIRS

To assess the potential impact of the drought conditions and the Army Corps of Engineer's (Corps') operations of the ACF system under the Interim Operation Plan Concept 5 (IOP-5), we have simulated the system's response using year 2000 hydrological conditions. We started the simulation with reservoir elevations recorded on September 1, 2007, and assumed that hydrological conditions for the remainder of this calendar year would mimic those of September through December of 2000.

The assumptions include year 2000 municipal and industrial water demands throughout the basin, firm hydropower generation as specified in Table 1 (per Col. Peter Taylor's letter to me of June 12, 2006), Georgia's dry year agricultural water demands, an in-stream flow requirement at Atlanta, Georgia of 750 cfs, an in-stream flow requirement at

Columbus, Georgia of 1850 cfs (unless West Point elevation is lower than 621.6 feet msl, when the requirement is lowered to 1200 cfs), and in-stream flow requirement at Chattahoochee, Florida as specified by IOP-5.

Table 1. Firm Hydropower Generation Requirement at ACF Reservoirs

Reservoir Action Zones	Lanier Firm Power Generation Hours	West Point Firm Power Generation Hours	Walter F. George Firm Power Generation Hours
1	3	4	4
2	2	2	2
3	2	2	2
4	0	0	0

The results of our computer modeling of this scenario are shown in the attached Figures 2 through 4. Under the above assumptions, the elevation of Lake Lanier would continue to fall. (Note that reservoir levels have fallen further since September 1. Lake Lanier is currently within Zone 4, lower than shown in Figure 2. Thus, the Figures in fact might reflect an overly optimistic prediction.) As shown in Figure 2, the elevation of Lake Lanier would drop to approximately 1056 feet before the end of 2007. This would be the third lowest end-of-the-year elevation in Lake Lanier’s history and is 14 feet lower than the top of winter pool (15 feet lower than the summer pool level).

Elevation at West Point would follow the Zone 3 – Zone 4 divide and would be lower than 622 feet in December (see Figure 3). This is less than 2 feet from the bottom of West Point conservation pool. At Walter F. George, the elevation would reach 184.6 feet, which is about 7 inches away from the bottom of its conservation pool (see Figure 4).

By our simulation, system storage would be about 840,877 acre-feet (or 51% of system capacity) by the end of the year (which looks now like an optimistic projection given the inflow conditions in the most recent days), in comparison to 1,156,378 acre-feet (71% of system capacity) at the beginning of this year.

The harmful consequences of the IOP-5 could carry over and intensify in 2008 and subsequent years. The rules that are now severely limiting the Corps’ ability to store water remain in effect through February, and in March, when BI should increase, the thresholds above which the Corps can store water increase substantially, thwarting efforts to restore needed storage to the system.

#### CURRENT OPERATIONS AND OVER-RELEASE

Given the dangerously low system storage and an exceptional drought that is not expected to end any time soon, the Corps should be exercising extreme caution in operating the ACF reservoirs. During at least five days in early September, the Corps

made releases from Jim Woodruff Lock and Dam that were significantly in excess of the level prescribed under the IOP-5. Table 2 lists flow measured in the past ten days at Apalachicola River at Chattahoochee, Florida by U.S. Geological Survey (USGS). From September 4 through September 7, the Corps made releases from Woodruff that resulted in flows at the Chattahoochee gage of over 6,000 cfs. On two additional days, the flow at Chattahoochee, Florida was in excess of 5,400 cfs. These flows occurred during days when BI was at or approximately 5,000 cfs.

Table 2. Flow at Apalachicola River at Chattahoochee, Florida

Date	Discharge (cfs)	Gage height (feet)
08/27/2007	5,230 <sup>P</sup>	39.22 <sup>P</sup>
08/28/2007	5,140 <sup>P</sup>	39.16 <sup>P</sup>
08/29/2007	5,110 <sup>P</sup>	39.14 <sup>P</sup>
08/30/2007	5,120 <sup>P</sup>	39.15 <sup>P</sup>
08/31/2007	5,120 <sup>P</sup>	39.15 <sup>P</sup>
09/01/2007	5,180 <sup>P</sup>	39.19 <sup>P</sup>
09/02/2007	5,470 <sup>P</sup>	39.37 <sup>P</sup>
09/03/2007	5,220 <sup>P</sup>	39.21 <sup>P</sup>
09/04/2007	<b>6,630<sup>P</sup></b>	40.09 <sup>P</sup>
09/05/2007	<b>6,850<sup>P</sup></b>	40.22 <sup>P</sup>
09/06/2007	<b>6,480<sup>P</sup></b>	40.00 <sup>P</sup>
09/07/2007	<b>6,010<sup>P</sup></b>	39.71 <sup>P</sup>
09/08/2007	<b>5,410<sup>P</sup></b>	39.34 <sup>P</sup>
09/09/2007	<b>5,280<sup>P</sup></b>	39.25 <sup>P</sup>
09/10/2007	5,120 <sup>P</sup>	39.14 <sup>P</sup>
09/11/2007	5,100 <sup>P</sup>	39.13 <sup>P</sup>
09/12/2007	5,140 <sup>P</sup>	39.16 <sup>P</sup>

We understand that the Corps sometimes encounters head limitations at Jim Woodruff and Walter F. George and would have to make releases that are higher than required to reduce head difference at these projects. We also understand that this occurs sometimes as a result of high flows entering from the Flint River branch that cannot be stored because of Jim Woodruff's relatively small storage.

However, that does not appear to be the cause for the higher than expected flows during early September. There was no high flow coming into the system from the Flint branch. USGS Observations at Bainbridge, Georgia indicate that flow going into Jim Woodruff has been in the range between 1,580 cfs and 2,460 cfs (Table 3). In other words, the Corps would need to combine these flows with regulated flow (in the range between roughly 2,500 cfs and 3,500 cfs) out of Walter F. George to meet the 5,000 cfs minimum flow requirement at Chattahoochee, Florida.

Table 3. Flow at Flint River at Bainbridge, Georgia

Date	Discharge (cfs)	Gage height
08/27/2007	1,610 <sup>P</sup>	18.66 <sup>P</sup>
08/28/2007	1,580 <sup>P</sup>	18.65 <sup>P</sup>
08/29/2007	1,660 <sup>P</sup>	18.65 <sup>P</sup>
08/30/2007	1,620 <sup>P</sup>	18.67 <sup>P</sup>
08/31/2007	1,820 <sup>P</sup>	18.62 <sup>P</sup>
09/01/2007	2,460 <sup>P</sup>	18.73 <sup>P</sup>
09/02/2007	2,210 <sup>P</sup>	18.74 <sup>P</sup>
09/03/2007	2,400 <sup>P</sup>	18.73 <sup>P</sup>
09/04/2007	2,370 <sup>P</sup>	18.81 <sup>P</sup>
09/05/2007	2,190 <sup>P</sup>	18.72 <sup>P</sup>
09/06/2007	2,210 <sup>P</sup>	18.59 <sup>P</sup>
09/07/2007	2,090 <sup>P</sup>	18.50 <sup>P</sup>
09/08/2007	2,000 <sup>P</sup>	18.53 <sup>P</sup>
09/09/2007	2,110 <sup>P</sup>	18.47 <sup>P</sup>
09/10/2007	2,030 <sup>P</sup>	18.41 <sup>P</sup>
09/11/2007	1,800 <sup>P</sup>	18.54 <sup>P</sup>
09/12/2007	1,730 <sup>P</sup>	18.54 <sup>P</sup>

If there was a head difference that was structurally intolerable to Jim Woodruff Dam, that condition could have been avoided by the Corps reducing releases from Walter F. George (and thus less inflow to Jim Woodruff from the Chattahoochee branch), and consequently keeping more water in the system storage. I would appreciate your providing an explanation as to why such over-release would take place at a time of exceptional drought and dangerously low system storage. I also would like assurances from the Corps that the amount over-released will be reclaimed as quickly as BI allows, and that such over-release does not happen in the future.

In addition, it appears that scheduled peaking hydropower generation has exceeded that necessary to meet the requirements of the IOP-5 and other critical needs, even as the reservoirs have entered Zone 4. Now that the reservoirs are in Zone 4, how does the Corps intend to operate and schedule for hydropower generation?

In closing, I wish to reiterate my serious concerns about the status the federal reservoirs in Georgia. I ask that the Corps abide by its stated guidelines and use extreme caution in operating the ACF system, especially in the face of a potential multi-year and devastating drought. Most importantly, I ask that the Corps take into account the effects of the IOP-5 during this year in evaluating the need for further modifications as necessary to ensure the sustainability of the reservoirs in a severe, multi-year drought.

Sincerely,

A handwritten signature in black ink, appearing to read "Carol A. Couch". The signature is fluid and cursive, with the first name "Carol" being the most prominent.

Carol A. Couch, Ph.D.  
Director

CAC:ypf

cc: Brigadier General Joseph Schroedel, South Atlantic Division, U.S. Army Corps of Engineers  
Governor Sonny Perdue  
Ms. Joanne Brandt, Corps of Engineers Inland Environmental Team

# Comparison of ACF Basin Inflow between years 2007 and 2000

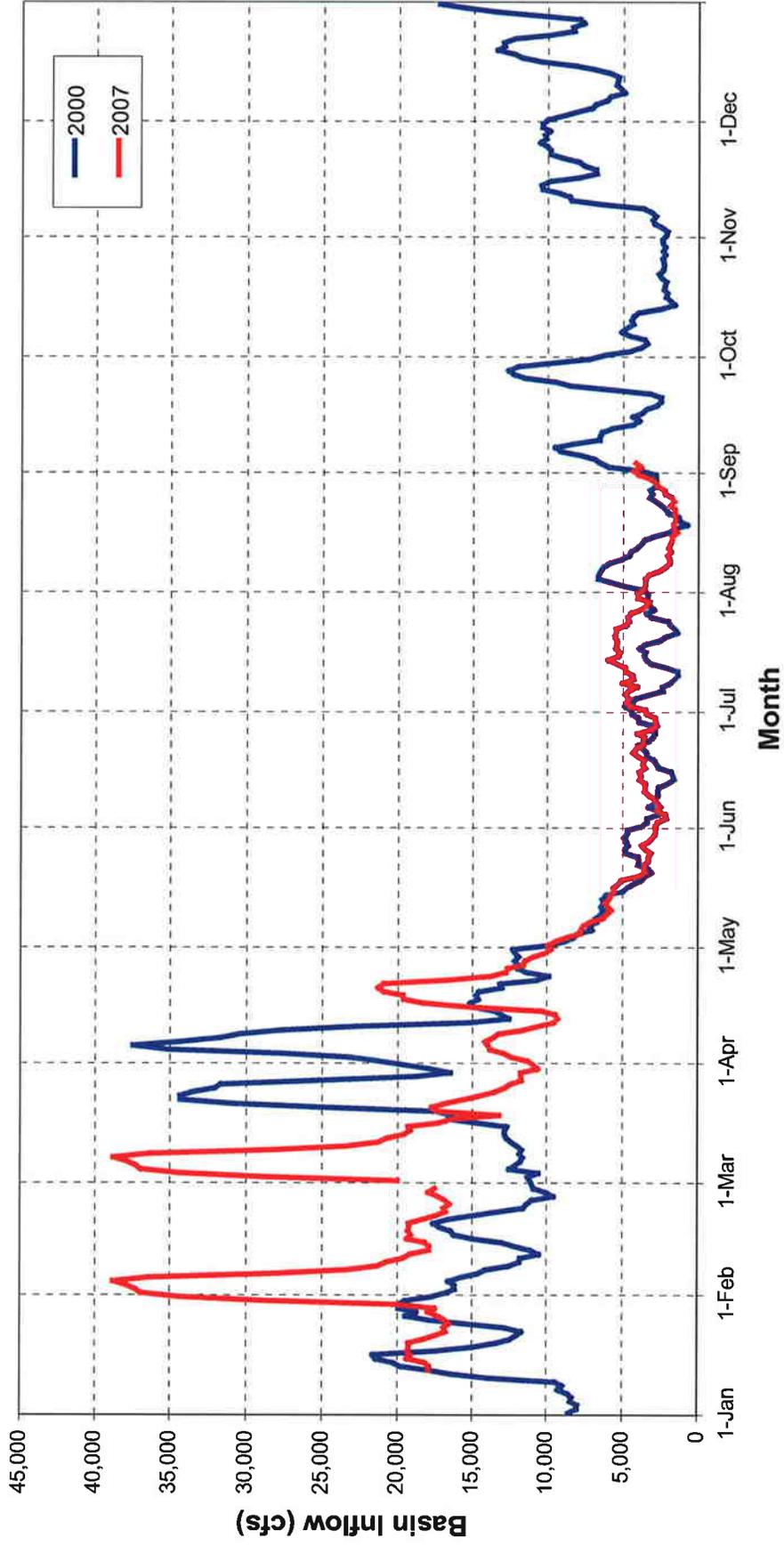


Fig. 1 ACF Basin Inflow in years 2007 and 2000

## PROJECTED LAKE LANIER ELEVATION IN 2007

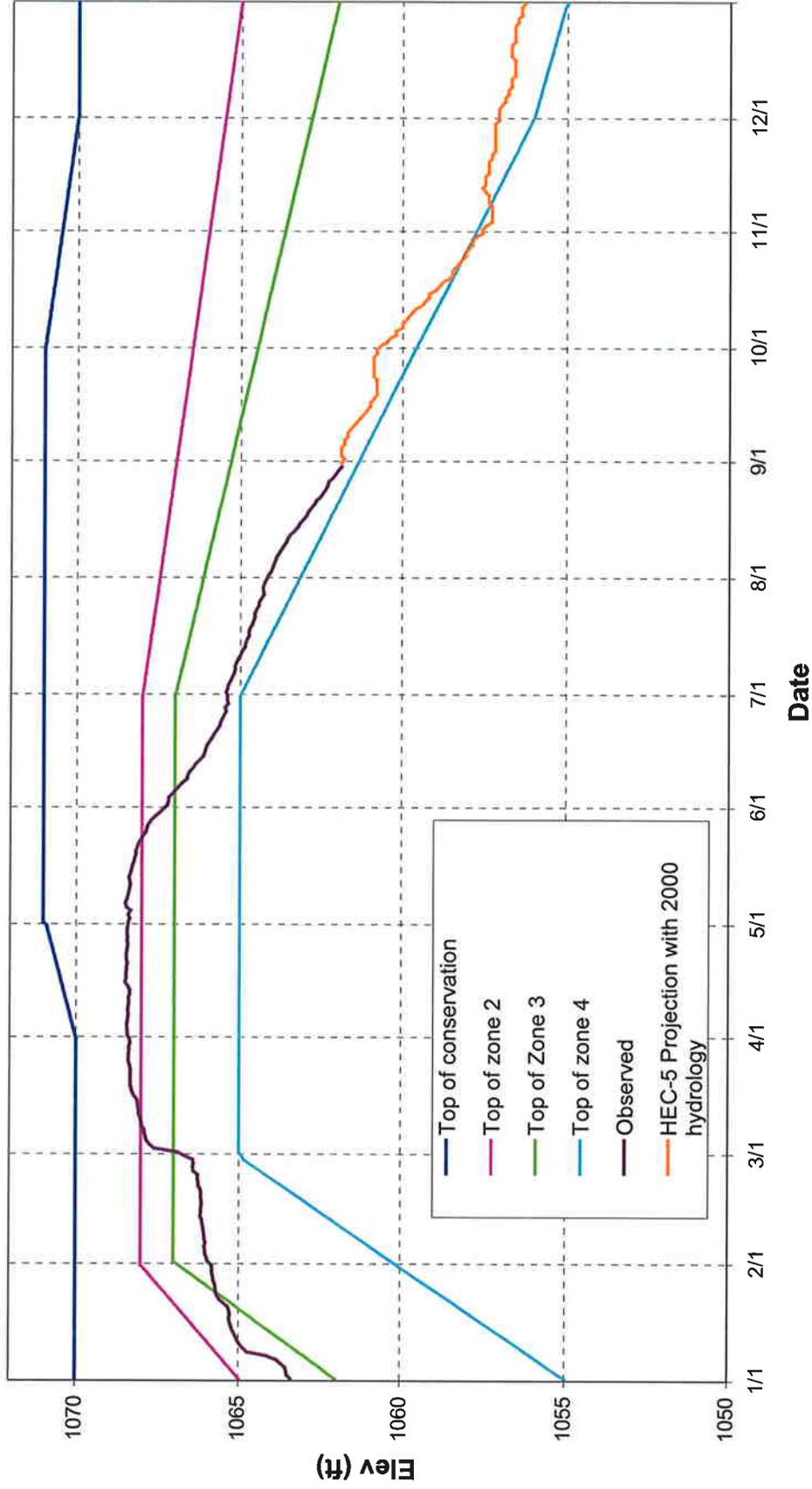


Fig. 2 Projected Lake Lanier elevation using year 2000 hydrology for the rest of year 2007

# PROJECTED WEST POINT ELEVATION IN 2007

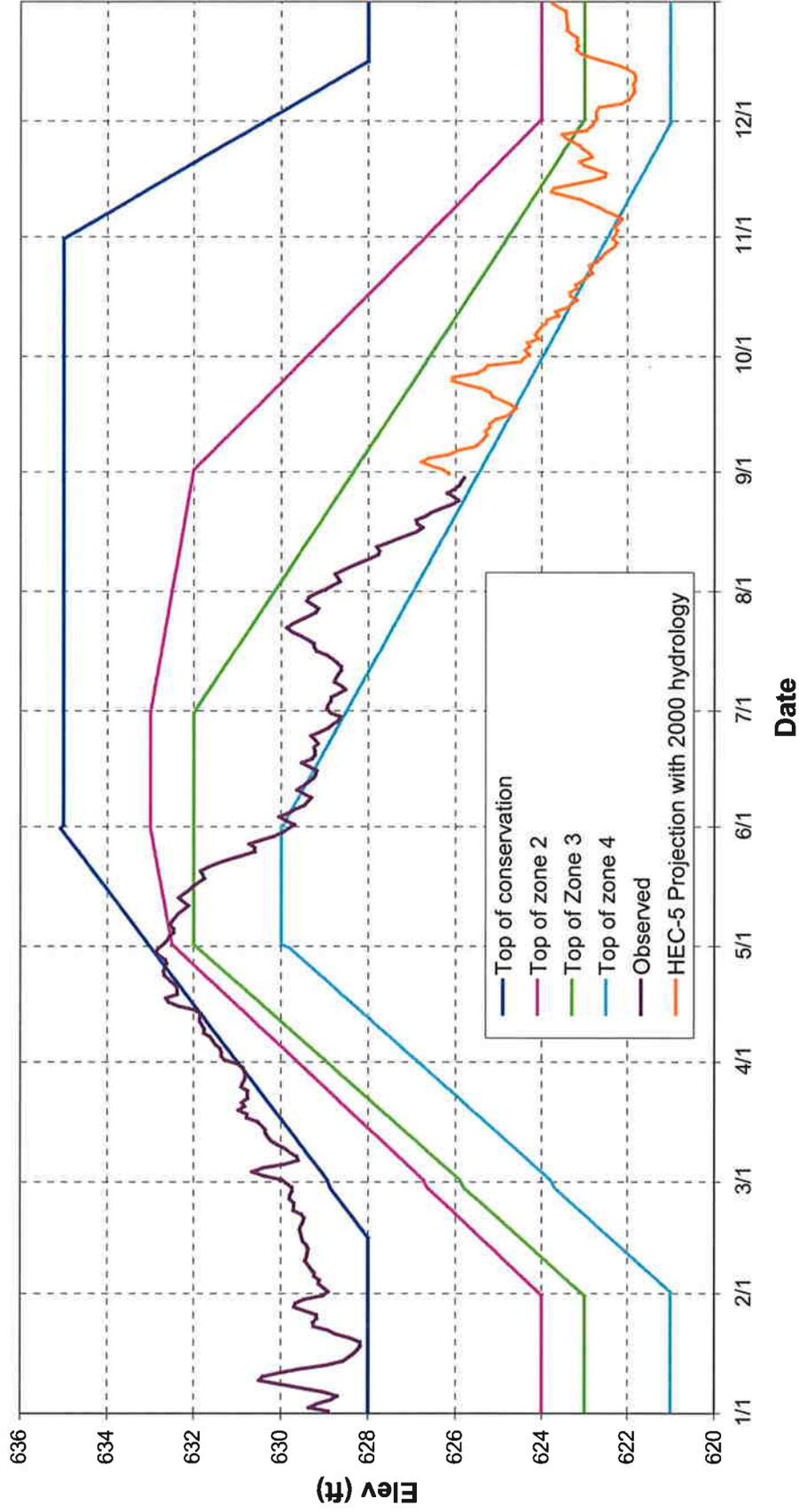


Fig. 3 Projected West Point elevation using year 2000 hydrology for the rest of 2007

## PROJECTED W.F.GEORGE ELEVATION IN 2007

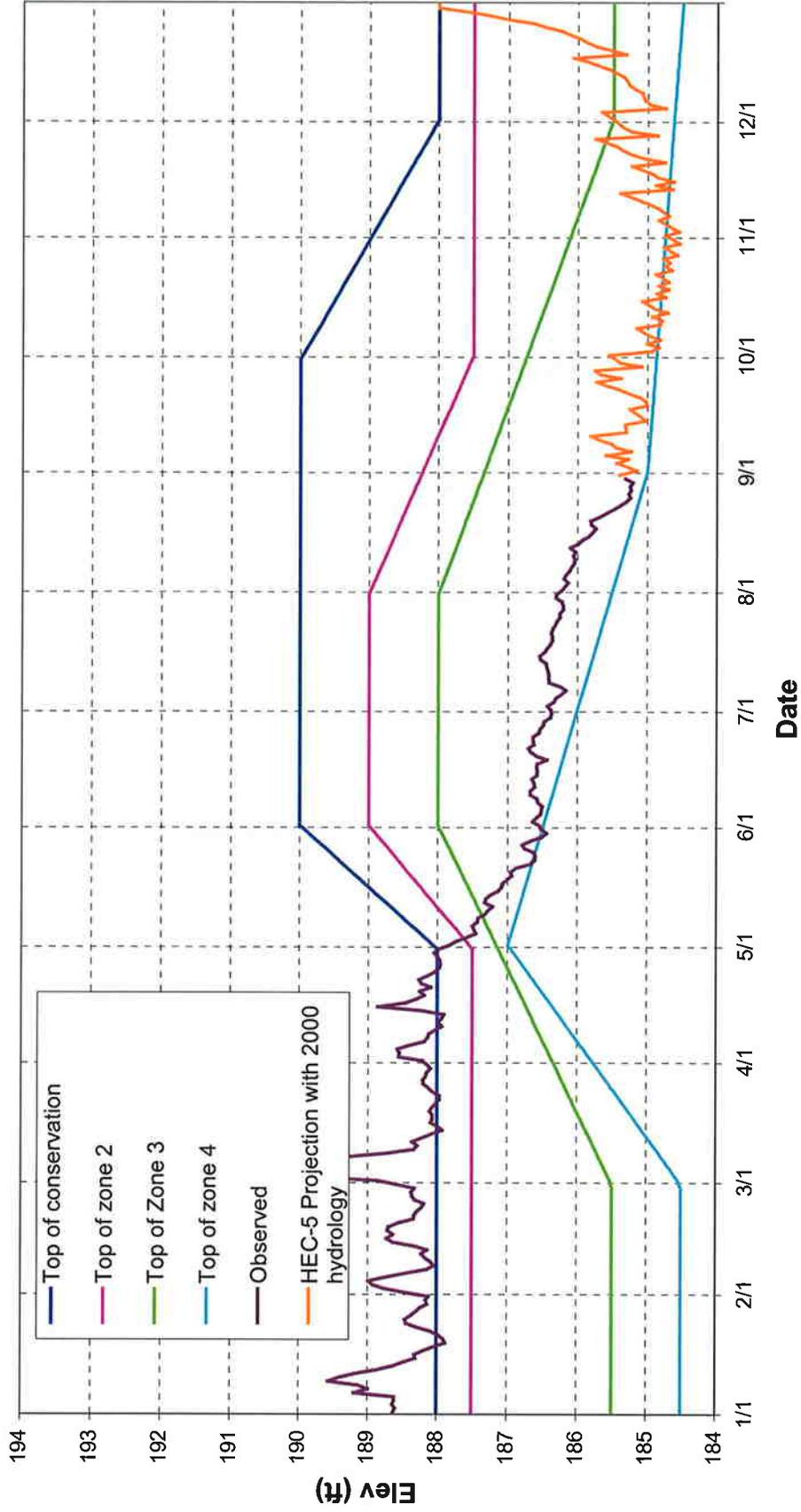


Fig. 4 Projected W.F. George elevation with year 2000 hydrology for the rest of 2007

# PREDICTED CHATTAHOOCHEE DISCHARGE IN 2007

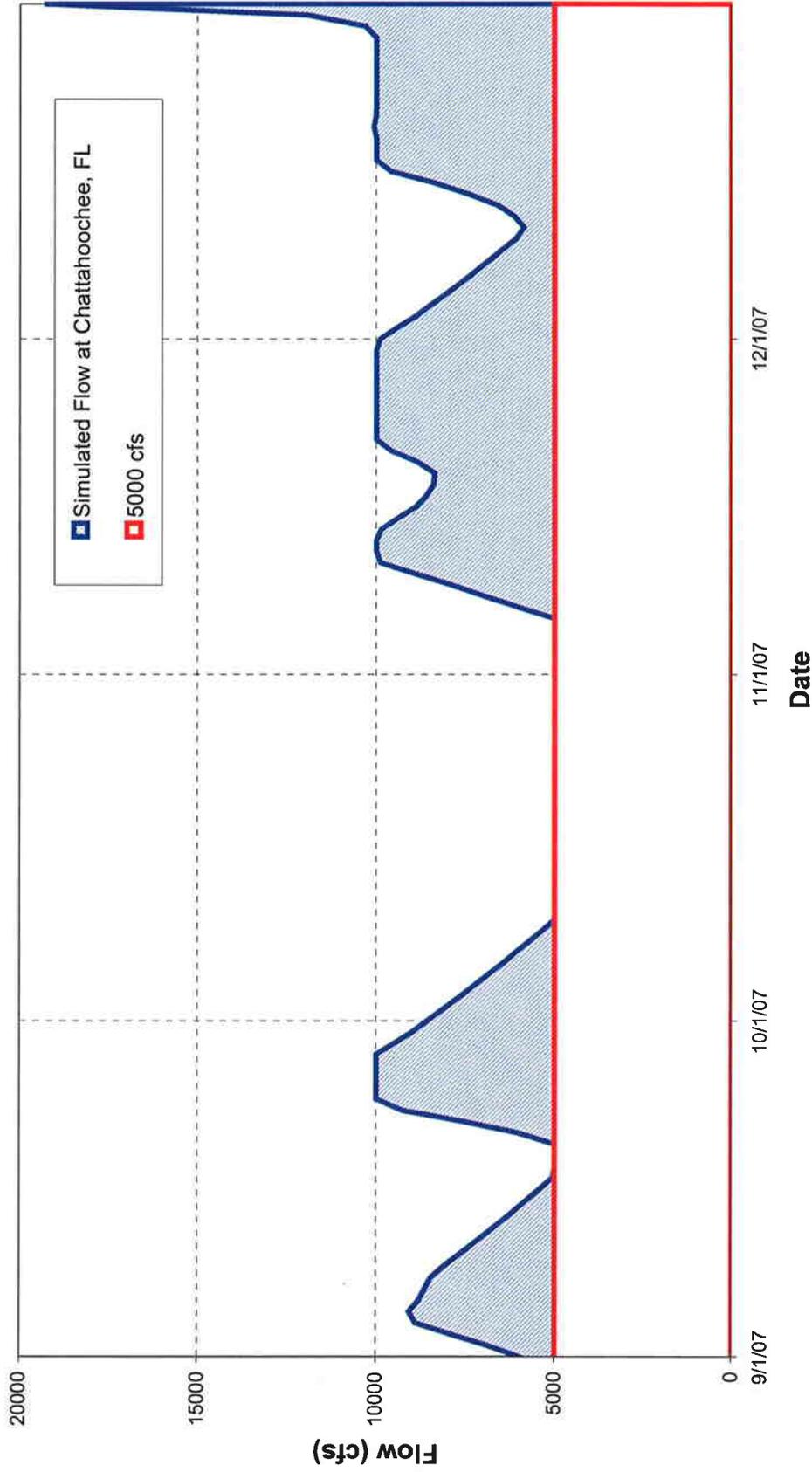


Fig. 5 Simulated flow at Chattahoochee, FL, with year 2000 hydrology for the rest of 2007

Gail Carmody/R4/FWS/DOI

10/17/2007 04:35 PM

To "Zettle, Brian A SAM" <Brian.A.Zettle@usace.army.mil>

cc "Zettle, Brian A SAM" <Brian.A.Zettle@usace.army.mil>, "Peck, Brian E SAM" <Brian.E.Peck@usace.army.mil>, "Hrabovsky, Cheryl L SAM"

bcc

Subject Re: Volumetric Balancing

Brian,

Thank you for the information below. This action does not require a re-initiation of consultation. We covered volumetric balancing in the September 2006 Biological Opinion and in our informal consultation that is described in your May 16, 2007 letter.

Gail Carmody  
Field Supervisor  
U.S. Fish and Wildlife Service - Panama City, FL

"Zettle, Brian A SAM" <Brian.A.Zettle@usace.army.mil>



"Zettle, Brian A SAM"  
<Brian.A.Zettle@usace.army.mil>

10/17/2007 09:12 AM

To <Jerry\_Ziewitz@fws.gov>, "Gail Carmody"  
<Gail\_Carmody@fws.gov>

cc "Ashley, Jonathan A SAM"  
<Jonathan.A.Ashley2@usace.army.mil>, "Bradley, Kenneth P SAM" <Kenneth.P.Bradley@usace.army.mil>, "Brandt, Joanne U SAM" <Joanne.U.Brandt@usace.army.mil>, "Eubanks, Michael J SAM" <Michael.J.Eubanks@usace.army.mil>, "Feldmeier, Paula M SAM" <Paula.M.Feldmeier2@usace.army.mil>, "Flanagan, Patricia A SAM" <Patricia.A.Flanagan@usace.army.mil>, "Hathorn, James E Jr SAM" <James.E.Hathorn.Jr@usace.army.mil>, "Hrabovsky, Cheryl L SAM" <Cheryl.L.Hrabovsky@usace.army.mil>, "Otto, Douglas C Jr SAM" <Douglas.C.Otto.Jr@usace.army.mil>, "Peck, Brian E SAM" <Brian.E.Peck@usace.army.mil>, "Shoemake, Deborah J SAM" <Deborah.J.Shoemake@usace.army.mil>, "Vaughan, Memphis Jr SAM" <Memphis.Vaughan.Jr@usace.army.mil>, "White, Jonas SAM" <Jonas.White2@usace.army.mil>, "Zettle, Brian A SAM" <Brian.A.Zettle@usace.army.mil>, "Trawick, Eubie D SAM" <Eubie.D.Trawick@usace.army.mil>, "Flakes, Curtis M SAM" <Curtis.M.Flakes@usace.army.mil>

Subject Volumetric Balancing

Jerry,

Our meteorologist suggest that portions of the ACF Basin could receive relatively substantial rainfall (up to an inch) this week. Per our conversation earlier today and consistent with the Volumetric Balancing clarifications described in our 16 May 2007 letter to USFWS, I am providing notice that we intend to store basin flows greater than 5,000 cfs if conditions permit. Our current volumetric balancing account has approximately 12,000 dsf credits accumulated since May and due to the drought we have not yet had an opportunity to accomplish recovery of storage used for downramping during this period. We do not

anticipate that the forecasted precipitation will result in substantial balancing of the account and it is likely that releases less than the 7-day basin inflow will not be significant. In the letter we agreed to avoid applying volumetric balancing when releases are less than 10,000 cfs to the extent practicable. However, due to the continuing drought we believe it is prudent to recover the storage as opportunities present themselves. Recovery of storage will assist us in continuing to augment flows to meet the 5,000 cfs minimum release requirement at Jim Woodruff Dam in support of listed mussels. We do not believe that releasing less than the 7-day basin inflow at this time will result in additional adverse impacts to listed species in the river. Should you have any comments or questions regarding volumetric balancing please contact me as soon as possible. Thanks.

Brian

Brian Zettle  
Biologist  
US Army Corps of Engineers  
(251) 690-2115



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

October 19, 2007

REPLY TO  
ATTENTION OF

Inland Environment Team  
Planning and Environmental Division

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

Dear Ms. Carmody:

The extraordinary drought conditions occurring in the Apalachicola-Chattahoochee-Flint Rivers (ACF) Basin this year appear likely to persist throughout the remainder of the year. Our staffs have discussed various options to temporarily modify the existing Jim Woodruff Dam Interim Operations Plan (IOP) protocols in order to conserve composite storage available in the system to support many project purposes, including the 5,000 cubic feet per second (cfs) minimum release at Jim Woodruff Dam. The purpose of this letter is to describe one of these options that we believe we can implement immediately and that is not likely to adversely affect resources protected under the Endangered Species Act of 1973 (ESA).

The IOP was developed in consultation with the U.S. Fish and Wildlife Service to provide for releases in support of federally listed species on the Apalachicola River, consistent with the requirements of the current water control plan. In conformance with the Draft Water Control Plan (1989) for the ACF Basin and the provisions of the IOP, the U.S. Army Corps of Engineers has been releasing a minimum flow of at least 5,000 cfs from Jim Woodruff Dam since late May 2007. Basin inflows during this same period have been considerably lower than 5,000 cfs for substantial periods (average 2,500 cfs over the last 60 days) resulting in a substantial reduction in storage from the upstream reservoirs. Recently the 7-day basin inflow has averaged less than 2,000 cfs. The composite storage for the system is currently in Zone 4 (lowest zone) and is projected to continue to drop significantly over the next 30-60 days. Currently, Lake Lanier is the only Federal reservoir within the ACF basin with storage remaining to support downstream water users and the 5,000 cfs minimum flow. The extremely dry conditions are resulting in rapidly declining availability of this storage. If the current conditions continue, the remaining conservation storage could only support the 5,000 cfs minimum flow for an estimated 100 additional days. At that point, no storage would remain in the conservation pool at Lake Lanier or the other Federal reservoirs. Our operational flexibility regarding water management within the basin would be acutely limited and the 5,000 cfs minimum flow release from Jim Woodruff Dam would no longer be able to be maintained.

During our recent informal discussions, we have considered possible temporary modifications to the IOP that would minimize the risk of depleting composite storage within the basin and assist us in maintaining the 5,000 cfs minimum flow on the Apalachicola River. Certain measures under consideration will require further consultation discussion, but we have also discussed whether certain drought contingency measures could be implemented at this time without causing adverse effects to the listed species. Based on our discussions, we herein propose to temporarily suspend the IOP-prescribed maximum fall rate schedule for releases from Jim Woodruff Dam until March 1, 2008. During the period of the temporary modification, we will attempt to match any releases from Jim Woodruff Dam above the 5,000 cfs minimum flow to the basin inflow fall rate rather than the IOP maximum fall rate schedule to the extent practicable. This modification will minimize the additional use of storage that would occur when the IOP specified ramping down rate is slower than the rate of fall of basin inflow. Physical limitations and water travel times may prevent strict adherence to the basin inflow fall rate. All other provisions of the IOP will be adhered to.

Fall rate, also called down-ramping rate, is the vertical drop in river stage (water surface elevation) that occurs over a given period. The IOP fall rates are expressed in units of feet per day (ft/day), and are measured at the United States Geological Survey (USGS) gage, #02358000, Apalachicola River at Chattahoochee, Florida, as the difference between the daily average river stage of consecutive calendar days. Maximum fall rates under the IOP vary according to the flow released from Jim Woodruff Dam. Lower flows are assigned more gradual fall rates, and higher flows are assigned more rapid fall rates. The intent of the IOP maximum fall rate schedule is to limit the potential for stranding aquatic organisms, including listed species and host fish for listed mussels, in areas that become exposed or become disconnected from the main channel during periods of declining flow.

As you know, the IOP utilizes a 7-day moving average basin inflow calculation to determine the prescribed minimum releases from Jim Woodruff Dam. The 7-day moving average basin inflow calculation dampens daily fluctuations in basin inflow and results in less extreme day-to-day changes in the required minimum release from Jim Woodruff Dam. This dampening should generally, but not always, yield a prescribed minimum release that is also consistent with the maximum fall rate schedule without the release of additional water from storage. However, there are occasions when this is not the case and a substantial drawdown of storage can occur due to gradual down ramping while following declining basin inflow. An example of this scenario would involve rain events limited to the Flint River basin, where no Federal storage projects exist, requiring increased releases from Jim Woodruff Dam (essentially no storage capability) and the use of stored water from the Federal reservoirs on the Chattahoochee River to meet the maximum fall rate schedule prescriptions. Given the severity of the current drought, especially in the upper portion of the basin, continued adherence to the IOP maximum fall rate schedule could impact our ability to conserve storage to the maximum extent practicable and, if current conditions continue, limit our ability to continue to meet the 5,000 cfs minimum release from Jim Woodruff Dam as composite storage within the basin becomes depleted.

As described above, the intent of the IOP maximum fall rate schedule is to limit the potential for stranding aquatic organisms, including listed species and host fish for listed mussels, in areas that become exposed or become disconnected from the main channel during periods of declining flow. Due to the drought conditions resulting in flows on the Apalachicola River averaging approximately 5,000 cfs since May of this year, it is unlikely that live mussels occur at elevations above the current level. Given the current drought conditions and forecasted drought extension, it is also unlikely that rain events will result in flows in the Apalachicola River significantly increasing above current flows for a period of time long enough for mussels to move to higher elevation locations with or without the maximum fall rate schedule in place and the potential for stranding is minimal. Likewise, distributaries of the Apalachicola River, except those that flow directly to the bay, are disconnected at the current flow levels and it is unlikely that flows would increase high enough and for an extended period lengthy enough to result in significant stranding of Gulf sturgeon or host fish for listed mussels. Furthermore, most sturgeon will soon, if they have not already, migrate from the river to the bay and gulf, where they will remain until the spring spawning period beginning March 1, 2008. Because we do not anticipate a large increase in flows in the coming weeks, suspending the maximum fall rate schedule will make a relatively small difference in flows compared to those that would occur if no change to the IOP were made. Therefore, we do not anticipate any destruction or adverse modification of critical habitat primary constituent elements for Gulf sturgeon (ex: flow regime) or destruction or adverse modification of proposed critical habitat primary constituent elements for the listed mussels.

It is our determination that the proposed modification may affect, but is not likely to adversely effect the threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*), endangered fat threeridge mussel (*Amblema neislerii*), threatened purple bankclimber mussel (*Elliptoideus sloatianus*) and threatened Chipola slabshell (*Eliptio chipolaensis*) and will not result in destruction or adverse modification of habitat designated and proposed as critical habitat for the Gulf sturgeon and the mussels. We request your concurrence with this determination and approval of the proposed modification pursuant to Section 7 of the ESA.

If you have any further questions or comments regarding our operations under the Jim Woodruff Dam IOP and our efforts to minimize or avoid impacts to the listed species on the Apalachicola River, please feel free to contact Ms. Joanne Brandt, (251) 690-3260, email [joanne.u.brandt@sam.usace.army.mil](mailto:joanne.u.brandt@sam.usace.army.mil); or Mr. Brian Zettle, (251) 690-2115, email [brian.a.zettle@sam.usace.army.mil](mailto:brian.a.zettle@sam.usace.army.mil).

Sincerely,



Curtis M. Flakes  
Chief, Planning and Environmental  
Division



IN REPLY REFER TO:

# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Field Office  
1601 Balboa Avenue  
Panama City, FL 32405-3721

Tel: (850) 769-0552  
Fax: (850) 763-2177

October 19, 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:

Thank you for your letter dated October 19, 2007 (today), about a temporary revision to the Woodruff Dam Interim Operating Plan (IOP). The Service recognizes that the combination of circumstances in the ACF Basin at this time represents a condition that is more severe for the operations of the federal projects than has ever occurred previously, and more severe than the critical period represented in the Corps' 1939-2001 hydrologic models. The hydrologic models that the Corps provided for our September 6, 2006, Biological Opinion indicated that the IOP would manage conservation storage in the federal reservoirs in a manner that would satisfy consumptive demands and minimum releases through the worst drought of record. However, in much of the ACF Basin, various precipitation and drought indices are now at record low levels, and the federal reservoirs are at levels lower than were recorded at this time of year during the 1999-2001 drought, which was the critical period in the models. It is therefore prudent to consider immediate measures to slow the continuing drawdown on storage in order to maintain your ability to serve the various authorized purposes for the federal reservoirs, including fish and wildlife conservation.

Your letter proposes an immediate suspension of the maximum fall rate (down ramping) schedule of the IOP until March 1. You have determined that this operational modification is not likely to adversely affect resources protected under the Endangered Species Act. We have reviewed your rationale for this determination and concur. This concurrence fulfills your responsibilities under section 7 of the Act relative to this action. In the coming weeks, we will continue to work with you to identify possible further drought response measures and evaluate their consequences to fish and wildlife resources.

Sincerely,

Gail A. Carmody  
Field Supervisor



STATE OF GEORGIA  
OFFICE OF THE GOVERNOR  
ATLANTA 30334-0900

Sonny Perdue  
GOVERNOR

October 20, 2007

The Honorable George W. Bush  
The President  
The White House  
Washington, DC 20500

Through: Major Phillip May  
Regional Director  
FEMA Region IV  
3003 Chamblee Tucker Road  
Atlanta, GA 30341

Dear Mr. President:

Under the provisions of Section 401 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. §§ 5121-5206 (Stafford Act), and implemented by 44 CFR § 206.36, I request that you declare a major disaster for the State of Georgia as a result of prolonged exceptional drought conditions existing in the northern third of Georgia which have created a shortage of water availability at an unprecedented level. The continued depletion of this crucial resource is creating a significant and increasingly severe threat to Georgia businesses, industry, economic stability and the health and safety of Georgia citizens.

The requested incident period for the Severe Georgia Drought is September 28, 2007 and continuing. The counties included in the incident are as follows: Baker, Banks, Barrow, Bartow, Butts, Calhoun, Carroll, Catoosa, Chattooga, Cherokee, Clarke, Clayton, Cobb, Coweta, Crawford, Crisp, Dade, Dawson, Decatur, DeKalb, Dooly, Dougherty, Douglas, Early, Elbert, Fannin, Fayette, Floyd, Forsyth, Franklin, Fulton, Gilmer, Gordon, Greene, Gwinnett, Habersham, Hall, Haralson, Harris, Hart, Heard, Henry, Jackson, Jasper, Lee, Lincoln, Lumpkin, Macon, Madison, Marion, Meriwether, Miller, Mitchell, Morgan, Murray, Muscogee, Newton, Oconee, Oglethorpe, Paulding, Peach, Pickens, Pike, Polk, Rabun, Randolph, Rockdale, Schley, Seminole, Spalding, Stephens, Sumter, Talbot, Taylor, Terrell, Towns, Troup, Union, Upson, Walker, Walton, Webster, White, Whitfield, and Wilkes Counties. These eighty-five Georgia counties are the same areas included in the October 20, 2007 Governor Declaration of a State of Emergency.

In response to the situation, I have taken appropriate action under state law and directed the execution of the Georgia Emergency Operation Plan on October 20, 2007, in accordance with

Section 401 of the Stafford Act. I have also declared a State of Emergency on October 20, 2007, for the above 85 counties (attached as Exhibit A).

### **Current and Potential Impact of the Disaster**

The Georgia Environmental Protection Division has utilized the U. S. Army Corps of Engineers computer modeling programs to demonstrate that unless alterations are made to the Interim Operating Plan (IOP) for the Apalachicola-Chattahoochee-Flint (ACF) River Basin that “there is a serious risk that the reservoirs will be drained of all conservation storage. If that occurs, there will be severe water shortages for millions of Georgians, and the flow in the Chattahoochee and Apalachicola Rivers will fall dramatically below current levels, harming the biological species that depend on those flows.” Using assumptions based on the historical drought conditions we are experiencing, the computer modeling programs show that the major reservoir serving the Atlanta metropolitan area (Lake Lanier) would fall to unprecedented levels in the next few weeks and would empty before the end of January 2008. Two other reservoirs, West Point Lake and Lake Walter F. George will be empty beginning in November and would remain empty through next February. The serious effects of draining the lakes would be felt throughout 2008 and perhaps for years to come.

If alterations are not made to the IOP, then the Lake Lanier water level will fall below the 1039 level which would expose all water supply intakes. It is unimaginable what measures would be necessary to provide minimal water requirements to the over four million Georgians who depend upon this resource for water.

### **Estimated Financial Impact of the Disaster**

It is estimated that state and local governments have already incurred expenses exceeding the \$10.15 million state threshold for damages and emergency measures related to this disaster. The potential catastrophic costs that would be incurred in providing minimal water to the affected residents and businesses can largely be diverted through the use of additional presidential authorities granted through the declaration of a major disaster regarding relief from certain provisions of the Endangered Species Act.

### **FEMA Program Assistance and Direct Federal Assistance Requested**

I am requesting direct Federal Assistance for work and services to save lives and protect property.

I have determined that this incident is of such severity and magnitude that effective response is beyond the capabilities of the State and the affected local governments and that supplemental Federal assistance is necessary. I am specifically requesting the Public Assistance Emergency Protective Measures (Category B), Water Control Facilities (Category D) and Utilities (Category F) be approved for the affected areas. In addition, the State is requesting that Disaster Unemployment Assistance be made available to individuals residing the affected areas; that Small Business Administration disaster loans be made available to businesses impacted by the disaster in the

affected areas; and that Hazard Mitigation Programs be made available statewide to local governments to implement mitigation efforts to avert damages from future disasters.

Furthermore, I am requesting direct Presidential assistance to implement two critical actions that are necessary to avert a disaster of an unprecedented nature.

- (1) The State of Georgia is requesting that with the declaration of this major disaster that the President exercise his authority under section (p) "Exemptions in Presidentially declared disaster areas" of the Endangered Species Act to determine that action is (a) necessary to prevent the recurrence of such a natural disaster and to reduce the potential loss of human life, and (b) to involve an emergency situation which does not allow the ordinary procedures of the Endangered Species Act to be followed; 16 USC § 1536(p); and,
- (2) The State of Georgia is requesting that the President determine that the actions to alter the reservoir operating rules under the Interim Operating Plan (IOP) for the Apalachicola-Chattahoochee-Flint (ACF) River Basin as outlined in the attached (Exhibit B) letter of October 12, 2007 from Carol Couch, Director, Georgia Environmental Protection Division, to Col. Byron Jorns, Commander and District Engineer with the Mobile District of the U. S. Army Corps of Engineers, is consistent with permitted repairs to public facilities as delineated in the Endangered Species Act exemption provisions referenced above.

Preliminary estimates of the types and amount of assistance needed under the Stafford Act are tabulated in Enclosures A and B. Estimated requirements for assistance from certain Federal agencies under other statutory authorities are tabulated in Enclosure C.

#### **State and Local Government Actions Taken to Mitigate the Impact of the Disaster**

The State of Georgia has taken increasingly progressive steps to avert this impending catastrophe. On April 18, 2007 the director of the Georgia Environmental Protection Division declared a Level Two Statewide Drought Response for the State of Georgia. This action was taken as the drought conditions, which began in 2006, continued through the winter and early spring seasons when the natural precipitation cycles would normally replenish the reservoirs. Current climatic and hydrological conditions show that this is the worst drought of record for Georgia. Unfortunately, all the forecasts for the balance of this year and early 2008 indicate a continuation of the extreme drought conditions.

The State declared a Level Four Drought Response for the northern third of Georgia on September 28, 2007. In addition, the State has sought through discussions and petitions to secure the cooperation of the Mobile District of the U. S. Army Corps of Engineers to alter the IOP to lower release levels to help preserve the remaining water in the reservoirs. Alteration of the release levels will ensure that sufficient resources are available to serve not only the needs of the individuals depending upon the ACF River Basin, but also the endangered species that depend upon a continued minimal water flow.

As the drought conditions have continued, local units of government have imposed additional conservation measures. Many Georgia communities, like Douglas County, have imposed additional restrictions and heavy fines for violators of outdoor watering bans. Other communities, like the City of Lawrenceville, have initiated measures to bring additional water wells or abandoned water wells back into service.

Unfortunately, the cumulative impact of the state and local measures will be inadequate to avert this impending catastrophe. It is only the direct intervention of the President through the actions outlined above that can forestall this disaster and provide the necessary time to implement further water conservation measures that will be necessary until the drought ends and the normal precipitation cycles return.

### State Certifications

I certify that for this major disaster, the state and local governments will assume all applicable non-federal share of costs required by the Stafford Act. Total expenditures are expected to exceed \$10.15 million, in accordance with the table in Enclosure D.

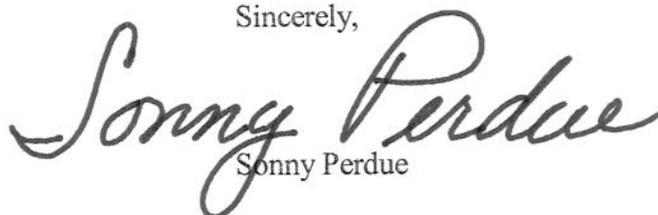
I certify that the State of Georgia has a federally approved standard state mitigation plan. The State is in the process of updating our mitigation plan which will be completed on or before April 15, 2008.

In accordance with 44 CFR § 206.208, the State of Georgia agrees that it will, with respect to direct Federal assistance:

1. Provide without cost to the United States all lands, easements and rights-of-ways necessary to accomplish the approved work;
2. Hold and save the United States free from damages due to the requested work, and shall indemnify the Federal Government against any claims arising from such work;
3. Provide reimbursement to FEMA for the non-Federal share of the cost of such work in accordance with the provisions of the FEMA-State Agreement; and
4. Assist the performing Federal agency in all support and local jurisdictional matters.

I have designated Charley English as the State Coordinating Officer for this request. He will work with the Federal Emergency Management Agency in damage assessment and may provide further information or justification on my behalf.

Sincerely,

  
Sonny Perdue



**ENCLOSURE B TO MAJOR DISASTER REQUEST**

Estimated Requirements for Public Assistance  
Stafford Act

	CATEGORY							
County	A	B	C	D	E	F	G	Total
Statewide		10.15 *		*		*		
Totals :								

*Note: Estimates are to reflect total eligible costs before any cost sharing.*

**\*It is estimated that state and local governments have already incurred expenses exceeding the \$10.15 million state threshold for damages and emergency measures related to this disaster.**

**ENCLOSURE C TO MAJOR DISASTER REQUEST**

Estimated Requirements for Other Federal Agency Programs

County	SBA Home Loans	SBA Business Loans	FSA Loans	NRCS	FHWA	USACE	OTHER
Totals		<b>Unknown</b>					

Note: Provide numbers and amounts, as appropriate.

**The State of Georgia is unable to estimate the amount of SBA Business Loans that will be needed to assist businesses affected by the disaster.**

**ENCLOSURE D TO MAJOR DISASTER REQUEST**

Governor's Certification

I certify that for this current disaster, State and local government expenditures and obligations will include the non-Federal share of costs required by the Stafford Act. As stated in my basic letter, and based on information available at this time, tabulation of these estimated expenditures and obligations are as follows:

CATEGORY OF ASSISTANCE	AMOUNT	
	STATE	LOCAL
Individual Assistance:		
"Other Assistance" under the Individuals and Households Program		
Other (specify)		
<b>Total:</b>		
Public Assistance:		
Category A - Debris Removal		
Category B - Emergency Protective Measures	\$10.15 Million	
Category C - Roads and Bridges		
Category D - Water Control Facilities		
Category E - Buildings and Equipment		
Category F - Utilities		
Category G - Other (Parks, Recreational Facilities, etc.)		
<b>Total:</b>		
<b>Grand Total:</b>		

It is estimated that state and local governments have already incurred expenses exceeding the \$10.15 million state threshold for damages and emergency measures related to this disaster.



# THE STATE OF GEORGIA

## EXECUTIVE ORDER

---

BY THE GOVERNOR:

**WHEREAS:** Prolonged exceptional drought conditions existing across the Northern third of Georgia have created a shortage of water availability at an unprecedented level; and

**WHEREAS:** Numerous lakes, reservoirs and impoundments have experienced record breaking low water levels putting the availability of drinking water to over 4 million citizens at great risk; and

**WHEREAS:** The continued depletion of this crucial resource is creating a significant and increasingly severe threat to Georgia businesses, industry, economic stability and the health and safety of Georgia citizens; and

**WHEREAS:** These hazardous conditions require that Georgia citizens, businesses and industries be extremely vigilant in exercising aggressive water conservation methods; and

**WHEREAS:** These unprecedented events require the action of the State of Georgia to protect the public health, preserve the safety of the public, prevent major destruction to the environment and protect the social and economic stability of the State.

**NOW, THEREFORE, PURSUANT TO THE AUTHORITY VESTED IN ME AS GOVERNOR OF THE STATE OF GEORGIA, IT IS HEREBY**

**ORDERED:** That a State of Emergency exists in Baker, Banks, Barrow, Bartow, Butts, Calhoun, Carroll, Catoosa, Chattooga, Cherokee, Clarke, Clayton, Cobb, Coweta, Crawford, Crisp, Dade, Dawson, Decatur, DeKalb, Dooly, Dougherty, Douglas, Early, Elbert, Fannin, Fayette, Floyd, Forsyth, Franklin, Fulton, Gilmer, Gordon, Greene, Gwinnett, Habersham, Hall, Haralson, Harris, Hart, Heard, Henry, Jackson, Jasper, Lee, Lincoln, Lumpkin, Macon, Madison, Marion, Meriwether, Miller, Mitchell, Morgan, Murray, Muscogee, Newton, Oconee, Oglethorpe, Paulding, Peach, Pickens, Pike, Polk, Rabun,

Randolph, Rockdale, Schley, Seminole, Spalding, Stephens, Sumter, Talbot, Taylor, Terrell, Towns, Troup, Union, Upson, Walker, Walton, Webster, White, Whitfield, and Wilkes Counties due to the existing exceptional drought and the subsequent threats to the water supply in these areas.

**IT IS FURTHER**

**ORDERED:**

That personnel and equipment resources of the State of Georgia be made available to assist the Georgia Department of Natural Resources, Environmental Protection Division, the Georgia Emergency Management Agency and local governments in the mitigation, preparedness and response activities currently being undertaken.

**IT IS FURTHER**

**ORDERED:**

That there is hereby created and established the Drought Response Unified Command and the Drought Response Working Group consistent with the Georgia Emergency Operations Plan. The Drought Response Unified Command will work together to coordinate a common set of incident objectives and strategies, share information, maximize the use of available resources, and enhance the efficiency of the State's drought response. The Drought Response Working Group will implement an effective and systematic means of assessing and responding to the drought emergency, under the direction of the Drought Response Unified Command.

**IT IS FURTHER**

**ORDERED:**

That the Drought Response Unified Command report to the Governor and be directed by the following individuals: The Director of the Georgia Environmental Protection Division, the Director of the Georgia Emergency Management Agency, the Executive Director of the Georgia Environmental Facilities Authority, and the Director of the Georgia Division of Public Health. The Unified Command shall report to the Governor through the Director of the Georgia Environmental Protection Division, who will lead the Unified Command, for all command decisions regarding the State's drought response.

**IT IS FURTHER**

**ORDERED:**

That the following agencies appoint representatives to the Drought Response Working Group: Georgia Environmental Protection Division; Georgia Emergency Management Agency; Georgia Environmental Facilities Authority; Georgia Division of Public Health; Georgia Department of Agriculture; Georgia Department of Human Resources; Georgia Public Service Commission; Georgia Department of Transportation; Georgia Department of Public Safety; Department of Community Affairs, Georgia Forestry Commission; and, other State Boards, Departments, Agencies, Councils, Associations, Institutions or Authorities as necessary.

**IT IS FURTHER**

**ORDERED:**

That the Georgia Emergency Management Agency activate the Georgia Emergency Operations Plan and the Georgia Environmental Protection Division implement the State of Georgia Drought Response Strategy.

This 20<sup>th</sup> day of October, 2007.

  
GOVERNOR

## **Georgia Department of Natural Resources**

2 Martin Luther King Jr., Drive, Suite 1152 East Tower, Atlanta, Georgia 30334  
Noel Holcomb, Commissioner  
Carol A. Couch, Ph.D., Director  
Environmental Protection Division  
(404) 656-4713

October 12, 2007

Col. Byron Jorns  
Commander and District Engineer  
Department of the Army  
Mobile District, Corps of Engineers  
190 Saint Joseph Street  
Mobile, Alabama 36602-3630

Re: Request for Immediate Alteration of IOP Releases

Dear Colonel Jorns:

Since I last wrote to you on September 14, 2007 concerning the status of the federal reservoirs within the Apalachicola-Chattahoochee-Flint (ACF) River Basin, conditions have deteriorated. Reservoir storage is falling to levels not seen in decades, and the climatic forecasts through next winter suggest that the drought will worsen. The Corps' own computer modeling shows that under these conditions, if the Corps continues to operate under the existing Interim Operations Plan (IOP), there is serious risk that the reservoirs will be drained of all conservation storage. If that occurs, there will be severe water shortages for millions of Georgians, and the flow in the Chattahoochee and Apalachicola Rivers will fall dramatically below current levels, harming the biological species that depend on those flows. The Corps must take action now to avert this catastrophe.

Below I provide information concerning 2007 climatic and hydrologic conditions and review the projections of conditions through next February if the Corps continues to operate according the existing IOP. These data lay bare the conclusion that the IOP must be adjusted immediately pending discussions over longer-term modifications. Accordingly, I propose specific short-term adjustments of the IOP and provide the computer modeling showing the relief that this adjustment may provide.

### THE DROUGHT OF 2007

Taken together, climatic and hydrologic conditions show that this is the worst drought of record. The ACF Basin in Georgia mainly falls within Climatic Divisions Two, Four, and Seven, with small portions of it in Climatic Divisions 1, 3, 5, and 8. Figure 1 illustrates how precipitation within these Climatic Divisions during March through August of this year compares with the commonly recognized prior droughts of record. For the six month period of March through August, a time when Georgia normally receives the majority of its precipitation, cumulative rainfall deficit in Climatic Divisions Two, which include the northern portion of the ACF Basin was the worst in the past half century, far eclipsing the droughts of 2000, 1988, and 1986. Over the same months, cumulative rainfall deficit within Climatic Division Four, which includes the upper Flint River Basin and the middle reaches of the Chattahoochee River, has matched the

levels of the year 2000 as the lowest in the past half century. Rainfall within Climatic Zone Seven, which includes the lower reaches of the Chattahoochee River and the Flint River, was only slightly higher than in the drought of 1986 and was worse than in 2000 and 1988.

We do not yet have final rainfall data for the month of September throughout the basin, but we know it was very dry. The United States Geological Survey recently released a fact sheet stating that “the 2007 drought in Georgia worsened during September, bringing many of the State’s rivers and streams to their lowest levels ever recorded for the month.” This fact sheet is available at the USGS web site, at [http://ga.water.usgs.gov/drought/drought\\_sept2007.pdf](http://ga.water.usgs.gov/drought/drought_sept2007.pdf).

Low precipitation levels have resulted in extremely low stream flows across the ACF Basin (Figures 2 through 5 showing the lowest average flow in the period May through August) and record low basin inflow (total amount of flow entering the entire ACF system). Figure 6 compares basin inflow for the years 2007 and 2000. The year 2000 saw the lowest basin inflows on record as of that time for the May to September period. Our calculations indicate that the May through September cumulative flow in 2007 is 15% to 20% lower than in 2000.

Conditions are not projected to improve any time soon. Several weeks ago, the Southeast Climatologist Consortium forecasted that La Nina conditions were developing. This means that we should expect a drier and warmer cool season (October 2007 through March 2008). We did not experience a La Nina following or during the most severe drought years in the past. This means that it is very likely that we will see the drought worsen in the next few months and may well experience further record-breaking conditions in 2008.

#### ACF RESERVOIRS AT SERIOUS RISK OF DEPLETION

The 2007 drought has taken a serious toll on the federal reservoirs. To make matters worse, the Corps has been operating under the IOP this year. The IOP has required the Corps to release essentially all of the basin inflow entering the system and exhaust large quantities of storage to maintain a minimum flow of 5,000 cfs at Chattahoochee, Florida. The Corps spent a great deal of storage controlling rampdowns after rainfall events, and has released a significant quantity of water in excess of even what the IOP requires.

The current basin inflow to the ACF system is around 2,000 cfs, which means that the Corps has to use 3,000 cfs-day (or 6,000 acre-feet) of system storage to meet the flow requirement of 5,000 cfs. If basin inflow does not improve significantly in the near future, this level of augmentation will deplete the system storage in a matter of 117 days.

As of October 11, 2007, the composite storage of the entire ACF system (the sum of remaining conservation storage from Lanier, West Point, and Walter F. George) is down to 702,907 acre-feet, or 42.9% of the system capacity. (See Figure 7.) By comparison, system storage was at 1.39 million acre-feet on May 1, 2007. By our calculations, the Corps has used more than 600,000 acre-feet of storage to support flow at Chattahoochee, Florida over the past 5 months.

As of October 11, 2007, the elevation at Lake Lanier, the largest storage reservoir and the primary source of drinking water for over four million of people in Georgia, is down to 1057.9 feet. This is more than thirteen feet below its normal pool level and is 2.7 feet lower than the elevation when I last wrote you on September 14 of this year. West Point Lake elevation is at 622.2 feet. This is approximately thirteen feet below its normal pool level, and only two feet

away from the bottom of its conservation pool. Elevation at Lake Walter F. George is at 185.2 feet, which is only a foot away from its inactive storage.

## GEORGIA'S CONSERVATION MEASURES

Georgia takes seriously its obligation to conserve water under these drought conditions. In response to these exceptional drought conditions, on September 28, 2007, I took the unprecedented step of imposing the highest level of restrictions on water use in our state's history. Since imposing these restrictions, we have already seen a dramatic 15% drop in water use in the Atlanta metro area alone. Alarmed by the dire reality that the water sources they rely on are being drained and that they may not be refilled anytime soon, many communities and industries have gone beyond the state ban on outdoor watering by limiting other water uses and implementing even more rigorous conservation measures.

No specific restrictions on agricultural water use are currently in effect for the remainder of this year and the first two months of 2008, in part because agricultural consumption during the October-February timeframe is minimal. If drought conditions persist as projected, however, it is likely that prior to March 2008 I will declare a drought under the Flint River Drought Protection Act and trigger the agricultural demand reduction measures under that statute.

As we continue to monitor the drought and our water supplies, we will consider the additional, emergency measures that are legally available to the State and local governments and determine any that need to be taken. Reducing and managing consumptive demands is a major focus of our drought response and emergency planning.

## MODELING AND PROJECTION OF THE ACF RESERVOIRS

We have continued to update our computer models of the potential impact of the IOP going forward, particularly over the next several months. During an ACF Basin drought conference call with stakeholders several weeks ago, the Corps of Engineers announced that in light of the record-low rainfall and inflows, it had modeled the effect of the IOP over the next three months assuming the hydrological scenarios: that basin inflow for each day will be at the (a) 2% non-exceedence level (that is, basin inflow will be within the lowest 2% in history), (b) 5% non-exceedence level, and (c) 10% non-exceedence level. On October 4, 2007, the Corps provided us with those computer models. These models, the outputs of which are shown in the attached Figures 8 through 11, paint a very grim picture. Assuming that basin inflow will be at the 10% level, Lake Lanier would fall to the extreme level of below 1048 feet by the end of this year (and 1044 feet by the end of February 2008, as shown in Figures 8 and 16). Both West Point Lake and Lake Walter F. George would hover around the bottom of their conservation pools from late November through at least the first two months of 2008 (Figures 9, 10, 17, and 18). If one assumes that basin inflow will be at the 5% or 2% levels, the results will, of course, be even worse. Lake Lanier would fall as low as 1039 feet by the end of this year and would empty before the end of January 2008 (Figure 12). West Point and Walter F. George would be empty beginning in November and would remain empty through next February (Figures 13 and 14). Of course, the serious effects of draining the lakes would be felt throughout 2008 and perhaps for years to come.

The effects of draining the federal reservoirs to these levels would be felt throughout the ACF Basin. Water supply intakes in Lake Lanier begin to be exposed as the Lake falls to the lower

1050's. At a level of 1039 feet, nearly all water supply intakes would be exposed, and at 1035 feet the lake is effectively empty and unable to provide for any water supply or flow augmentation. Water supply intakes at West Point Lake would be in jeopardy at the projected lake levels. At the bottom of the Basin, the flow in the Apalachicola River would plummet below the 5,000 cfs flow that the Corps has expended so much storage to maintain. Using the Corps' model, we see that at the 5% and 2% basin inflow levels, the flow in the Apalachicola River at the Chattahoochee gage falls to well below 1,000 cfs (Figure 11). As under any of these scenarios the lakes will begin next year extremely low and not have an appreciable opportunity to refill, it is reasonable to expect that the flow in the Apalachicola River would fall even lower in 2008.

## NECESSARY SHORT-TERM MODIFICATIONS TO THE IOP

The foregoing illustrates that if the Corps continues to expend massive quantities of reservoir storage to provide a flow of 5,000 cfs, and not to store a substantial amount of the basin inflows, it will risk creating widespread water supply shortages affecting millions of people within Georgia and a steep drop in the flows available to meet the needs of endangered species in the Apalachicola River. Informed by this data, the Corps clearly has no choice but to alter its ACF reservoir operations immediately.

It is apparent that the Corps must cease immediately augmenting basin inflows for the production of any specific minimum flow in the Apalachicola River. While basin inflows are below 5,000 cfs, the Corps should only make releases from Jim Woodruff Dam equivalent to basin inflow. When rainfall events produce a basin inflow in excess of 5,000 cfs, the Corps should release no more than 5,000 cfs. The flow in the Apalachicola River has been at the 5,000 cfs level essentially all summer and early fall. Temporary pulses of more than 5,000 cfs in reaction to rainfall events will provide no benefit to the endangered species that the Corps is seeking to protect. The Corps should eliminate any rampdown restrictions. While flows are within the range of 5,000 cfs or less, the reduction in flows will roughly follow natural drops and will not be severe. Moreover, rampdown restrictions have the perverse effect of causing reservoir storage to fall after rainfall events, as the amount of storage used during the rampdown often exceeds the amount of any storage gained during the rainfall event.

The modeling of these adjustments to the IOP indicates that they will significantly benefit the federal reservoirs and help prevent a more precipitous drop in the flow in the Apalachicola River. Figures 12 through 15 compare the projected results of these modified reservoir operations against the IOP assuming that basin inflow at the 2% non-exceedence level, and Figures 16 through 19 make the same comparison at the 10% non-exceedence level.

Assuming basin inflows at the 2% level, these modifications to the IOP would keep Lake Lanier approximately ten feet higher at the end of this year and through February 2008, and would prevent West Point Lake and Walter F. George from emptying this year. The modeling suggests that modifications to reservoir balancing would be needed under this scenario to prevent West Point and Walter F. George from reaching the bottom in 2008. Under these assumptions, after an initial drop, the flow in the Apalachicola River would be more stable than under the IOP, and the minimum flow in the Apalachicola River would be more than 1,000 cfs higher than the minimum flow that would be experienced under the IOP. Thus, there are benefits throughout the basin.

Assuming the more optimistic scenario that basin inflow at the 10% level, Lake Lanier would be approximately seven feet higher as of the end of the year if the IOP is modified and would be more than ten feet higher at the end of February 2008. As with the 2% basin inflow scenario, the proposed modifications would save West Point Lake and Lake Walter F. George from emptying this year, just barely, and would produce more significant benefits to those lakes in January and February of 2008. At the 10% basin inflow level, the flow in the Apalachicola River would be near the 5,000 cfs level most of the time as basin inflow would be at or above 5,000 cfs for much of that time. Under this scenario, the significant benefits to reservoir storage outweigh the reduction in flow in the Apalachicola River.

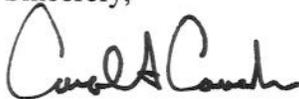
#### DISCUSSIONS ON LONGER-TERM MODIFICATIONS SHOULD BEGIN NOW

The above changes are proposed as immediate and short-term, to avoid exhaustion of reservoir storage over the next four and a half months. These, of course, are not the only or final modifications that will be needed to the IOP. The experience of this year demonstrates that significant long-term, year-round adjustments to the IOP are needed. If the Corps does not make changes to the rules that will apply during the next Gulf sturgeon spawning period (March-May) and the remainder of next year, we may well end up in the same spot next year, or even worse. The above changes will, however, address the emergency situation and give the Corps an opportunity to undertake discussions with the Fish and Wildlife Service and the affected States on the longer-term changes that are needed. Georgia commits to be fully engaged in such discussions and encourages the Corps to include Florida and Alabama in considering longer-term modifications.

#### REQUEST FOR RESPONSE

In light of the exigent circumstances, I need your prompt response to this request for specific alteration of the reservoir operating rules under the IOP. Given that time is of the essence, please inform me in writing no later than October 17, 2007 as to whether you intend to make these changes so that Georgia can assess its options.

Sincerely,



Carol A. Couch

cc: Brigadier General Joseph Schroedel, South Atlantic Division, U.S. Army Corps of Engineers  
Governor Sonny Perdue  
Ms. Joanne Brandt, Corps of Engineers Inland Environmental Team  
Mr. Onis Trey Glenn, Alabama Department of Environmental Management  
Mr. Michael Sole, Secretary, Florida Dept. of Environmental Protection

**Cumulative Mar-Aug Precipitation Deficits (2007, 1986, 1988 and 2000)  
in Georgia Climatic Divisions**

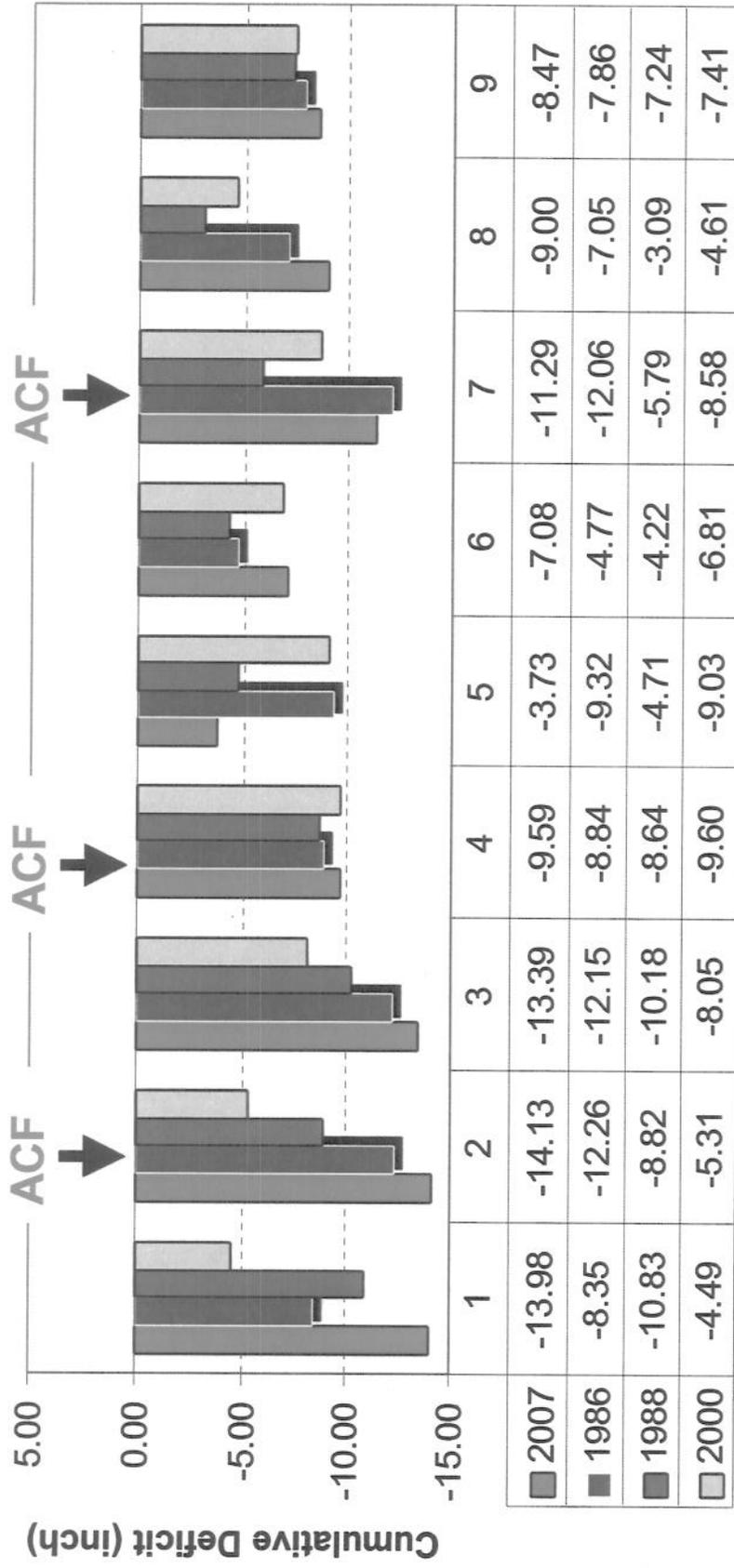


Fig. 1 Six-month precipitation deficits in Georgia Climatic Divisions as compared to those of previous severe drought years

**Lowest May-August Streamflow in Georgia Climatic Division 2,  
Chestatee River near Dahlonega (USGS 02333500)**

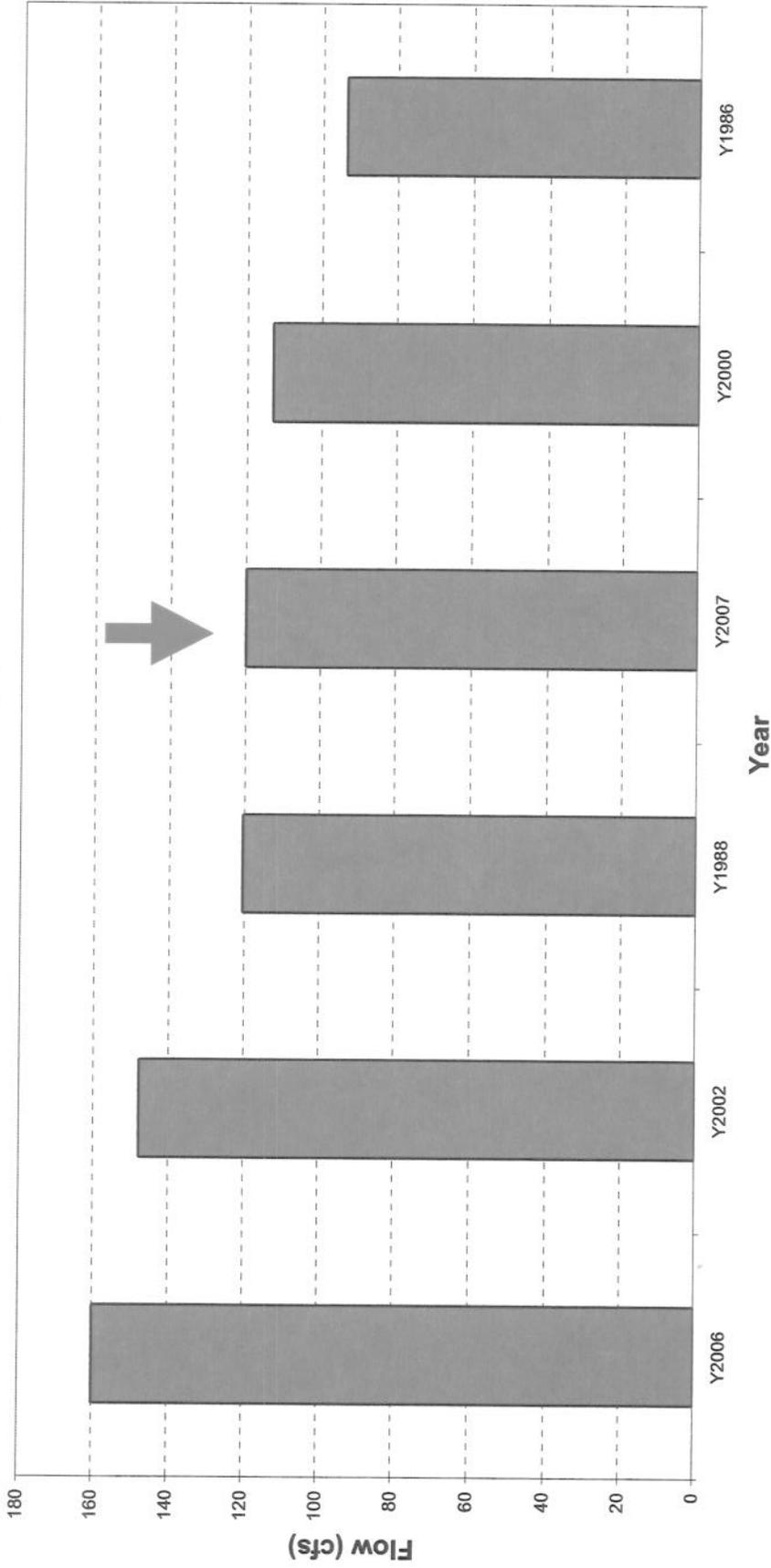


Fig. 2 Low stream flow at Chestatee River in 2007 as compared to those in previous severe drought years

**Lowest May-August Streamflow in Georgia Climatic Division 3,  
Chattahoochee River near Cornelia (USGS 02331600)**

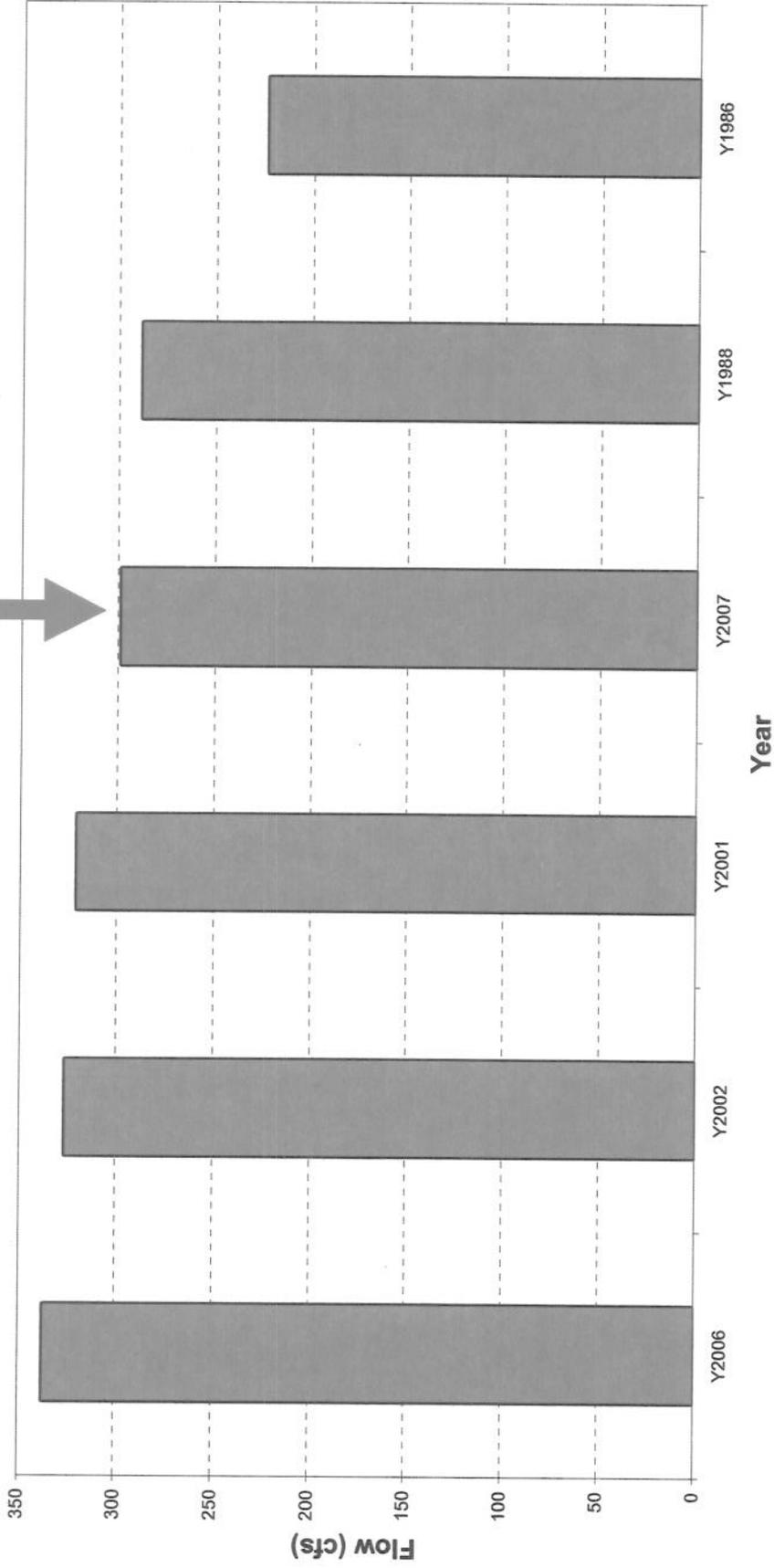


Fig. 3 Low stream flow at Chattahoochee River in 2007 as compared to those in previous severe drought years

**Lowest May-August Streamflow in Georgia Climatic Division 4,  
Flint River at Montezuma (USGS 02349500 or 02349605)**

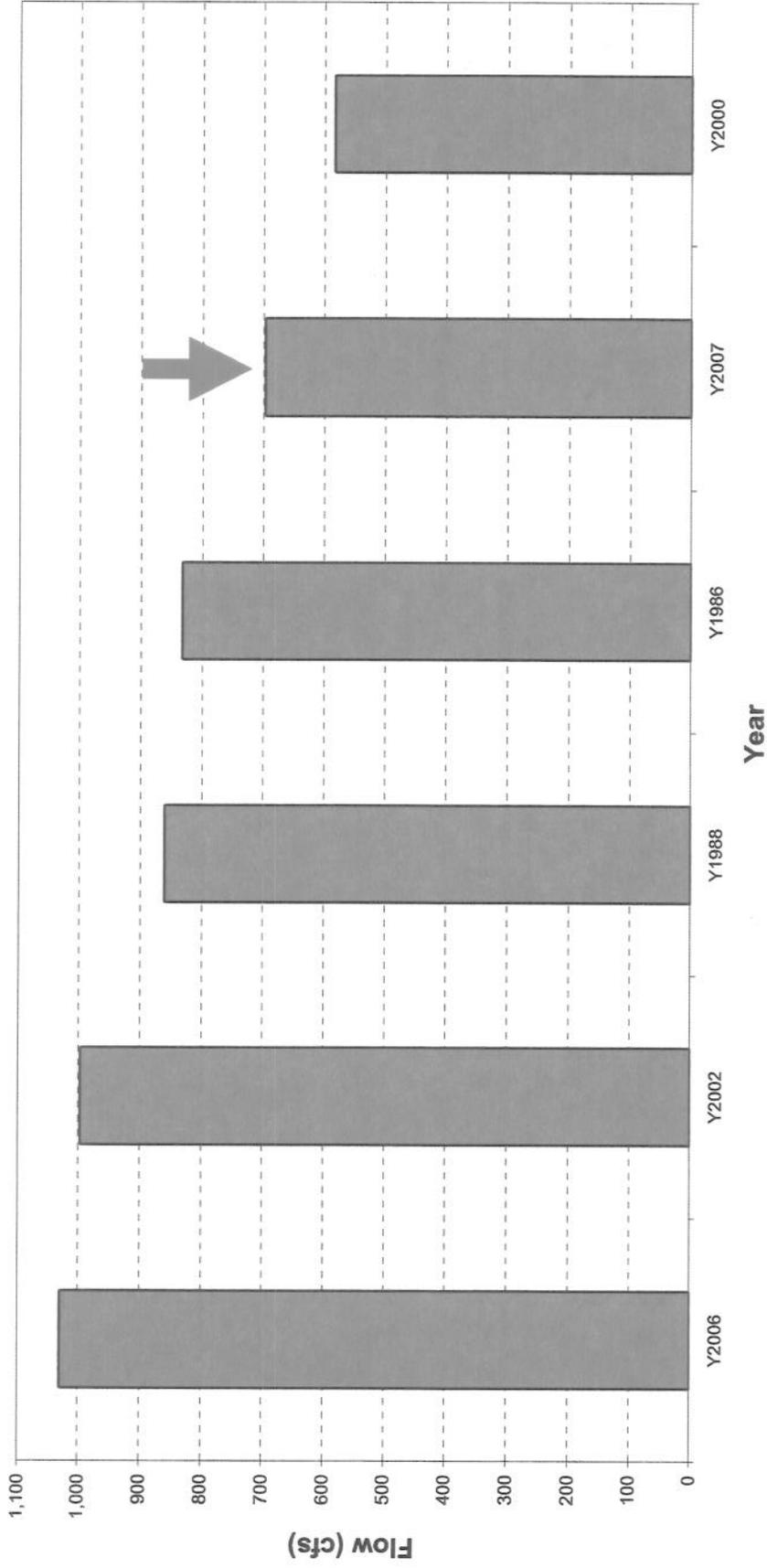


Fig. 4 Low stream flow at Flint River in 2007 as compared to those in previous severe drought years

**Lowest May-August Streamflow in Georgia Climatic Division 7,  
Ichawaynochaway Creek at Milford (USGS 02353500)**

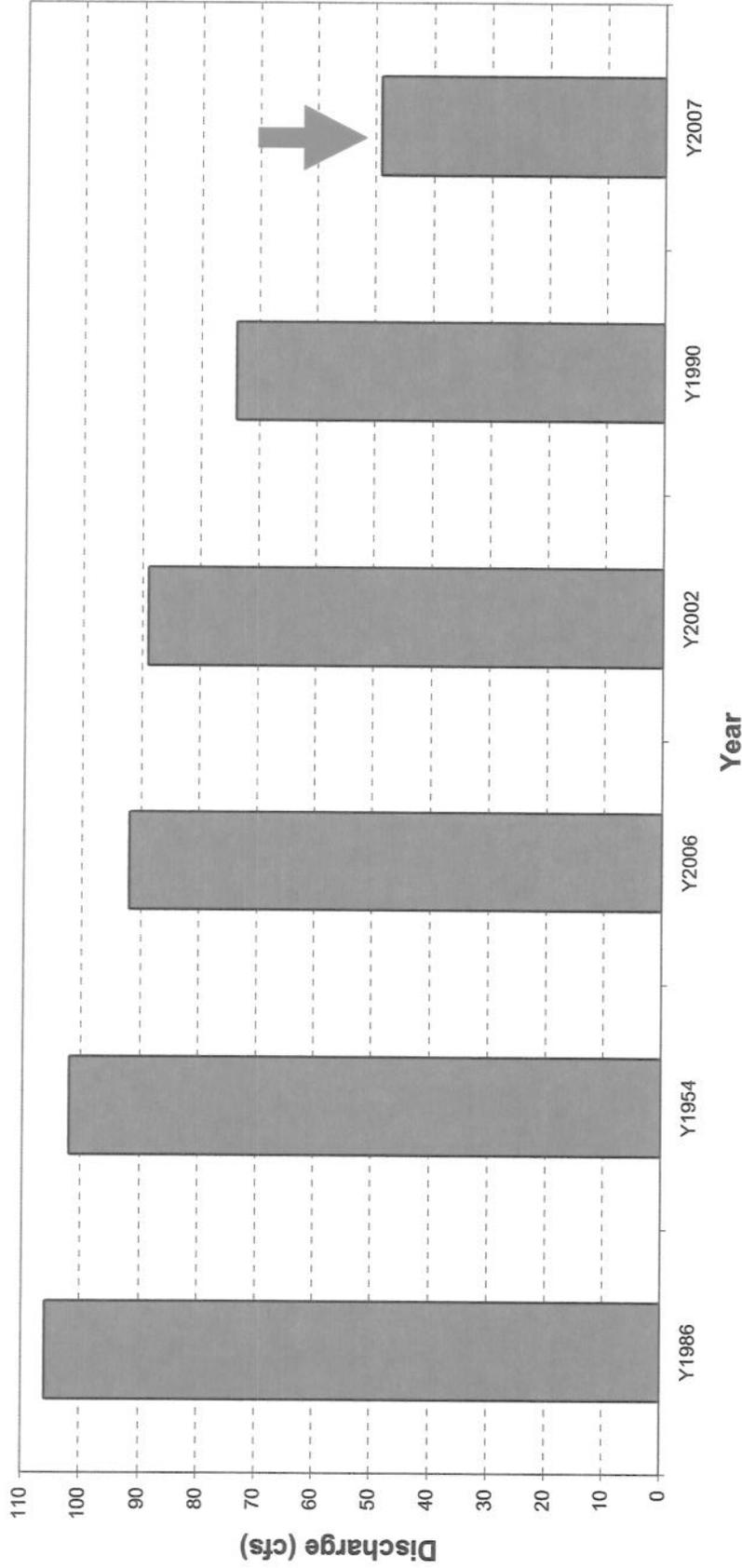


Fig. 5 Low stream flow at Ichawaynochaway Creek in 2007 as compared to those in previous severe drought years

Daily Basin Inflow Comparison between 2000 and 2007

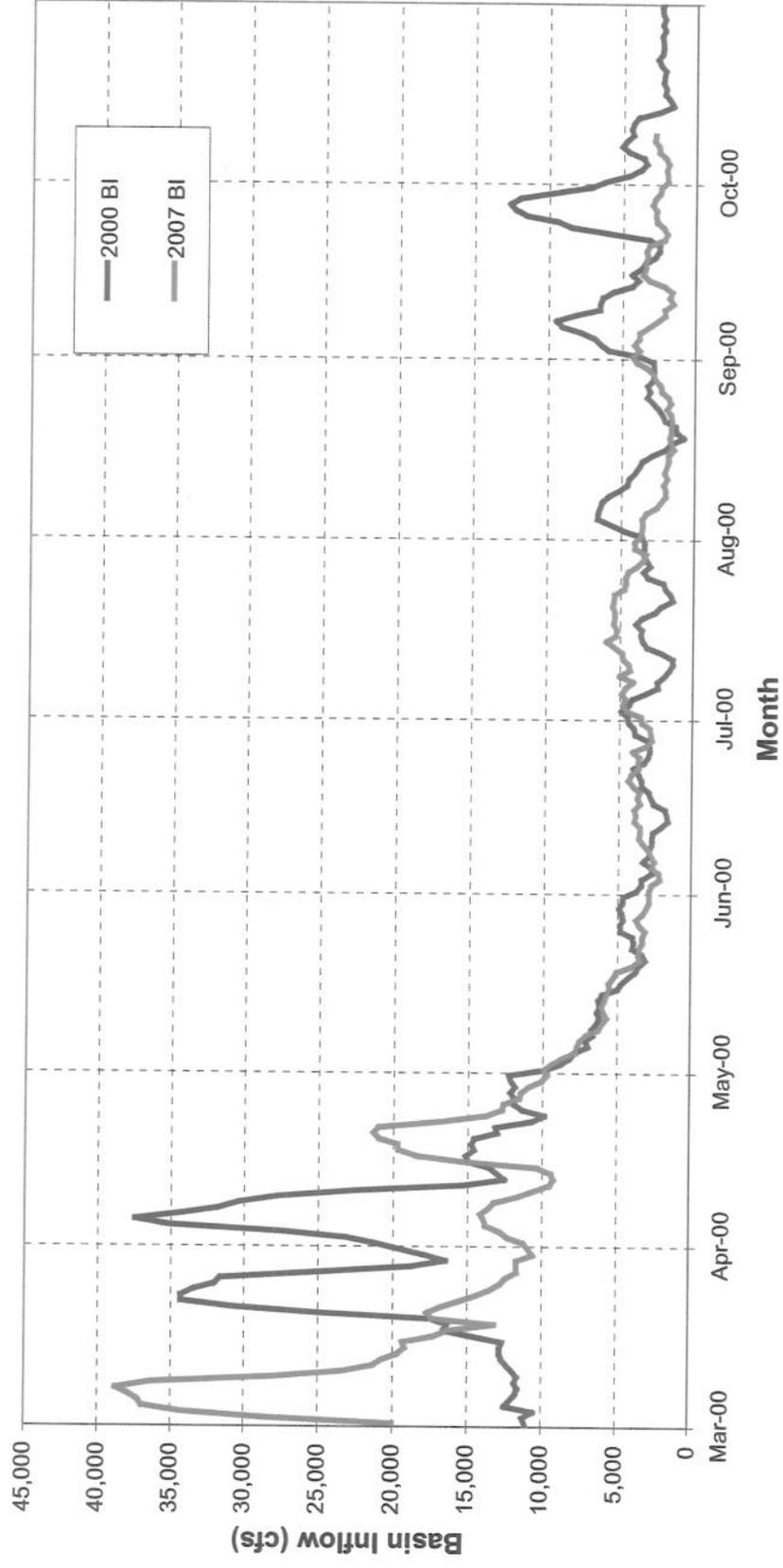


Fig. 6 Basin Inflow of 2007 compared to that of 2000

# COMPOSITE CONSERVATION STORAGE OF ACF SYSTEM IN 2007

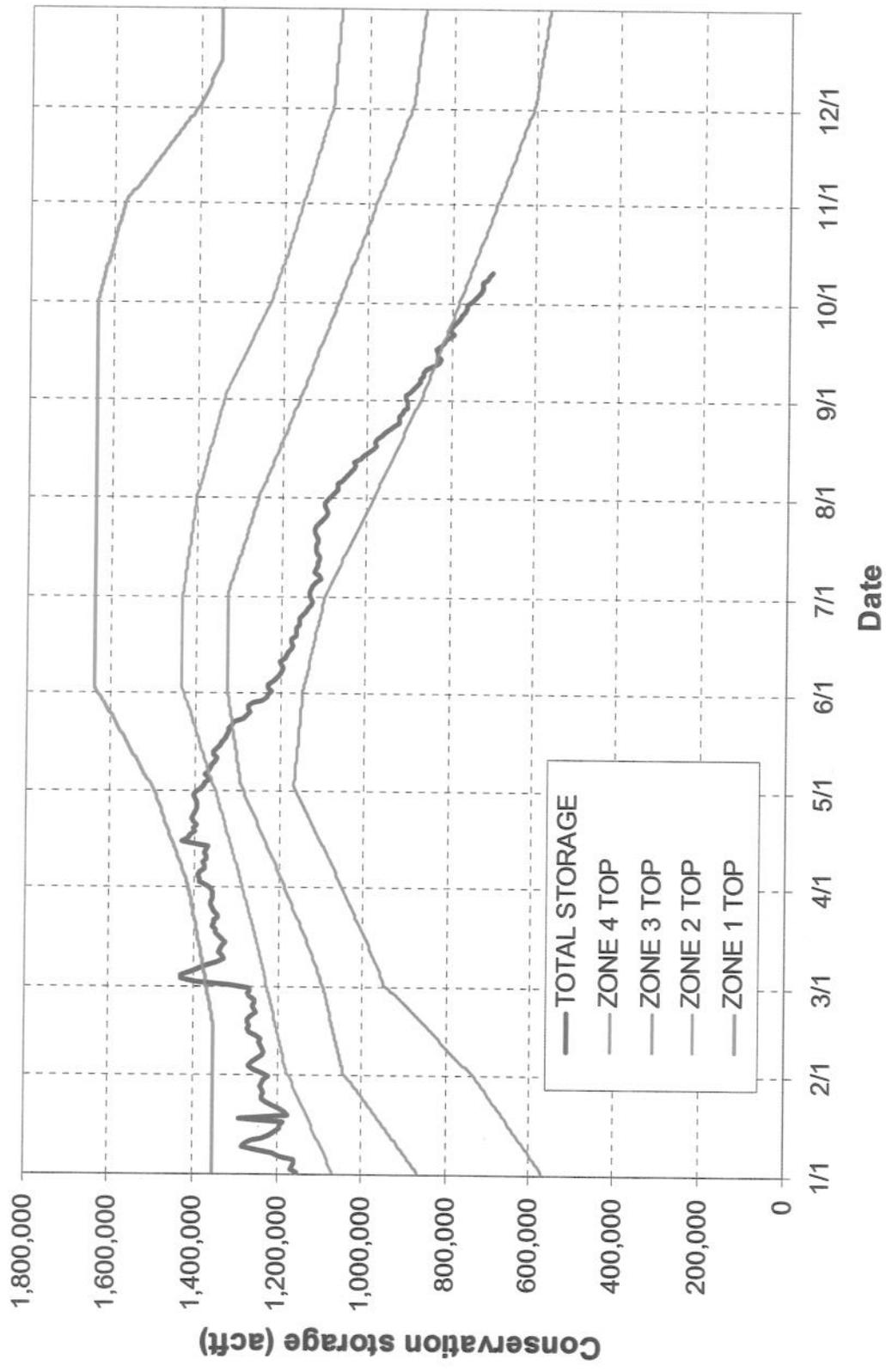


Fig. 7 Composite system storage in the ACF Basin in 2007

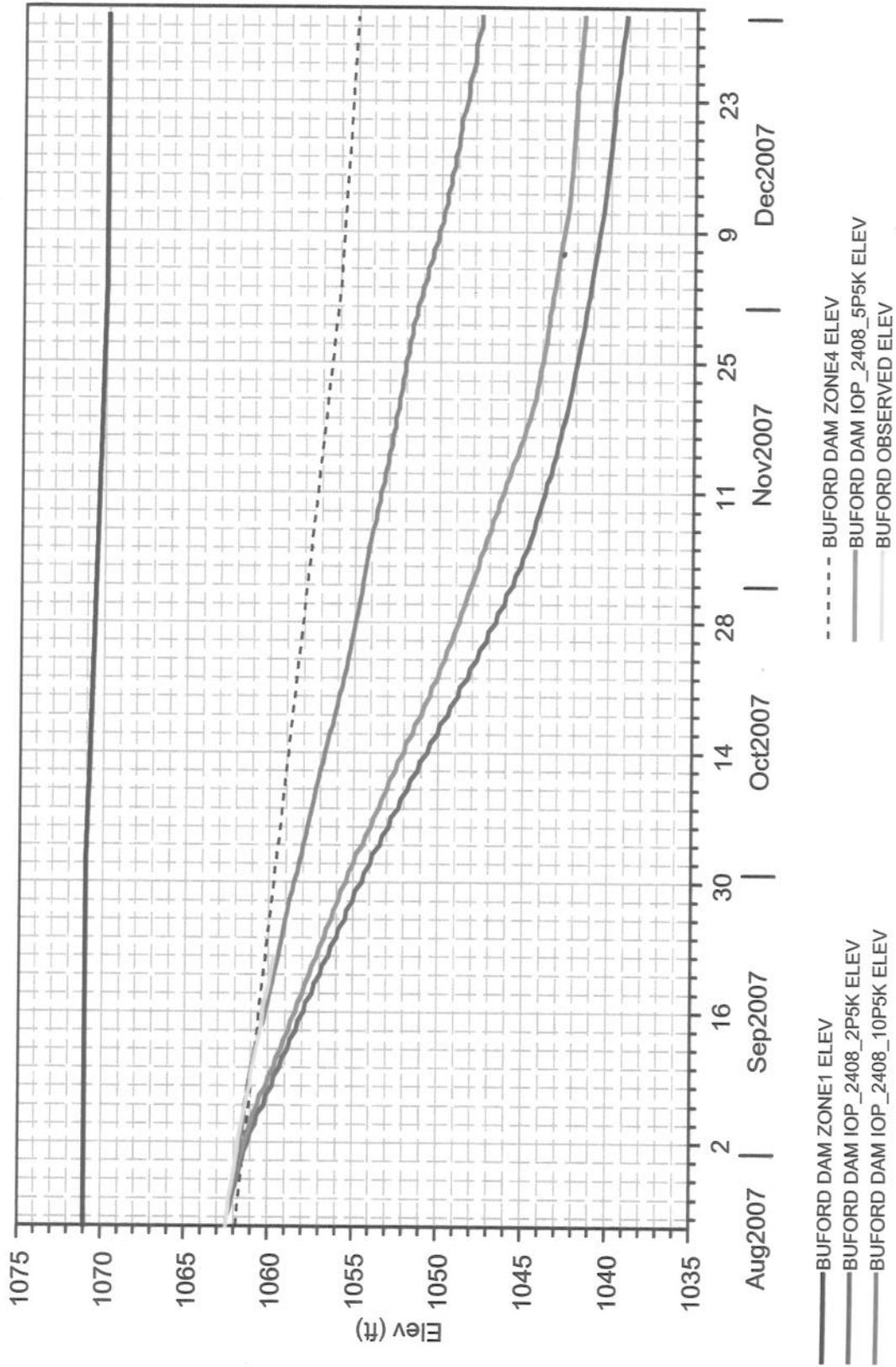


Fig. 8 Year 2007 Lanier elevation projected by the Corps of Engineers

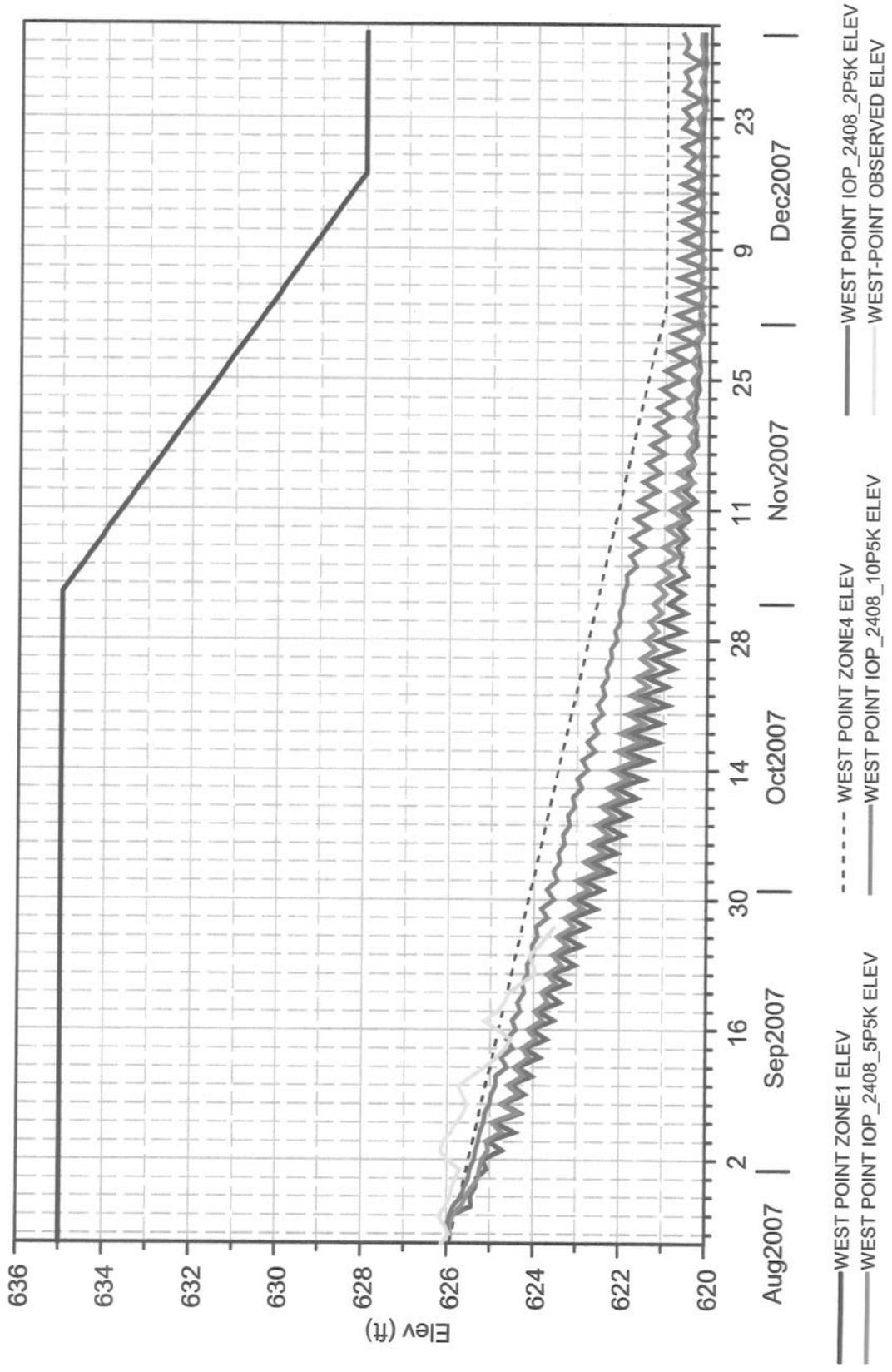


Fig. 9 Year 2007 West Point elevation projected by Corps of Engineers

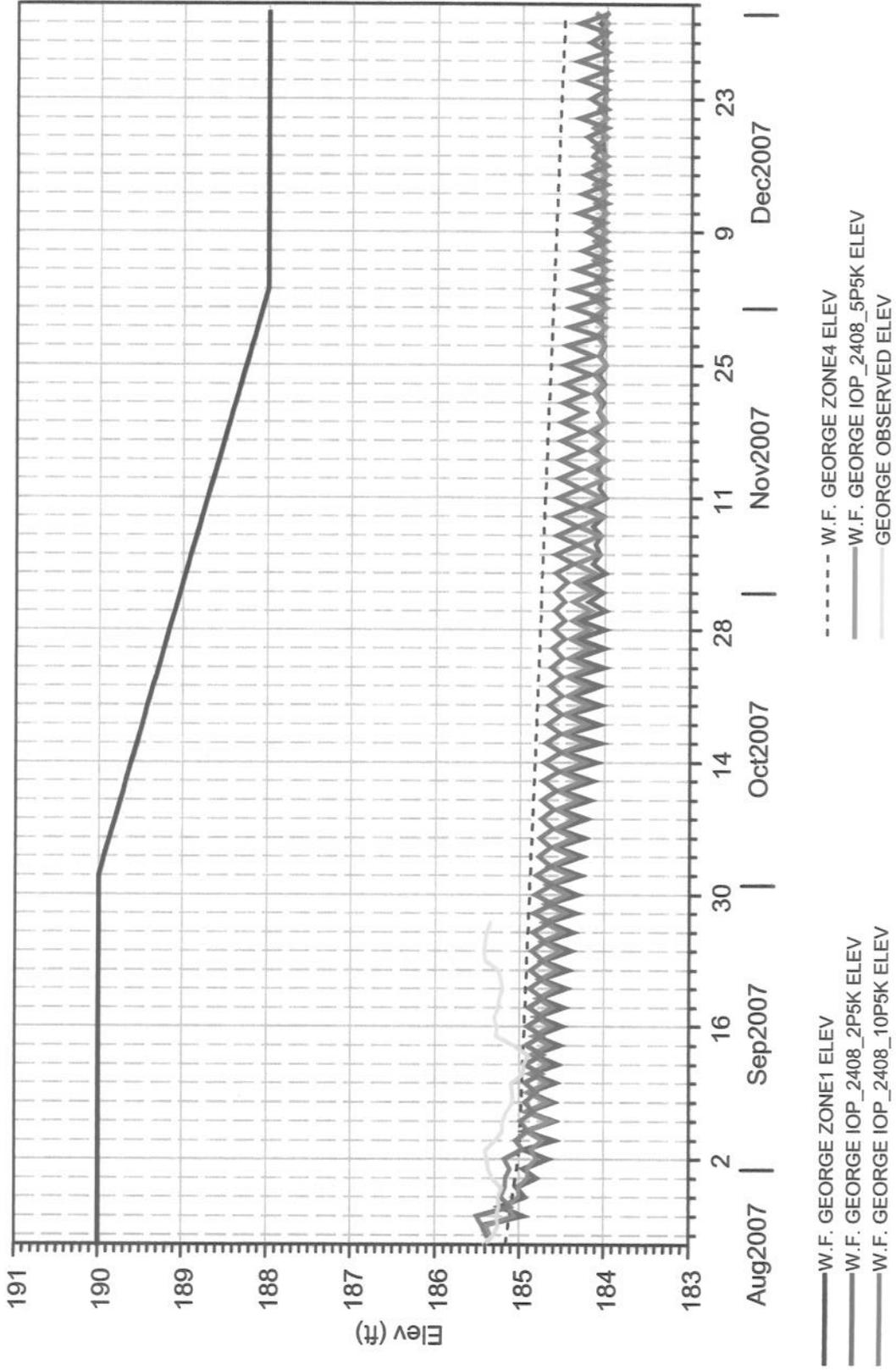


Fig. 10 Year 2007 Walter F. George elevation projected by Corps of Engineers

**PREDICTED CHATTAHOOCHEE DISCHARGE  
(7-DAY AVERAGE) IN 2007**

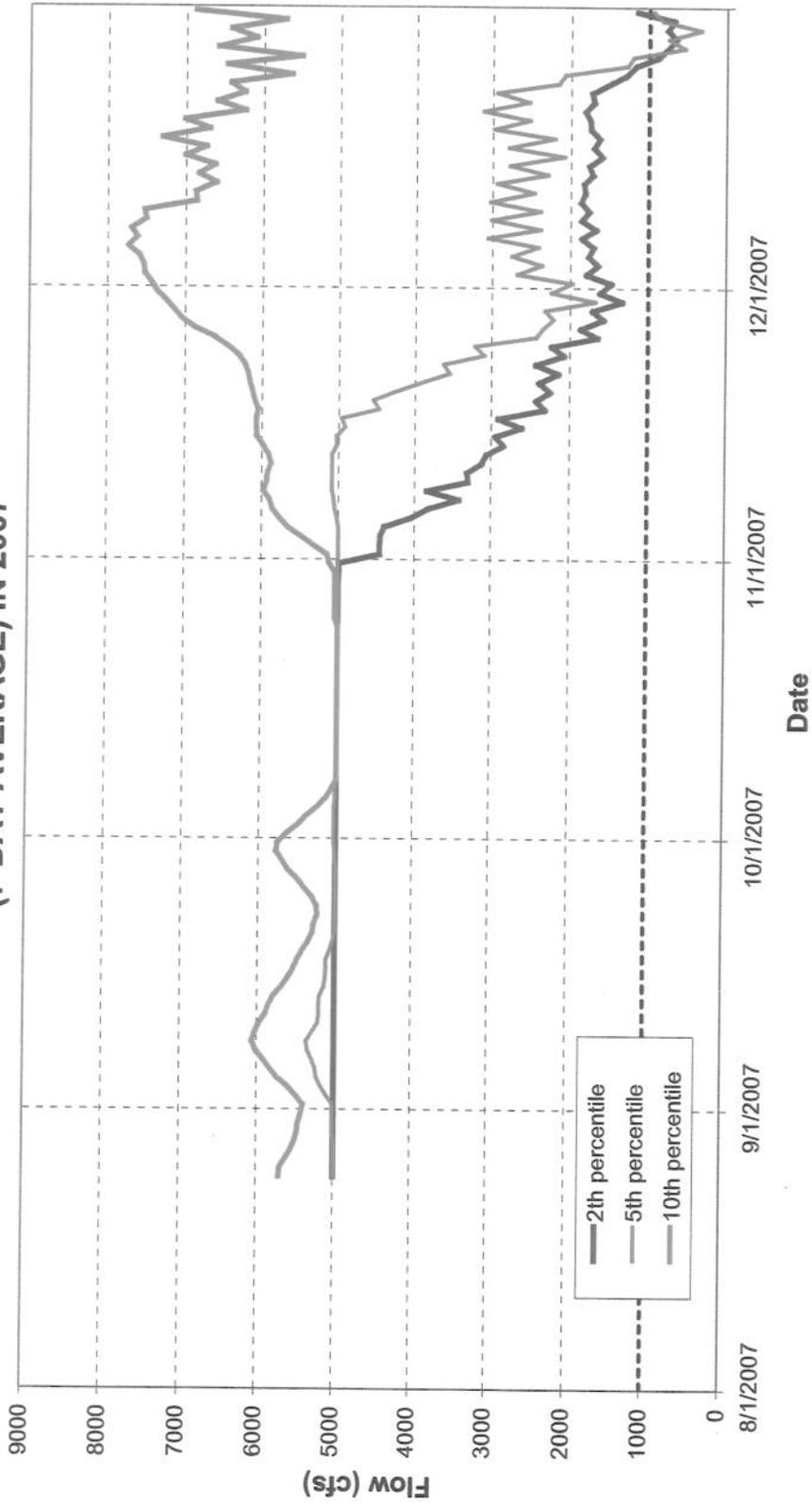


Fig. 11 Year 2007 flow at Chatahoochee, Florida projected by Corps of Engineers' model

**PREDICTED LAKE LANIER ELEVATION IN 2007-2008  
WITH 2nd PERCENTILE UNIMPAIRED FLOW**

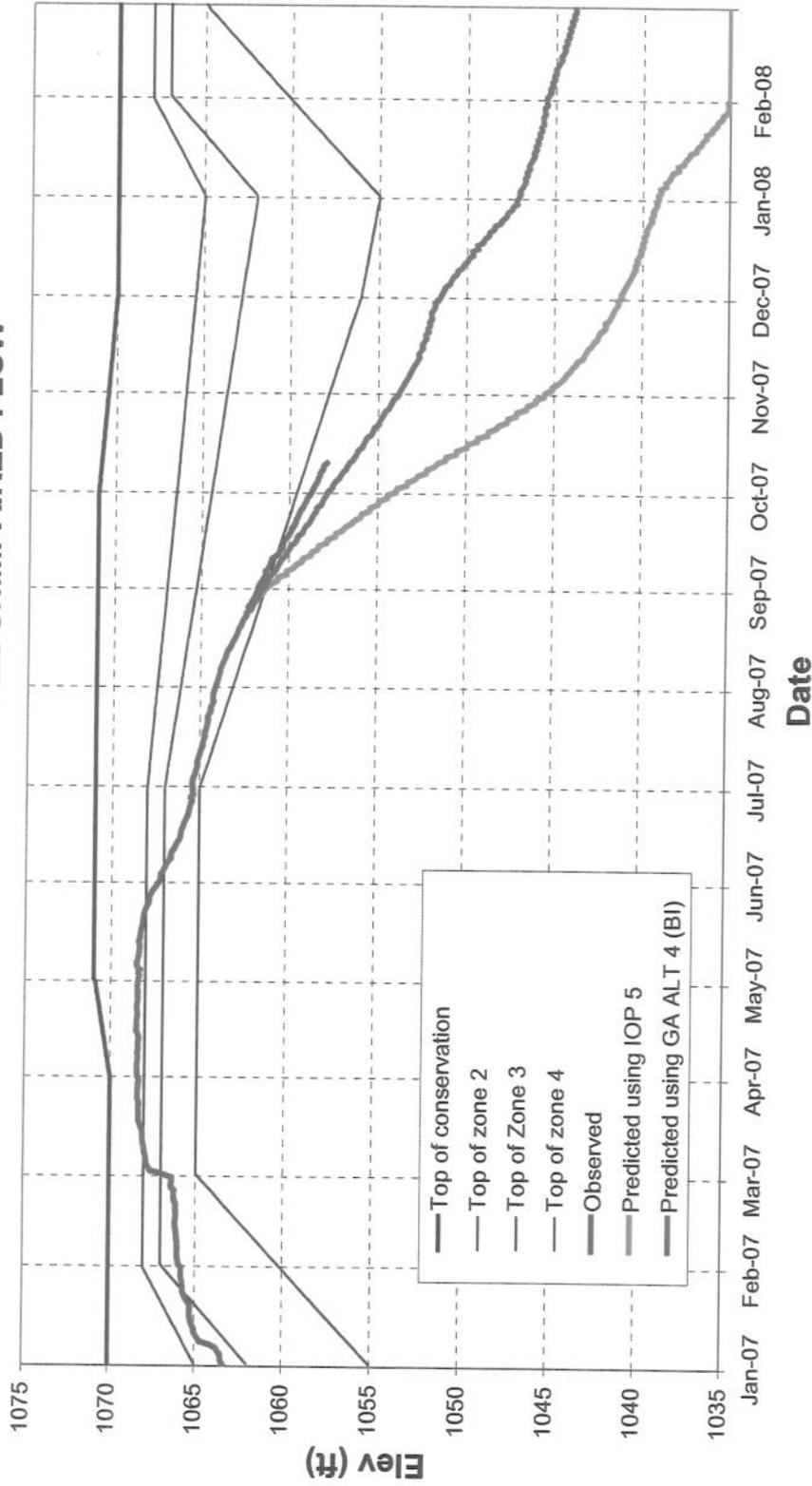


Fig. 12 Effects of emergency measures proposed by Georgia on Lanier elevation (using Corps model and 2 percentile hydrology)

**PREDICTED WEST POINT ELEVATION IN 2007-2008 WITH 2nd PERCENTILE UNIMPAIRED FLOW**

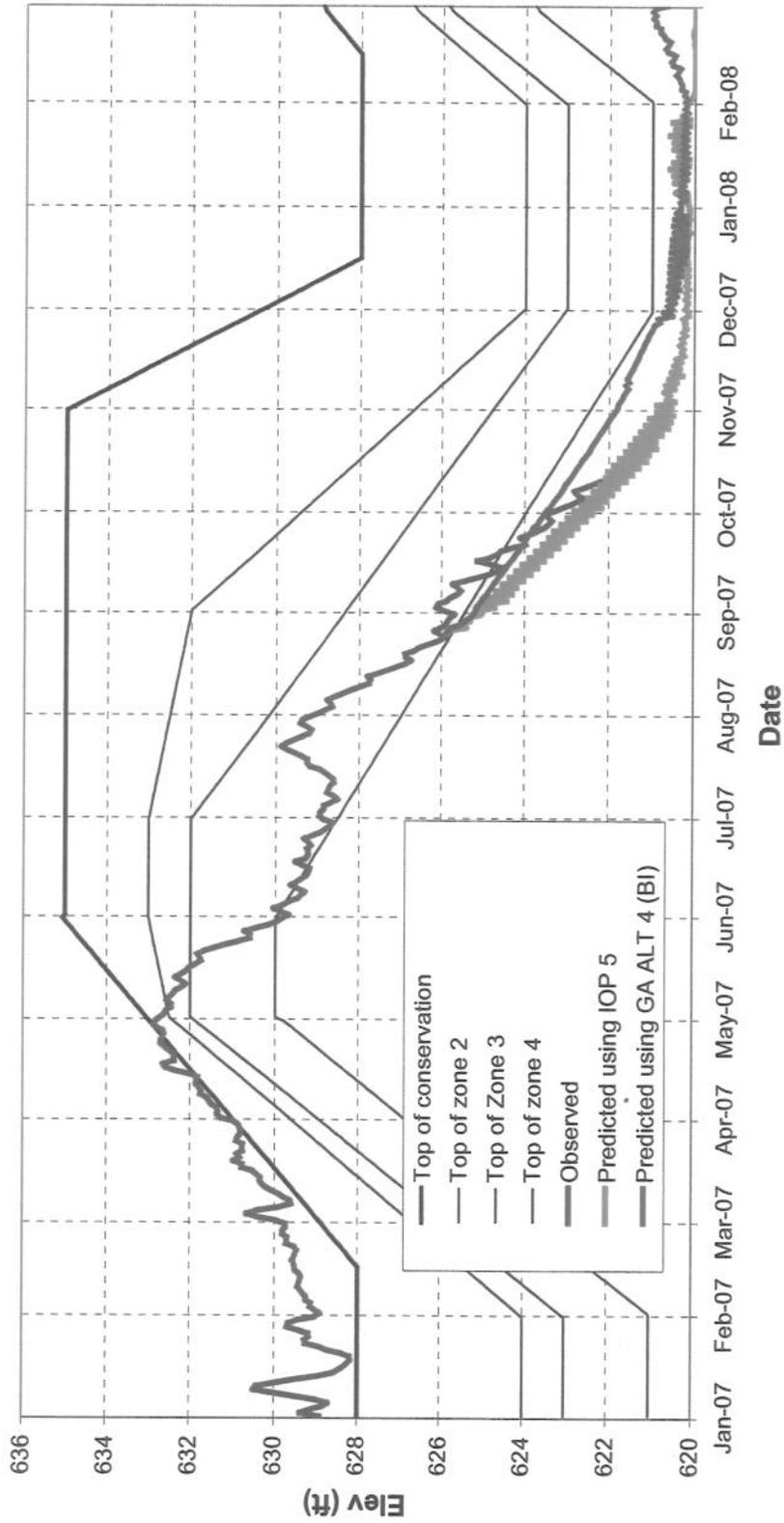


Fig. 13 Effects of emergency measures proposed by Georgia on West Point elevation (using Corps model and 2 percentile hydrology)

**PREDICTED W.F. GEORGE ELEVATION IN 2007-2008  
WITH 2nd PERCENTILE UNIMPAIRED FLOW**

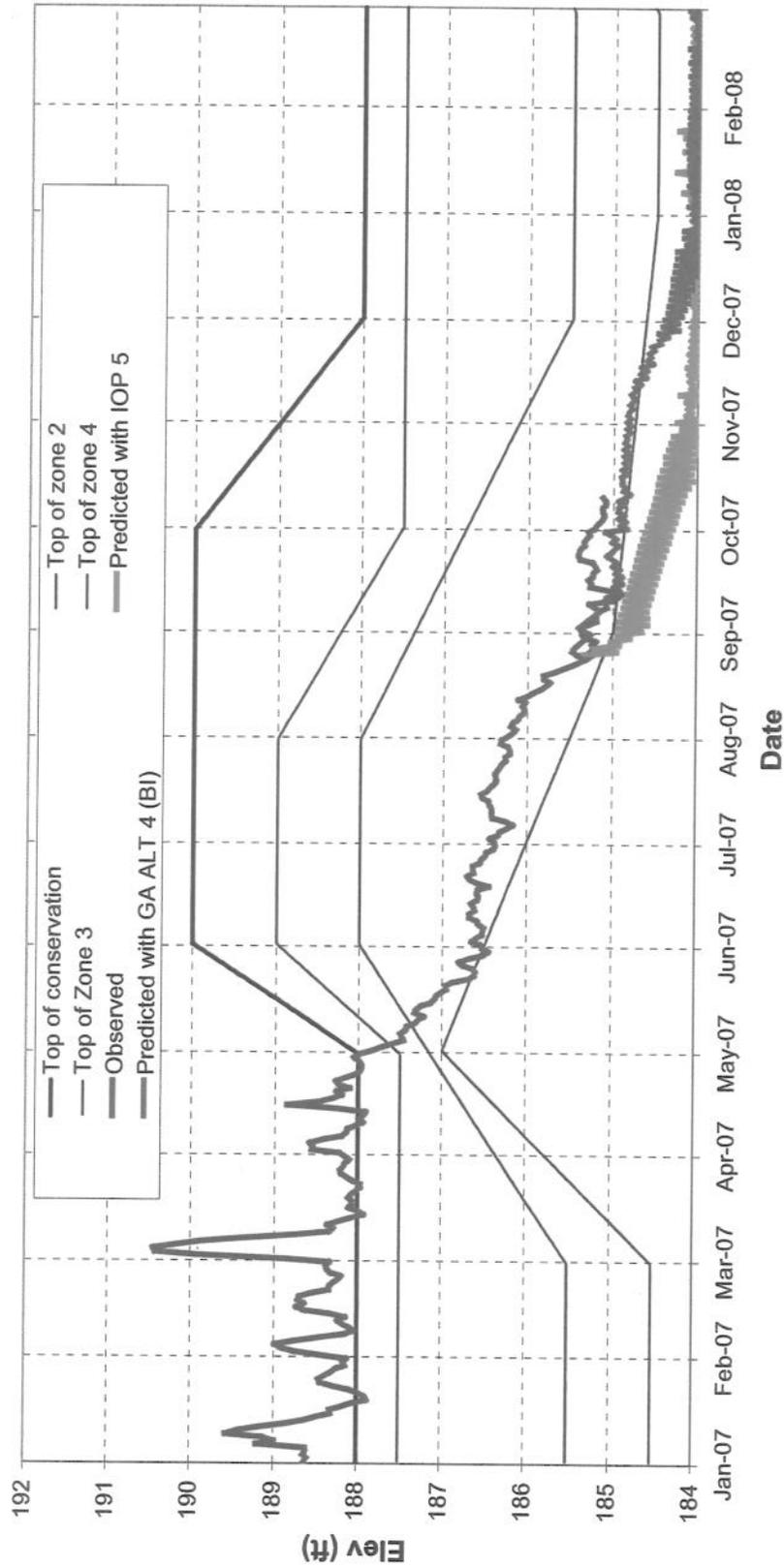


Fig. 14 Effects of emergency measures proposed by Georgia on W.F. George elevation (using Corps model and 2 percentile hydrology)

**PREDICTED CHATTAHOOCHEE DISCHARGE IN 2007-2008  
WITH 2nd PERCENTILE UNIMPAIRED FLOW**

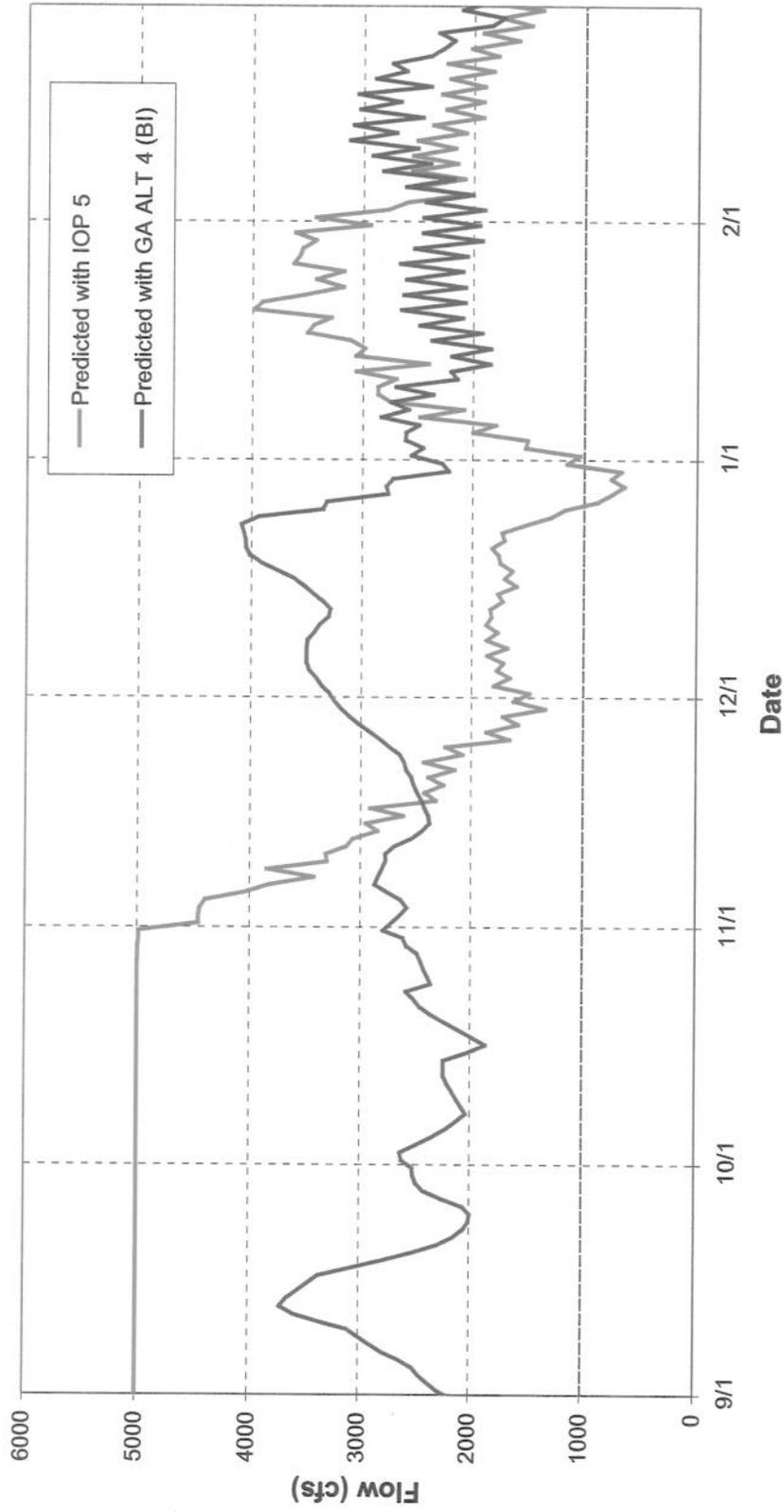


Fig. 15 Flow at Chattahoochee, Florida under the proposed changes to the IOP (Corps' 2 percentile hydrology)

**PREDICTED LAKE LANIER ELEVATION IN 2007-2008  
WITH 10th PERCENTILE UNIMPAIRED FLOW**

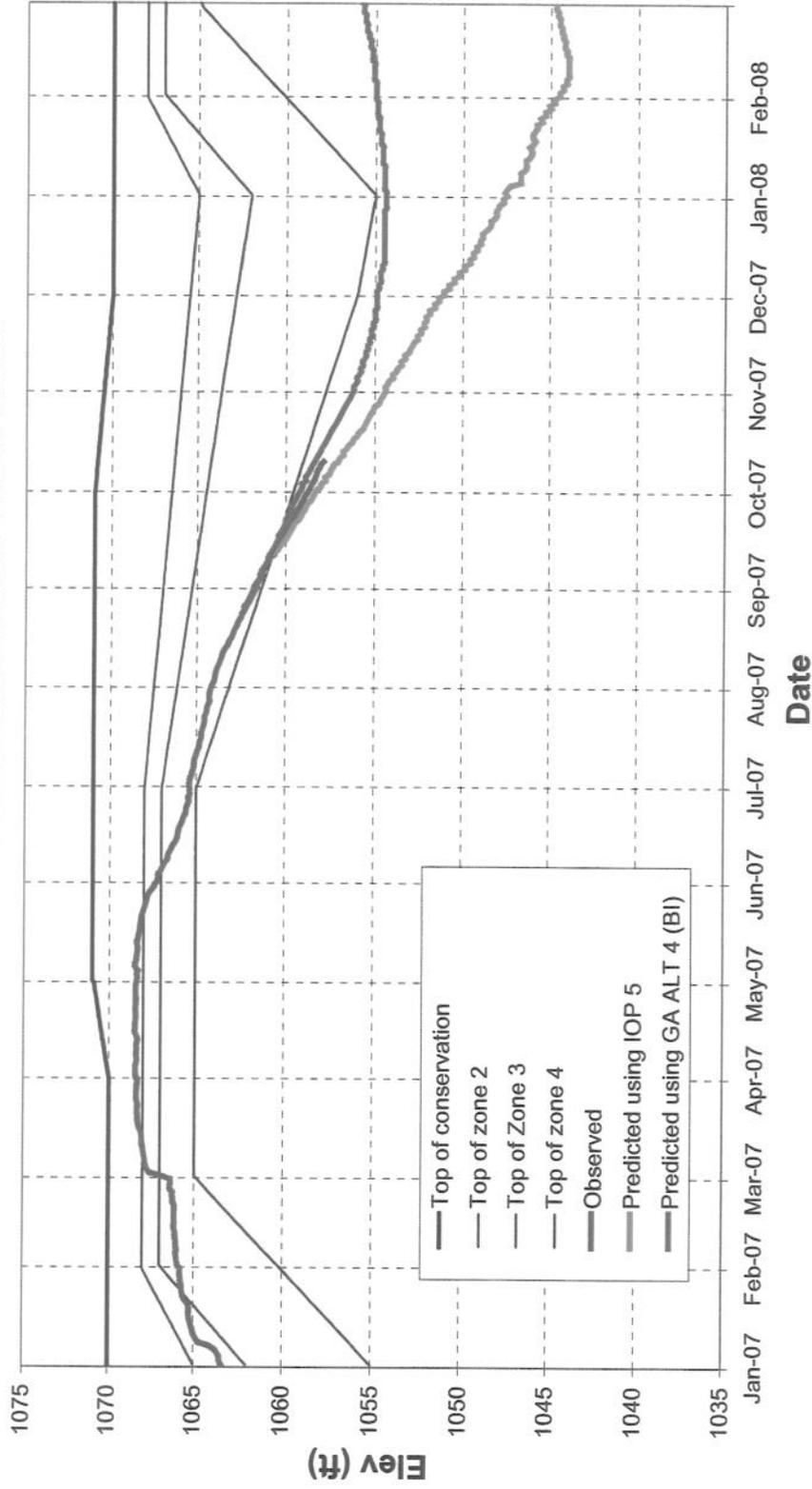


Fig. 16 Effects of emergency measures proposed by Georgia on Lanier elevation (using Corps model and 10 percentile hydrology)

**PREDICTED WEST POINT ELEVATION IN 2007-2008 WITH 10th PERCENTILE UNIMPAIRED FLOW**

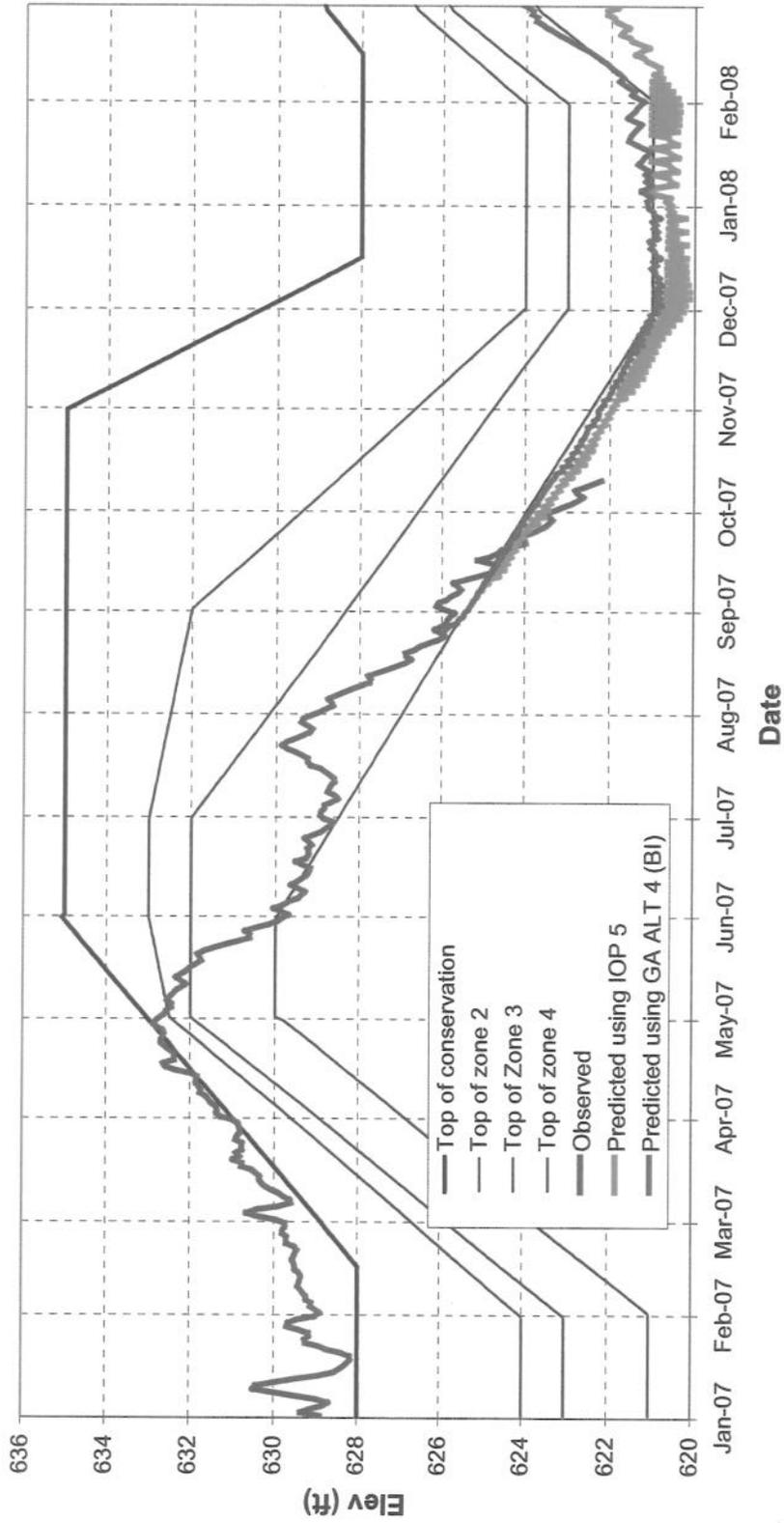


Fig. 17 Effects of emergency measures proposed by Georgia on West Point elevation (using Corps model and 10 percentile hydrology)

**PREDICTED W.F.GEORGE ELEVATION IN 2007-2008  
WITH 10th PERCENTILE UNIMPAIRED FLOW**

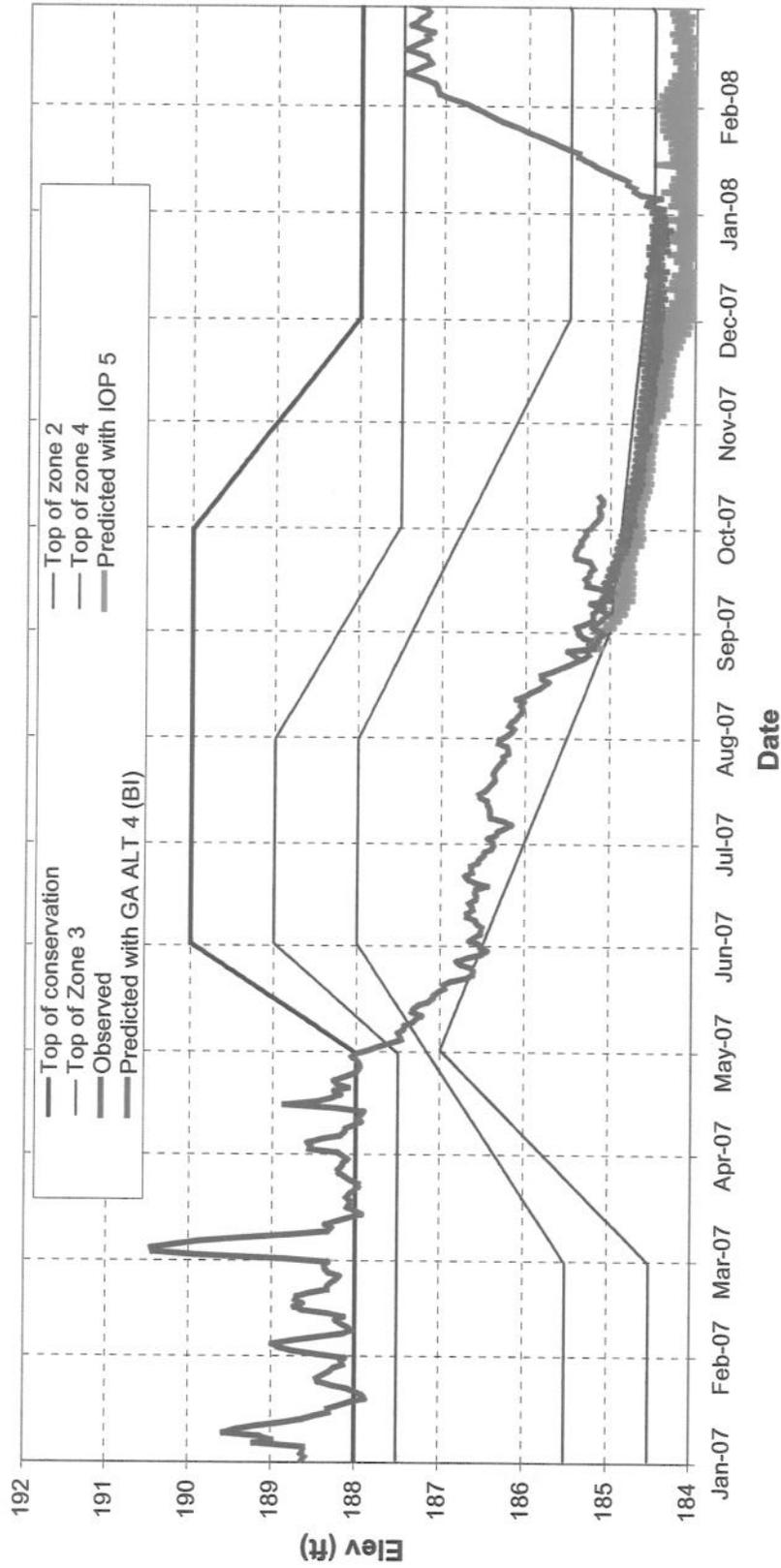


Fig. 18 Effects of emergency measures proposed by Georgia on W.F. George elevation (using Corps model and 10 percentile hydrology)

**PREDICTED CHATTAHOOCHEE DISCHARGE IN 2007-2008  
WITH 10th PERCENTILE UNIMPAIRED FLOW**

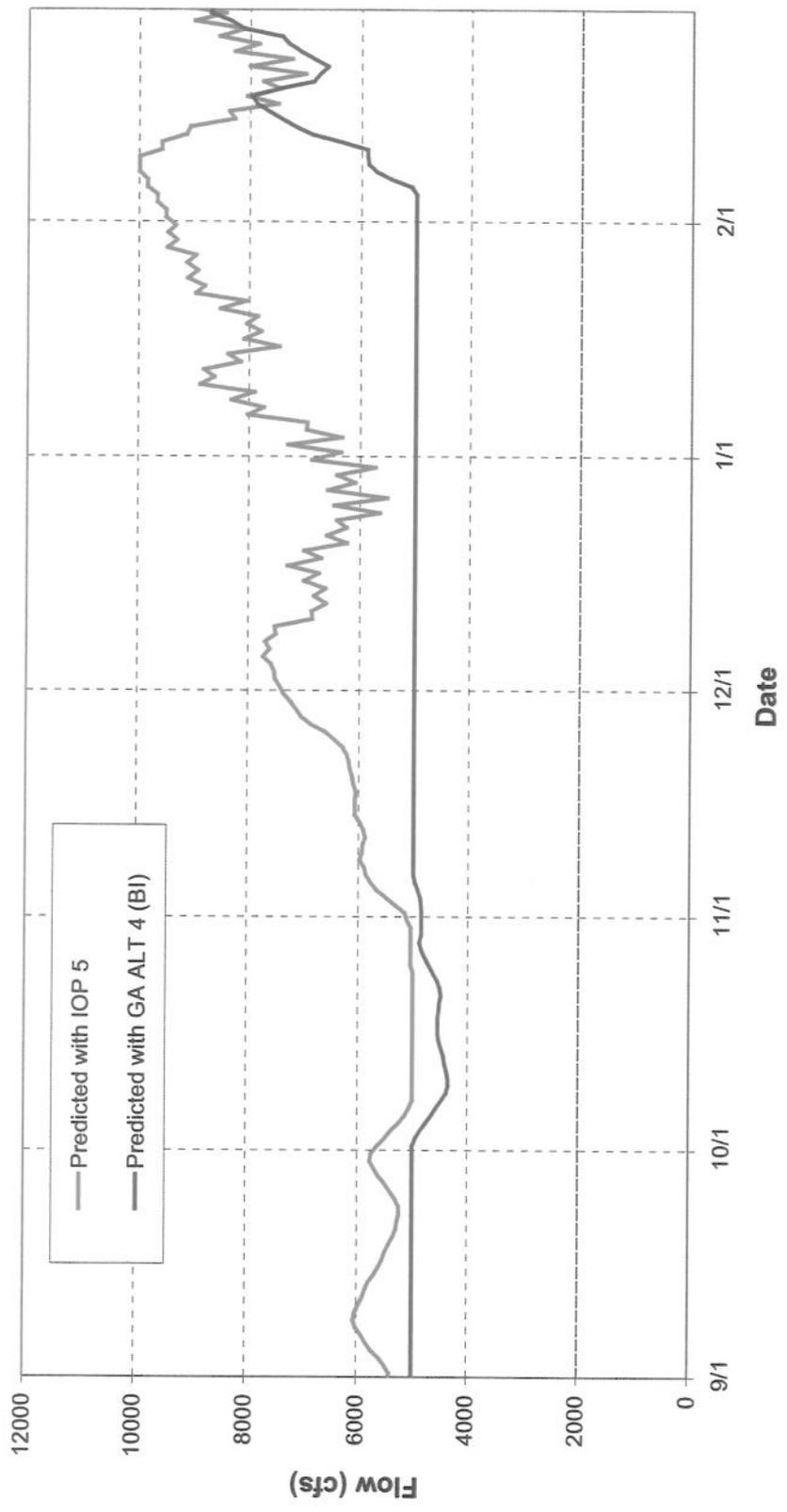


Fig. 19 Flow at Chattahoochee, Florida under the proposed changes to the IOP (Corps' 10 percentile hydrology)

OFFICE OF THE GOVERNOR

**BOB RILEY**  
GOVERNOR



STATE CAPITOL  
MONTGOMERY, ALABAMA 36130

(334) 242-7100  
FAX: (334) 242-0937

STATE OF ALABAMA

October 22, 2007

VIA FACSIMILE AND U.S. MAIL

The Honorable George W. Bush  
President of the United States  
The White House  
1600 Pennsylvania Avenue  
Washington, DC 20502-0001

Re: Southeastern Drought Conditions

Dear Mr. President:

I am writing to express Alabama's strong opposition to the request by Governor Perdue of Georgia for certain presidential emergency actions to respond to the exceptional drought being experienced in the Southeast.

There is no question that the ongoing drought is severe and unprecedented. Alabama is suffering serious negative economic and environmental consequences as a result of the drought. While Alabama understands that it must bear its fair share of the pain from the drought, Alabama does not believe that it should bear more than its fair share.

Georgia, in essence, wants you to suspend all releases out of Lake Lanier beyond those needed for Atlanta-area water supply. That would be a radical step that would ignore the vital downstream interests of Alabama.

We trust that your legal staff has already determined that the Endangered Species Act does not provide the authority for the presidential action that Georgia seeks. Moreover, we are confident that, consistent with FEMA regulations, Alabama and all other interested states and parties will be consulted before FEMA makes any recommendation to you.

The Honorable George W. Bush  
October 22, 2007  
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Georgia has repeatedly framed its request as a contest between people in the Atlanta area and endangered mussels in Florida. Nothing could be further from the truth. In reality, the action that Georgia seeks will have dire consequences on people and their livelihoods downstream in Alabama.

Georgia ignores the fact that the Farley Nuclear Plant sits on the banks of the Chattahoochee River and requires cooling water from the Chattahoochee. Last Thursday, the Corps stated that the releases being made from Lake Lanier are the minimum necessary to maintain the required flow for cooling water at the nuclear plant. If Georgia obtained the presidential action it seeks, then there would likely be inadequate cooling water for the nuclear plant. That is obviously something that cannot be allowed to happen. At a minimum, the lack of adequate cooling water could require a shutdown of the plant, thereby putting the reliability of the electric power grid in the region at risk. The safety and sustainability of that plant is vital to the people and economy of our region.

The action that Georgia seeks would have consequences on people far beyond the nuclear plant. There are a number of industries that operate plants along the Chattahoochee, and those plants require an adequate flow in the river in order to assimilate their discharges. If Georgia obtains the ability to curtail flow support for the river, then those plants will likely have to close. The effects on the employees, their families, and their communities will be devastating if that happens.

Georgia has repeatedly stated in recent days that Lake Lanier has less than a 90-day supply of water available for people in Atlanta. That simply is not correct. As the Corps of Engineers confirmed last week, Lake Lanier has enough water to supply the needs of Atlanta and to maintain current levels of downstream flow support for over 260 more days, and that assumes that there will not be a single drop of rain during that period. As you may know, we are about to enter the rainy season for the region, and the level of Lake Lanier has risen considerably every year during the rainy season since it was constructed, even in drought years. Thus, we believe that Georgia has overstated the severity of the crisis in the Atlanta region. Statements by Corps officials suggest that they agree that the situation is not as dire as Georgia suggests.

There is no question that this is a time for careful management of the region's water. People in Alabama have made major sacrifices already in 2007 to address these issues. For example, in Birmingham, our state's largest metropolitan area, officials implemented stringent water control limits in June. No one in the Birmingham area was allowed to use a sprinkler or sprinkler system from June through September. Businesses and residences that exceeded their allotment of water paid stiff surcharges, and many municipalities

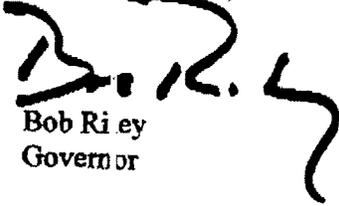
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finer violators. As a result of these proactive measures, the Birmingham region saved hundreds of millions of gallons of water and averted a shortage this fall.

What the State of Georgia is seeking from you is a unilateral transfer of decision-making authority over the water in the federal reservoir at Lake Lanier from federal to Georgia control. That reservoir was built with federal taxpayer dollars for certain congressionally authorized purposes, which did not include Atlanta-area water supply. While Alabama understands the needs of residents in Atlanta, we cannot stand by and allow Georgia to take control of the water in that reservoir to the detriment of the people who live and work downstream in Alabama.

Alabama has been sharing, and understands that it will have to continue to share, the pain of this unprecedented drought. Alabama is not willing, however, to cede unilateral control of waters in the Chattahoochee River Basin to the State of Georgia. Such a move would be unfair to Alabama, and we urge you to deny Georgia's request.

Very truly yours,



Bob Riley  
Governor

BR/ds/jrs

cc: The Honorable Joshua Bolten  
The Honorable Charlie Crist



CHARLIE CRIST  
GOVERNOR

October 24, 2007

The Honorable George W. Bush  
President of the United States  
The White House  
Washington, DC 20502-0001

Dear Mr. President

Florida is strongly opposed to the request by the State of Georgia to suspend, indefinitely, the operating rules for the reservoirs on the Chattahoochee River. This request is improper as there exists no legal basis to support the action sought by Georgia. More importantly, if granted, this request would withhold water needed in Florida's Apalachicola River and would have serious, adverse effects on the River and Apalachicola Bay resulting in a profound disruption of the socioeconomic foundation in Florida's Panhandle region.

The Florida Panhandle is facing economic peril as a result of insufficient water flows. The Apalachicola River and Bay support a multi-million dollar commercial fishing industry. The total commercial fishing industry in the Apalachicola Bay is estimated to contribute \$134 million in economic output and an additional \$71 million in value added impacts. Recent data shows this industry is already being jeopardized as a result of reduced inflows. Further reductions would only hasten the decline of this important component of Florida's economy. The resulting loss of jobs will devastate a people who have relied on this industry for generations.

The current, and not unforeseen, crisis underscores the position Florida has taken from the beginning. Alabama, Georgia and Florida need to work together to adequately plan for and provide water for the people of Atlanta as well as the millions of residents in communities downstream. Florida, for example, has enacted comprehensive water supply legislation to ensure water is available to meet the needs of its communities, prior to development. The legislation provides the plan and funding for developing alternative water supplies such as desalinization, reuse, and conservation as well as adding new requirements for regional water supply plans to make them more useful to local governments and enhance consumptive use permitting. By ensuring water is available prior to development, Florida is, and has been, less vulnerable to periods of drought.

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Discussion of these issues has been ongoing for nearly two decades with little progress. Presently six separate lawsuits are pending in the federal courts involving the same parties. With that said, it is important to allow the water sharing issues of the Apalachicola-Chattahoochee-Flint Basin to be resolved among the States of Florida, Alabama, and Georgia, together with the U.S. Army Corps of Engineers. Florida remains willing to work together to develop and implement comprehensive short- and long-term strategies for the water resources available. In doing so, we can protect the people of all three states as well as the environmental resources we all have been elected to safeguard.

Reacting to the concerns of an upstream State to suspend environmental laws unilaterally at the expense of a downstream State's ecology and economy cannot be justified in any circumstance. In addition, the U.S. Army Corps of Engineers is actively engaged in discussions with the U.S. Fish and Wildlife Service, concerning appropriate measures to protect listed species in the Apalachicola River while giving due consideration to the water supply needs of upstream communities, including those in the metro-Atlanta area.

We can all see the effects the drought is taking on our region, and Florida remains steadfast in its desire to come to an equitable solution amid the circumstances we are facing together. But, we are unwilling to allow the unrealistic demands of one region to further compromise the downstream communities. As a result, we urge you to deny the State of Georgia's request.

Thank you for your careful attention to this matter.

Sincerely,



Charlie Crist

CC:ee

CC: The Honorable Sonny Perdue  
The Honorable Bob Riley  
Members of the Florida Congressional Delegation





# Florida Department of Environmental Protection

Marjory Stoneman Douglas Building  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

November 8, 2007

VIA FACSIMILE

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

Mr. Curtis M. Flakes  
Chief, Planning and Environmental Division  
Mobile District, U.S. Army Corps of Engineers  
P.O. Box 2288  
Mobile, AL 36628-0001

RE: ESA Section 7 Consultation on Proposed "Exceptional Drought Operations"  
(November 1, 2007)

Dear Ms. Carmody and Mr. Flakes:

Florida is sensitive to the concerns about the impacts of the current Southeastern drought expressed by the Corps and Florida's upstream neighbors. Governor Crist looks forward to hosting Governors Riley and Perdue in Tallahassee on December 12, 2007. That meeting represents the best opportunity for the three states to work toward a more holistic solution to address water management in the Apalachicola-Chattahoochee-Flint River Basin. Neither the Corps nor the Service should make any long-term commitments about the future of reservoir operations until that meeting has occurred and the three States are afforded an opportunity to move forward together.

The State of Florida opposes the Corps' proposed Exceptional Drought Operations ("EDO") protocol as articulated in Mr. Flakes' letter dated November 1, 2007, and the accompanying *Biological Assessment, Temporary Modifications to the Interim Operating Plan for Jim Woodruff Dam and the Associated Releases to the Apalachicola River* ("BA"). If implemented, the EDO would starve the Apalachicola River and Bay of freshwater flows needed to keep the ecosystems, species, and economy alive. The Corps' modeling shows the EDO would be in place through 2010, effectively capping Apalachicola River flow at between 4,150 - 5,000 cubic feet per second ("cfs") during that period, and

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allowing the Corps to store *all* Basin Inflow above that cap. Thus, the EDO would result in unprecedented declines in River levels and cause irreparable harm to Gulf sturgeon and federally protected mussel populations. The magnitude of freshwater depletions expected under the EDO would not only precipitate a catastrophic collapse of the oyster industry in Apalachicola Bay but also displace the entire economy of the Bay region. While Florida appreciates the concerns expressed in Mr. Flakes' letter and the BA, the EDO has a high potential to cause significant harm to the people of Florida and our natural resources.

Specifically, any biological opinion developed by the Service as a result of your consultation should be limited in scope and expire by its own terms no later than February 15, 2008. During the November 1, 2007 meeting in Washington, D.C., it was clearly articulated that the three states need to identify a long term solution to the Apalachicola-Chattahoochee-Flint and Alabama-Coosa-Tallapoosa River Basins to avoid further harm to the people and resources of all three states. Any short-term action taken by the Service and the Corps should not adversely affect the opportunity for the three states to work toward a reasonable solution to the current situation. If the States are unsuccessful at reaching a resolution, the Corps can reinitiate consultation and, as appropriate, adjust operations based on the hydrologic status of the Basin at that time. Given the uncertainty surrounding possible inflows to the reservoir system and the biological response of the Apalachicola River and Bay to any reduction in flow, such a deliberative short-term approach, consistent with principles of adaptive management, is required.

In addition, in light of the extraordinary time constraints self-imposed for your consultation (14 days, rather than the standard 135), it is doubtful that the Biological Opinion will adequately address the issues identified by the Florida Fish and Wildlife Conservation Commission in its November 7, 2007 letter relating to the impacts of sustained low flows in the Apalachicola Basin on protected species and Bay water quality and resources. The Service is well aware that the current flow of 5,000 cfs has restricted the Apalachicola River to its mainstem, and that virtually none of the floodplain is currently connected to the River. This has adversely affected 80 percent of the Apalachicola River fish species normally reliant on the floodplain for one or more life cycle functions and has severely limited if not precluded mussel reproduction. At a flow of 5,000 cfs, approximately 75 percent of known Gulf sturgeon spawning habitat is eliminated. If such a level were sustained for the long-term, it would disrupt river flow and temperature variations, both of which are essential to cue spawning behavior. The

Ms. Carmody and  
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EDO will further exacerbate these impacts, potentially disrupting or eliminating reproduction of these listed species for at least two years.

Florida's concerns are not limited to the species that must be accommodated in your consultation. Based on observations this summer, Florida anticipates that the EDO will significantly exacerbate higher salinities, resulting in increased disease and predation, potentially crippling the oyster and seafood industry in the Bay area. This is yet another reason to restrict the duration of your biological opinion (and any incidental take statement) to February 15, 2008.

In light of the above, Florida believes the EDO as proposed and implemented beyond February 15, 2008, would inescapably result in "jeopardy" to the Gulf sturgeon and the mussel species and "adversely affect" critical habitat designated and proposed for these species. Accordingly, Florida fully expects the Service to develop a "reasonable and prudent alternative", 16 U.S.C. § 1536(b)(3)(A), to the EDO that avoids that result. The Florida Fish and Wildlife Conservation Commission has offered its technical assistance by providing the Service with a list of key issues that any forthcoming biological opinion must address. We look forward to seeing your analysis of those issues and your recommendations on how to manage Florida's concerns.

Should you have any questions or wish to discuss these issues further, I will make myself or my staff available as needed.

Sincerely,



Michael Sole  
Secretary

cc: Gov. Charlie Crist  
Hon. Dirk Kempthorne  
Lt. Gen. Robert L. Van Antwerp  
Col. Byron Jorns  
Mr. Dale Hall  
Mr. Sam Hamilton  
Mr. Ken Haddad