APPENDIX C

GAEPD LETTER

12 OCTOBER 2007

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.

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 it 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.

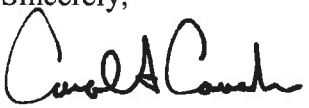
DISCUSSIONS ON LONGER-TERM MODIFICATIONS SHOULD BEGIN NOW

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

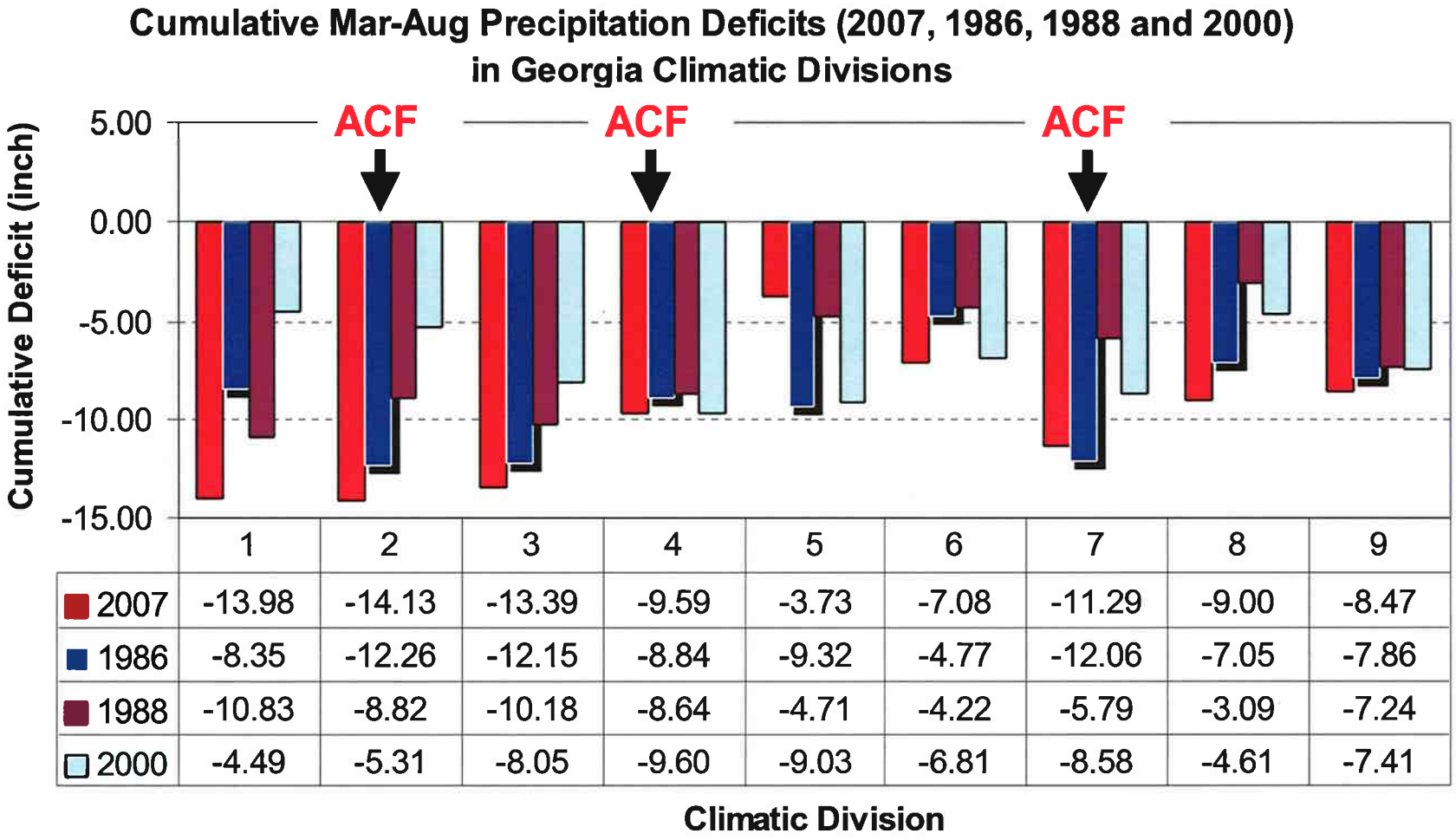
In light of the exigent circumstances, I need your prompt response to this request for specific alteration of the reservoir operating rules under the IOP. Given that time is of the essence, please inform me in writing no later than October 17, 2007 as to whether you intend to make these changes so that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



	1	2	3	4	5	6	7	8	9
2007	-13.98	-14.13	-13.39	-9.59	-3.73	-7.08	-11.29	-9.00	-8.47
1986	-8.35	-12.26	-12.15	-8.84	-9.32	-4.77	-12.06	-7.05	-7.86
1988	-10.83	-8.82	-10.18	-8.64	-4.71	-4.22	-5.79	-3.09	-7.24
2000	-4.49	-5.31	-8.05	-9.60	-9.03	-6.81	-8.58	-4.61	-7.41

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

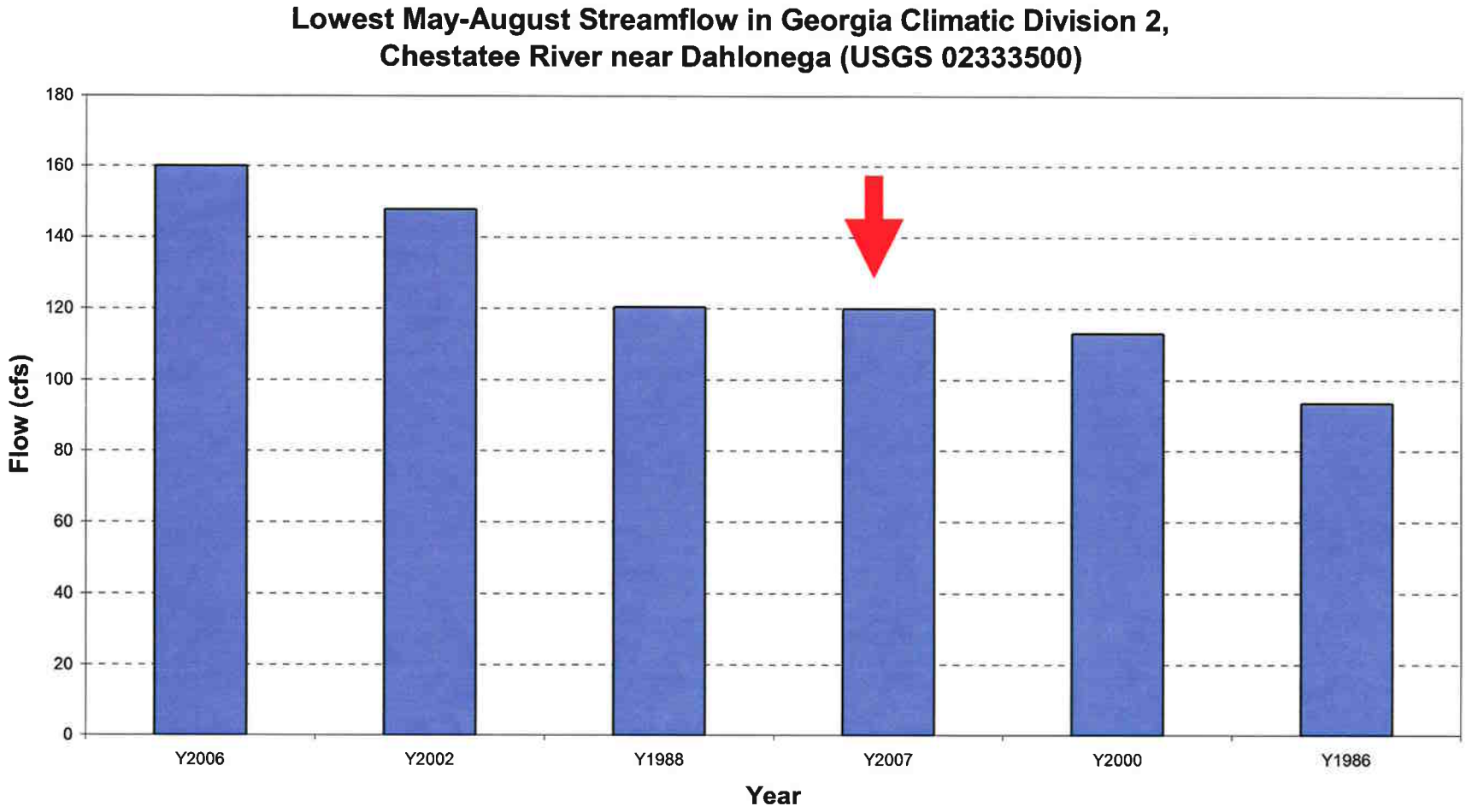


Fig. 2 Low stream flow at Chestatee River in 2007 as compared to those in previous severe drought years

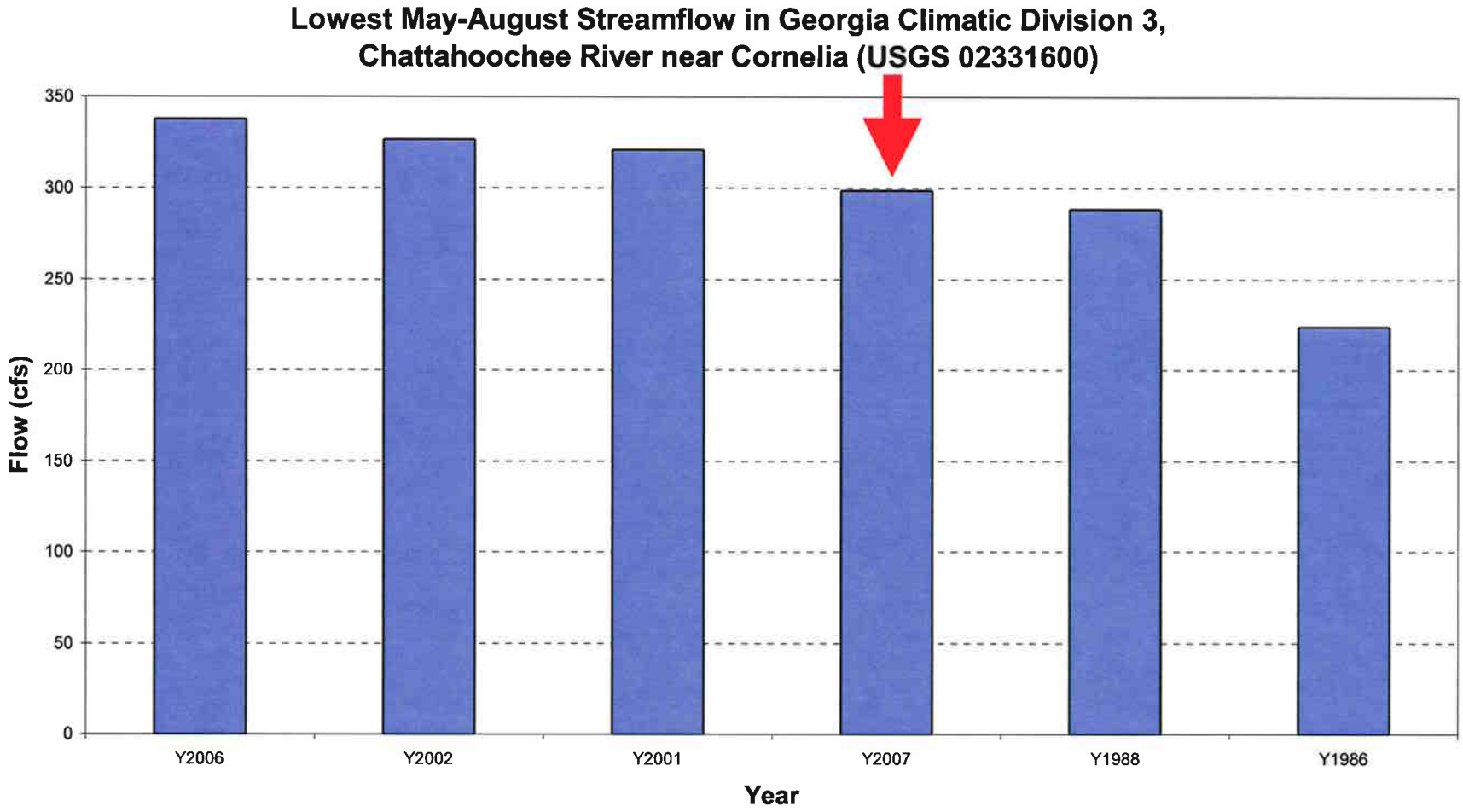


Fig. 3 Low stream flow at Chattahoochee River in 2007 as compared to those in previous severe drought years

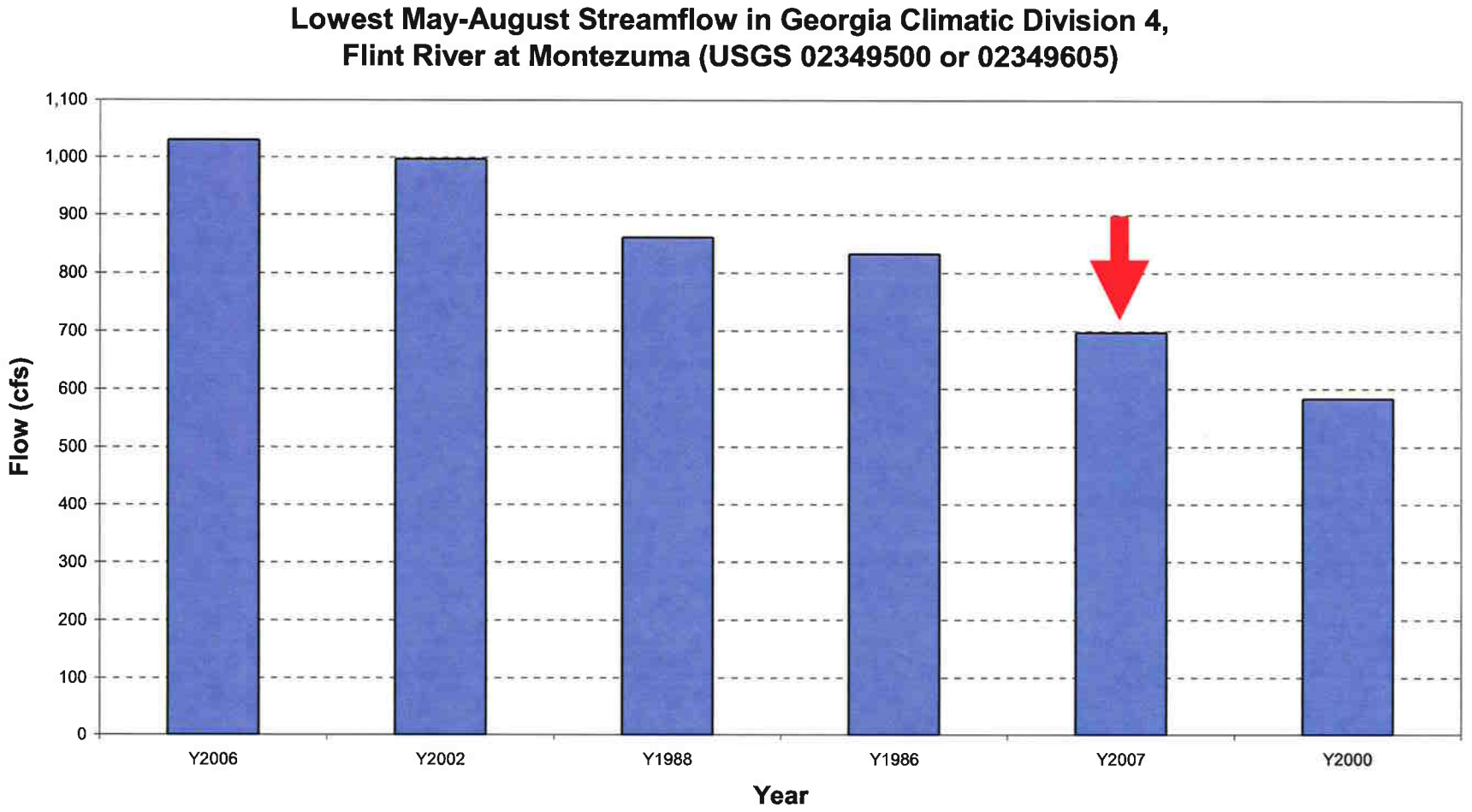


Fig. 4 Low stream flow at Flint River in 2007 as compared to those in previous severe drought years

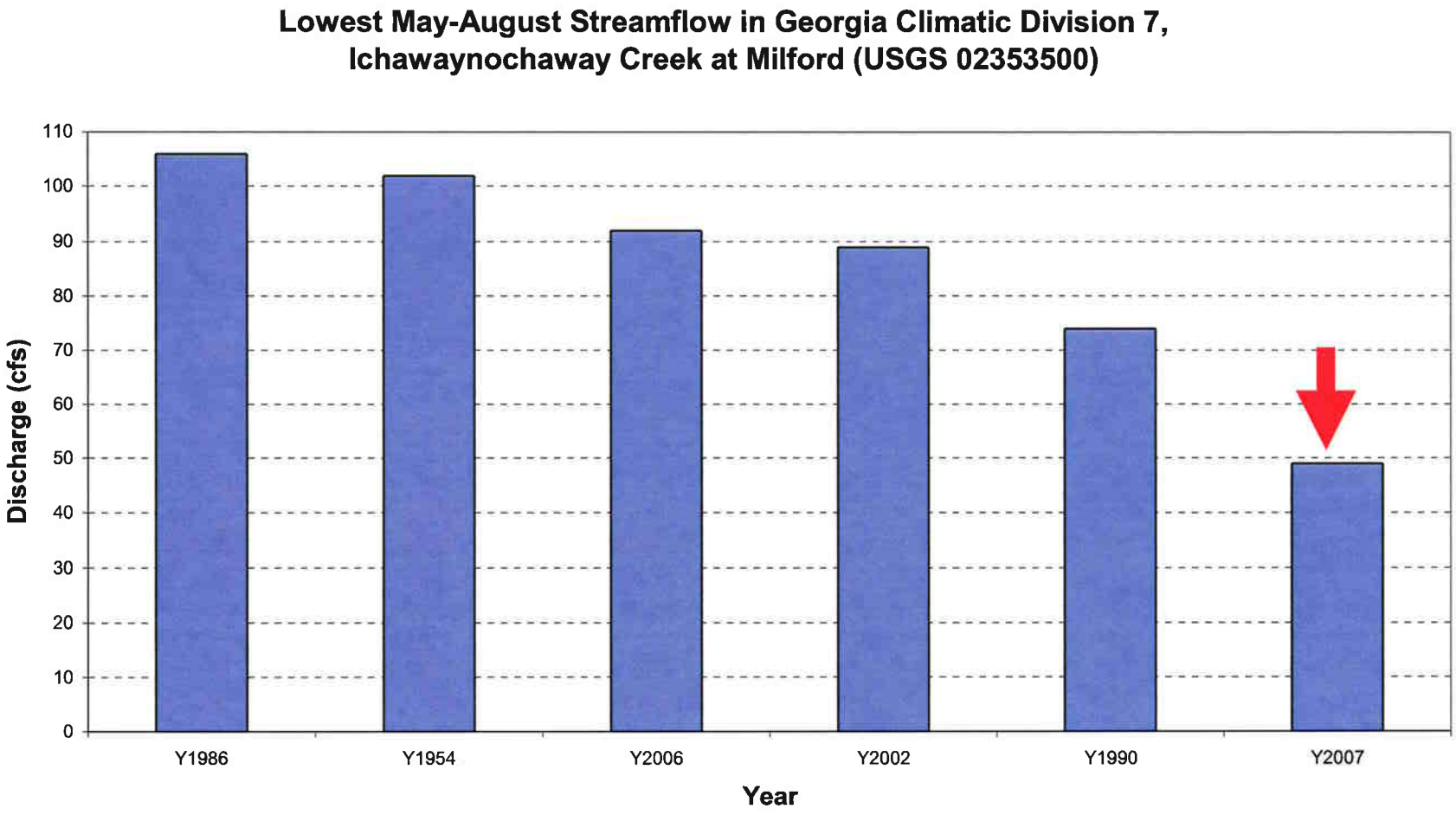


Fig. 5 Low stream flow at Ichawaynochaway Creek in 2007 as compared to those in previous severe drought years

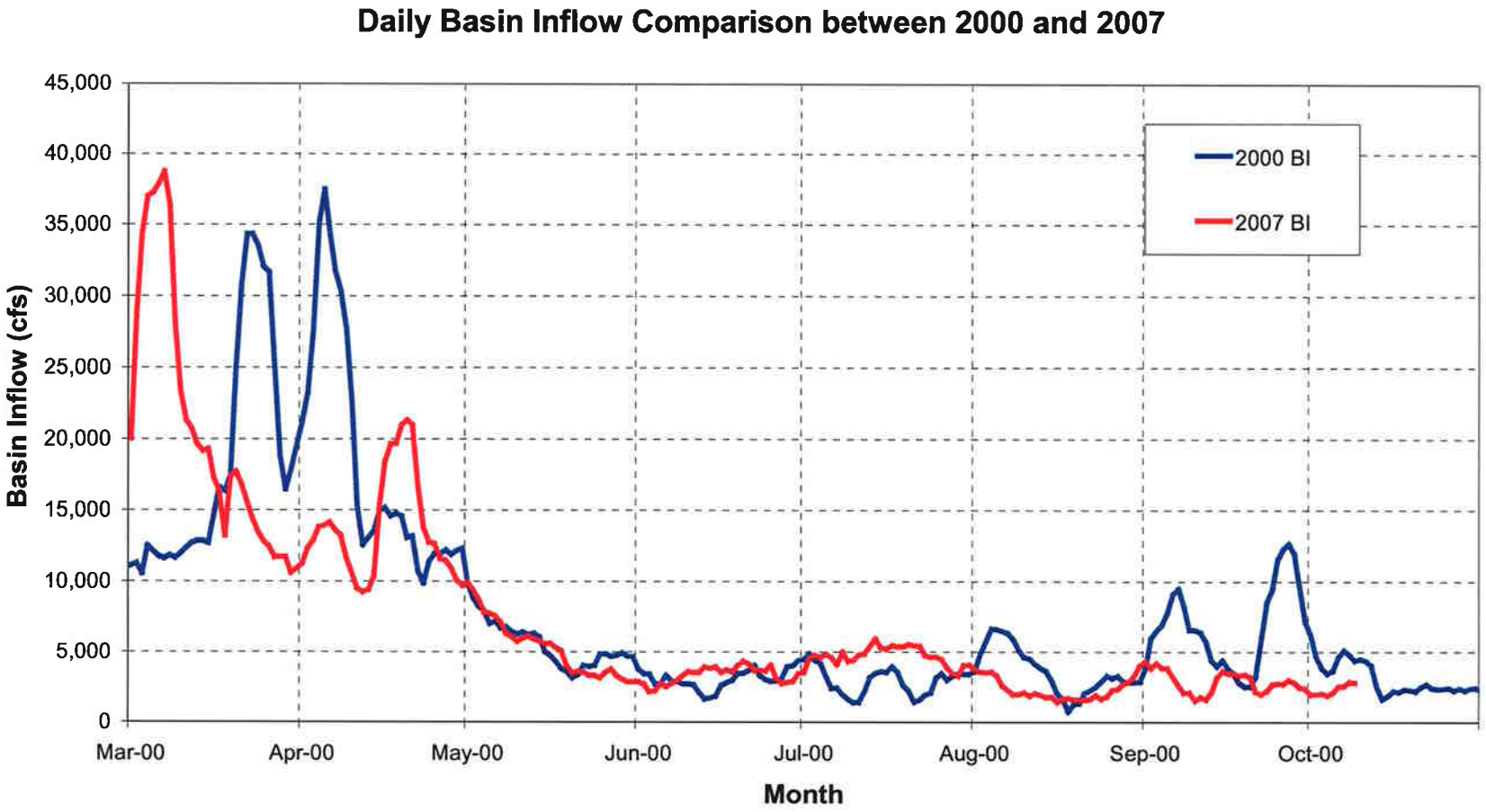


Fig. 6 Basin Inflow of 2007 compared to that of 2000

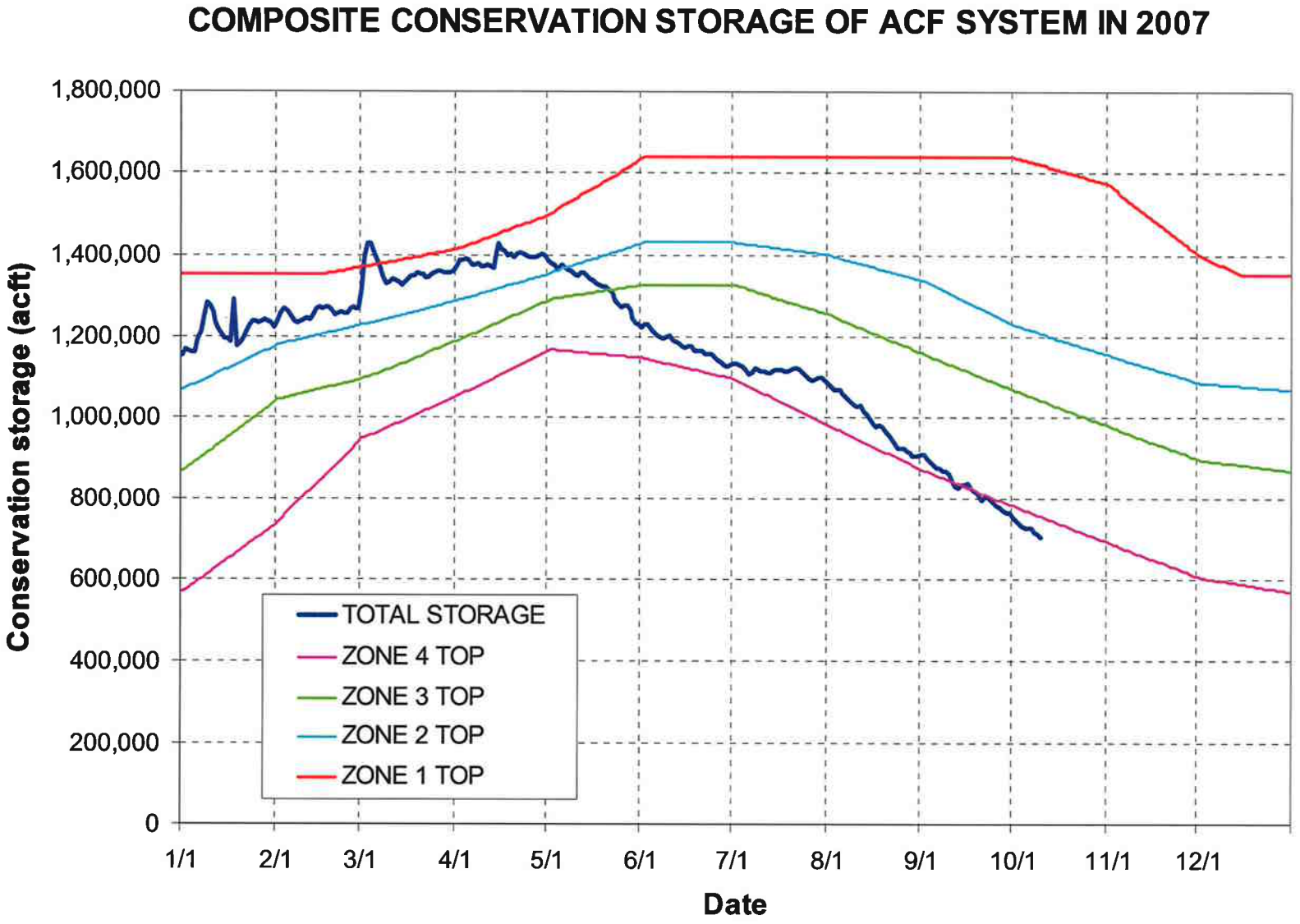


Fig. 7 Composite system storage in the ACF Basin in 2007

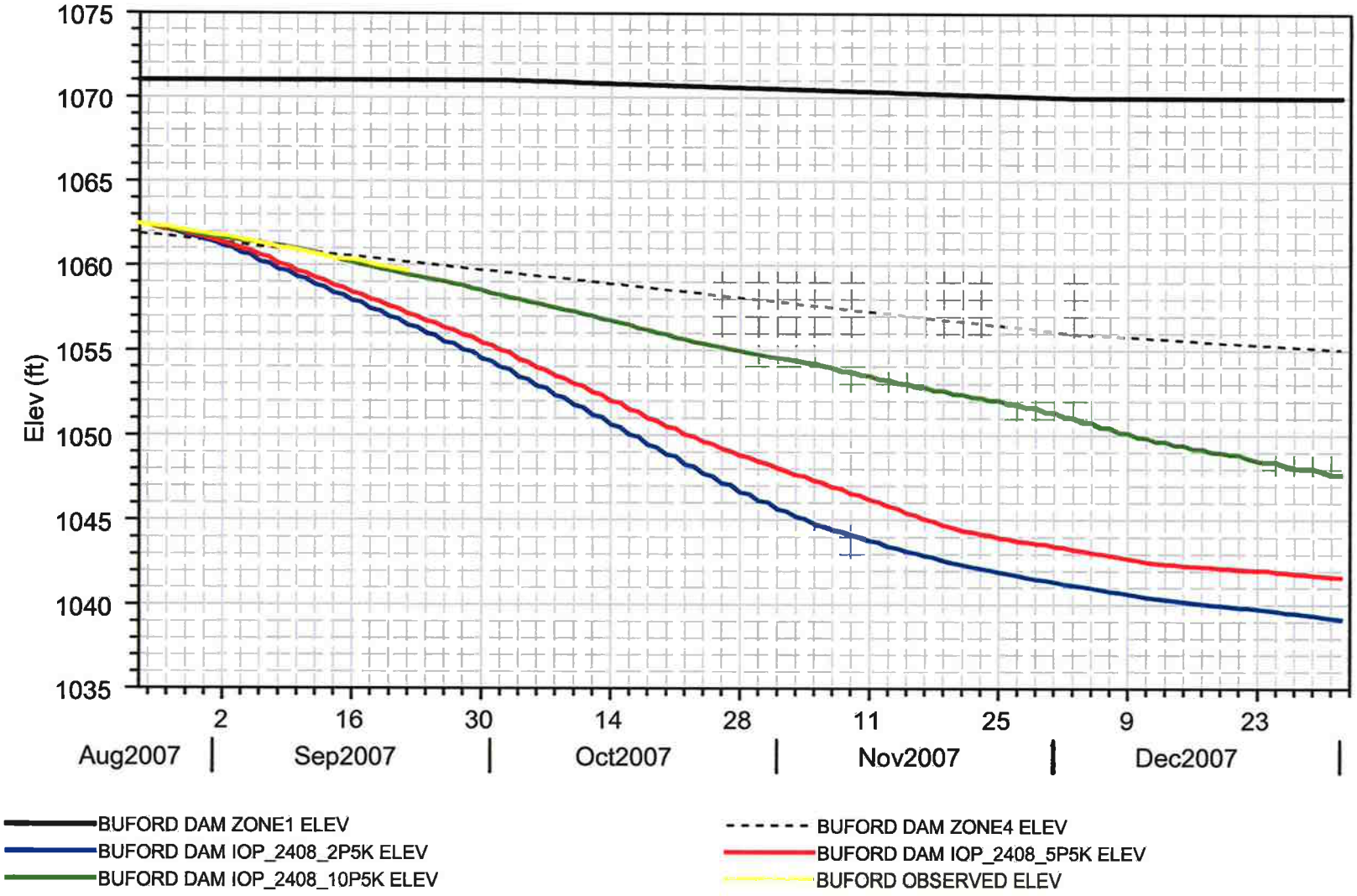


Fig. 8 Year 2007 Lanier elevation projected by the Corps of Engineers

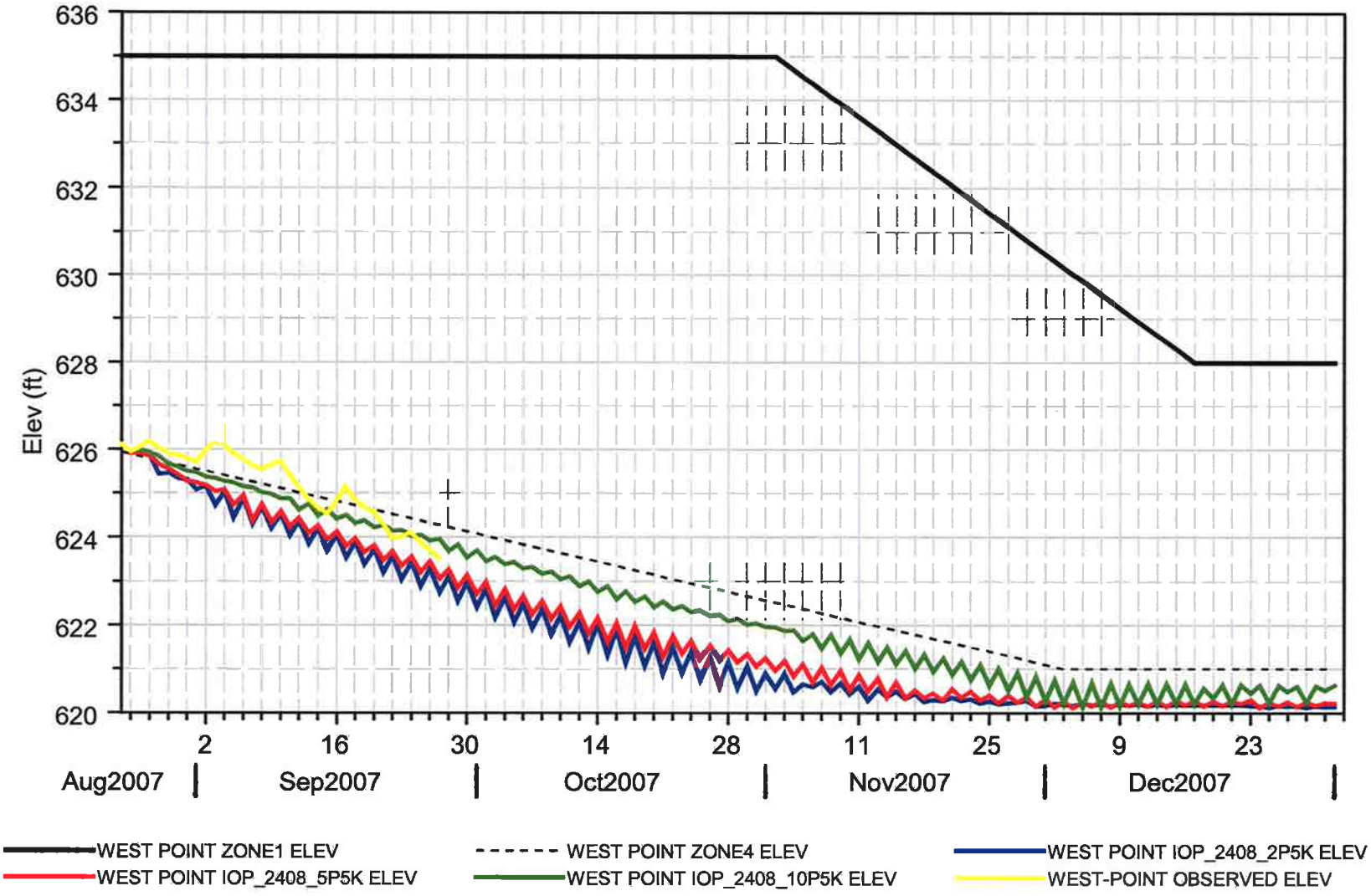


Fig. 9 Year 2007 West Point elevation projected by Corps of Engineers

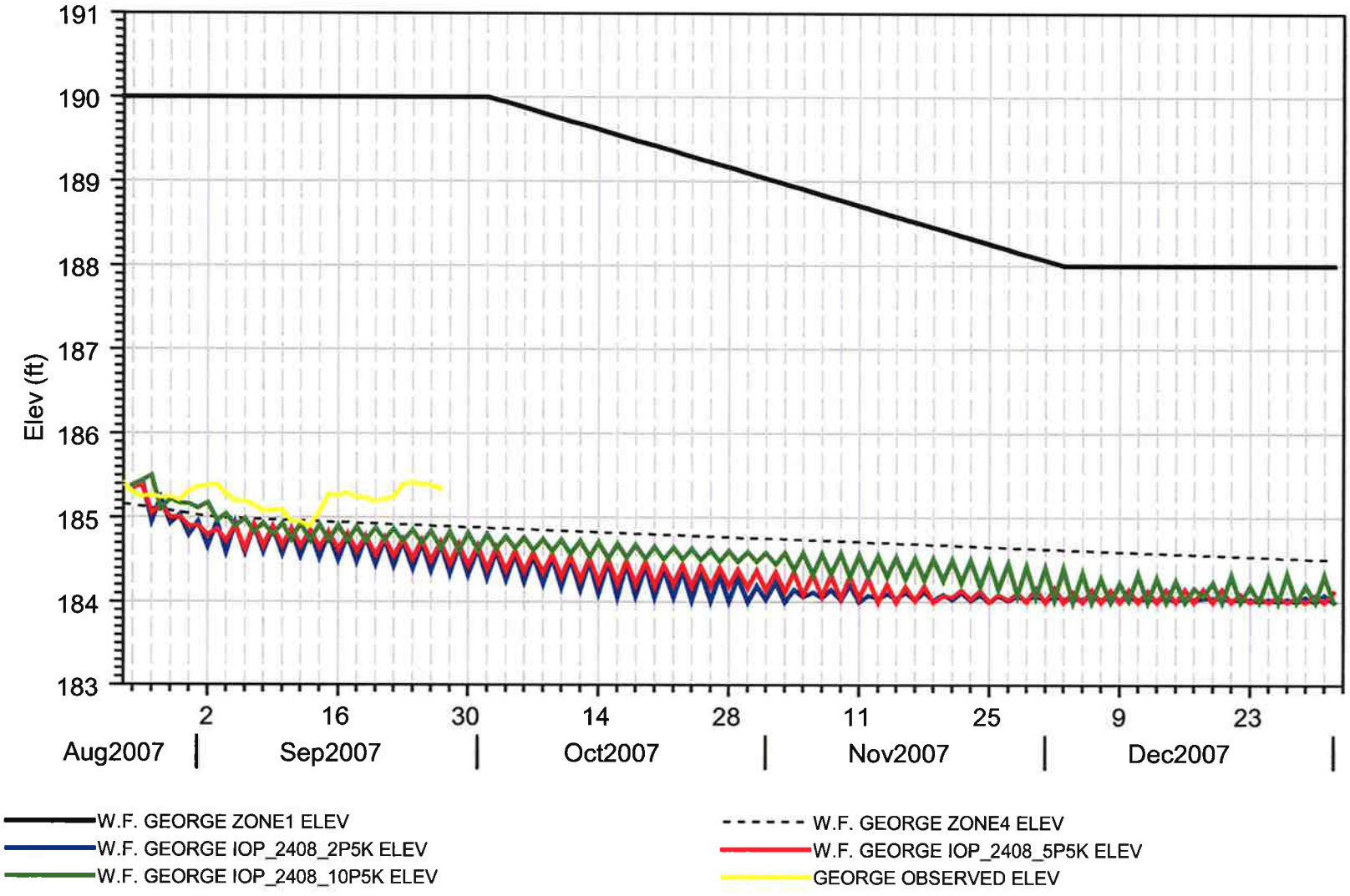


Fig. 10 Year 2007 Walter F. George elevation projected by Corps of Engineers

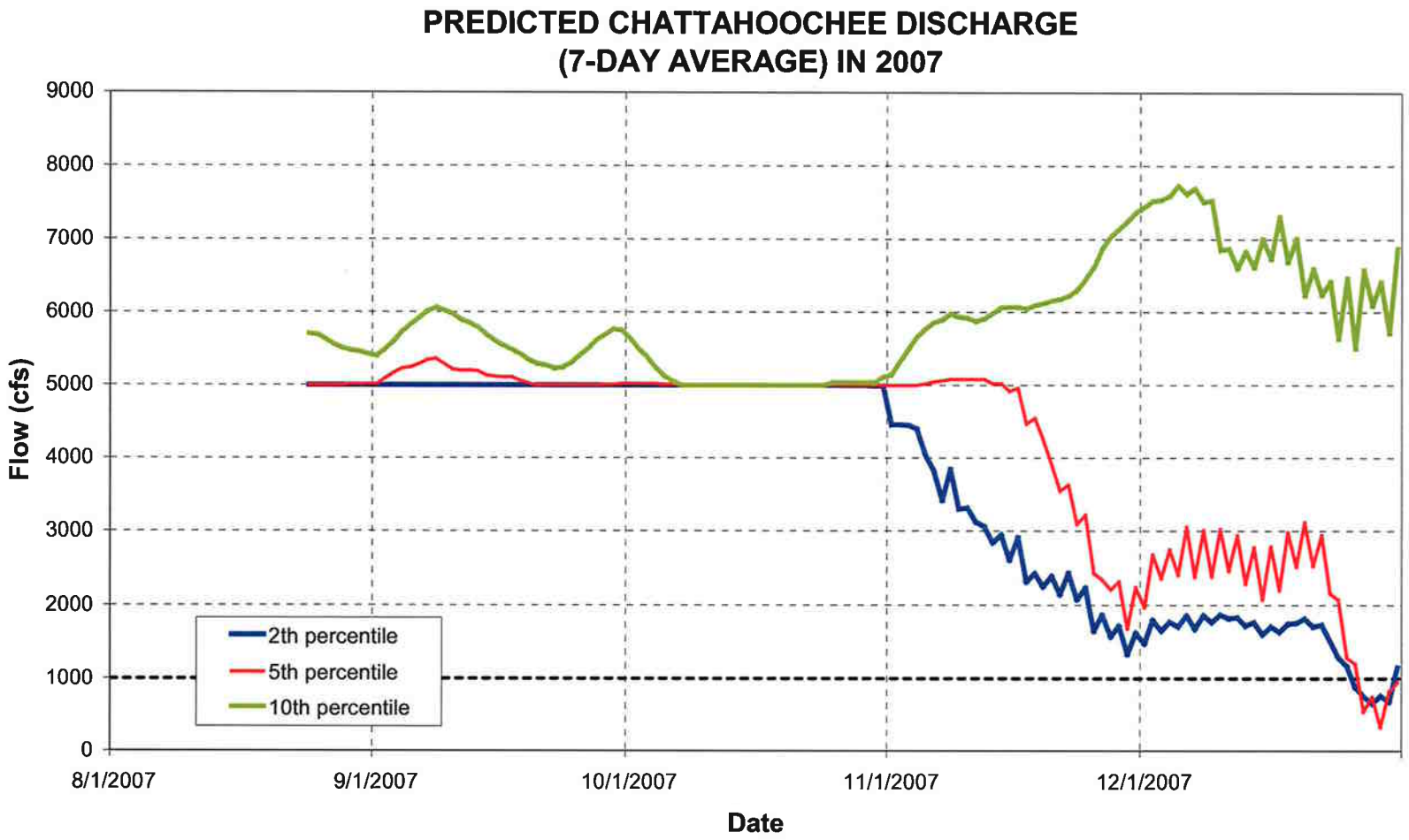


Fig. 11 Year 2007 flow at Chattahoochee, Florida projected by Corps of Engineers' model

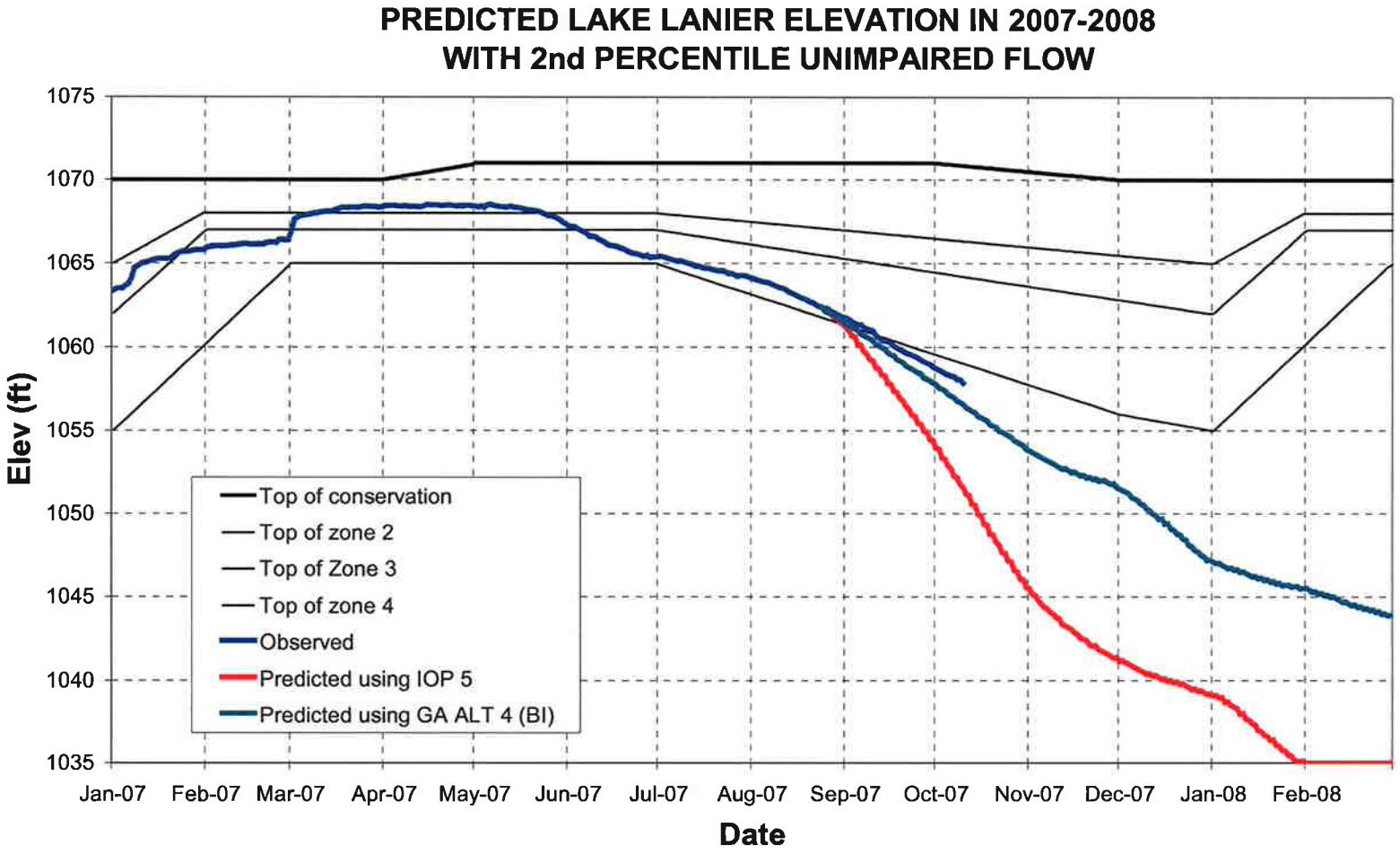


Fig. 12 Effects of emergency measures proposed by Georgia on Lanier elevation (using Corps model and 2 percentile hydrology)

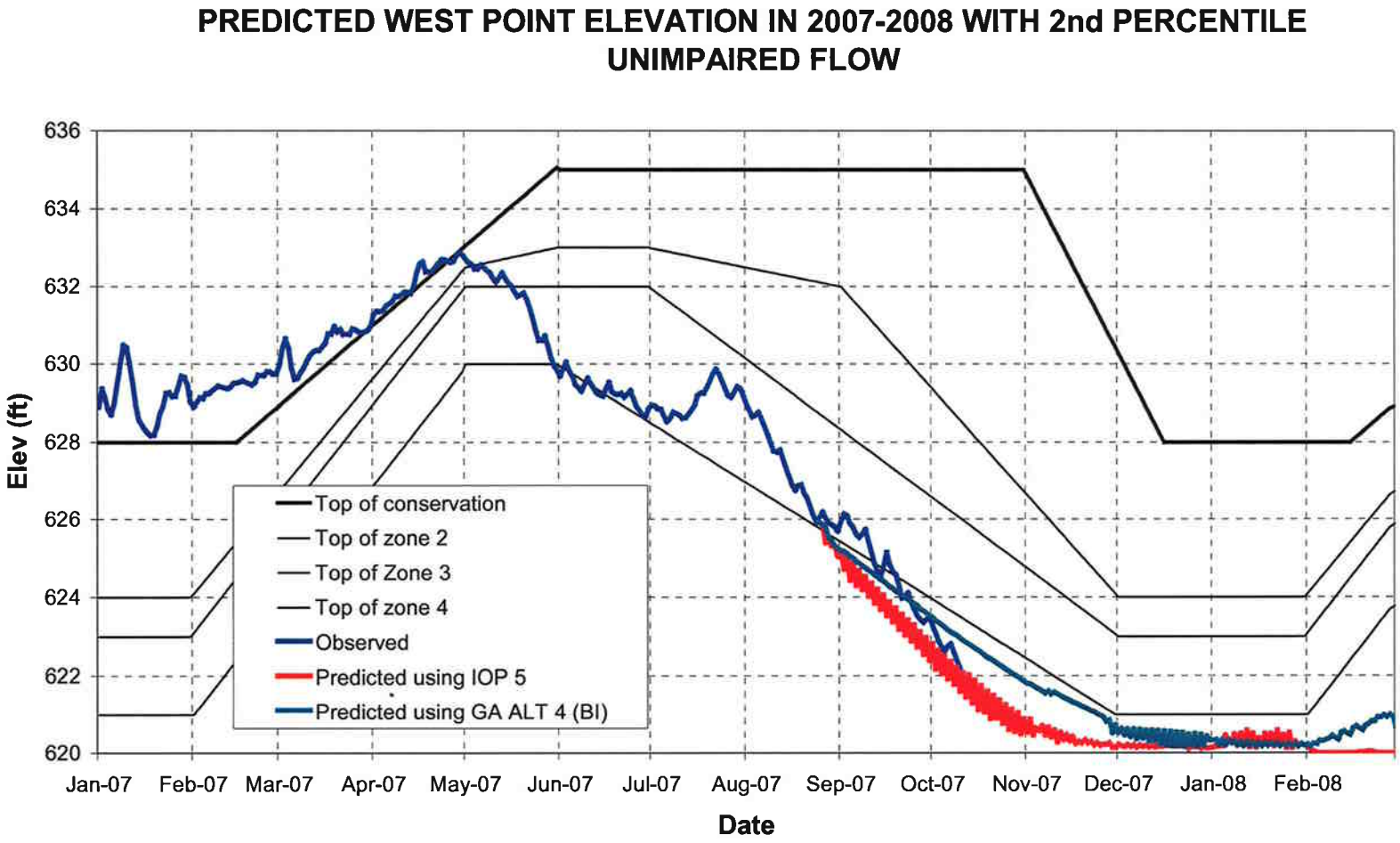


Fig. 13 Effects of emergency measures proposed by Georgia on West Point elevation (using Corps model and 2 percentile hydrology)

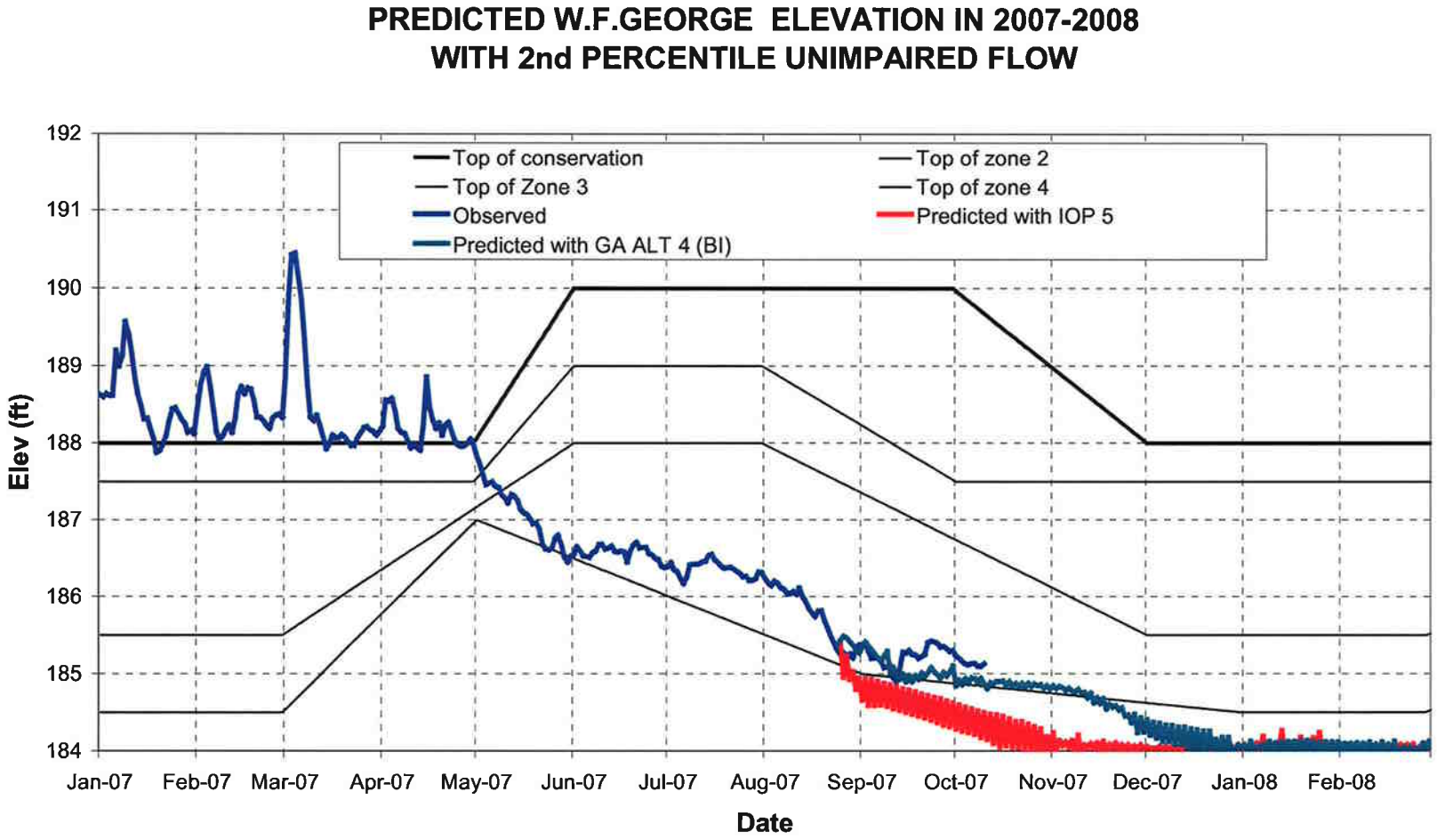


Fig. 14 Effects of emergency measures proposed by Georgia on W.F. George elevation (using Corps model and 2 percentile hydrology)

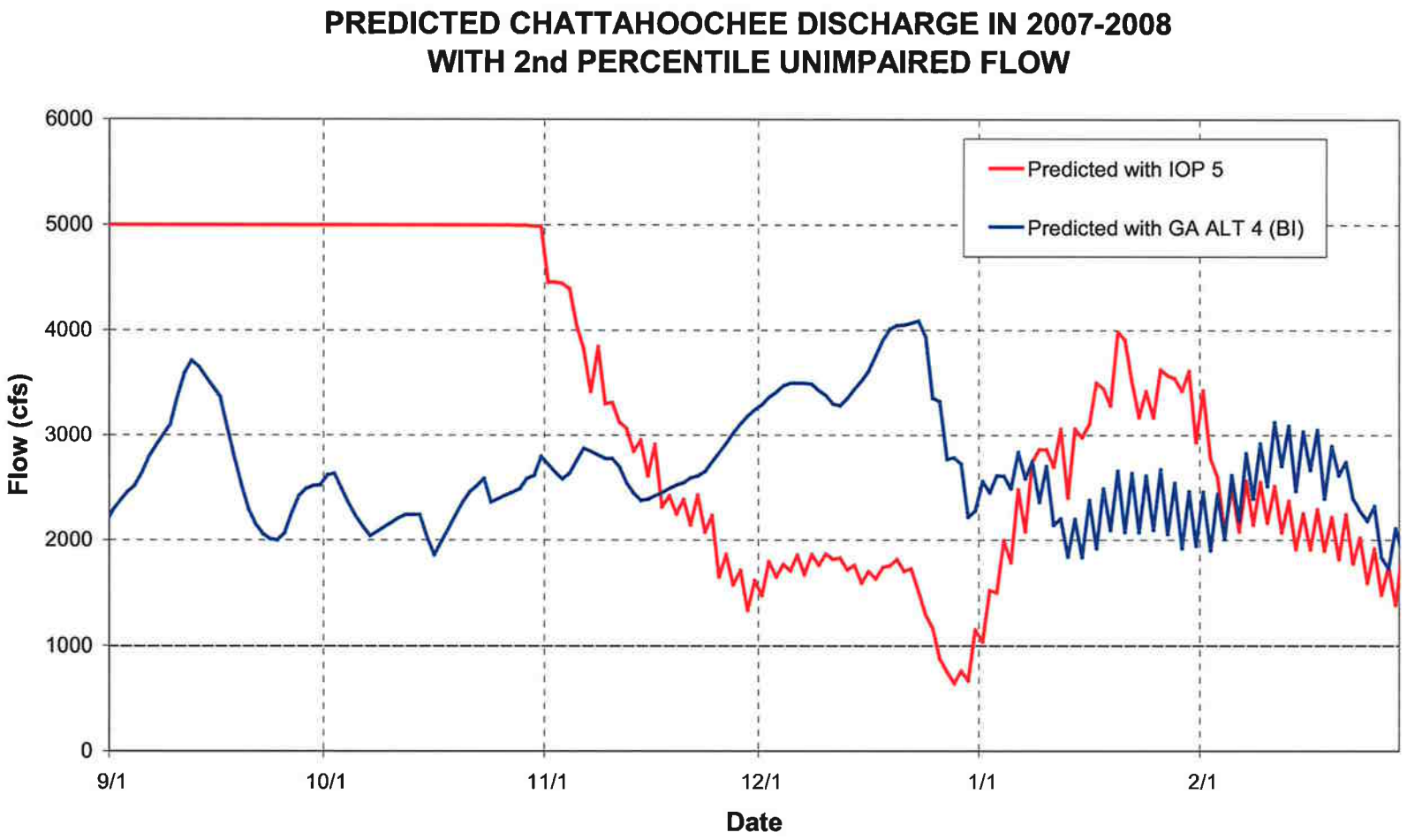


Fig. 15 Flow at Chattahoochee, Florida under the proposed changes to the IOP (Corps' 2 percentile hydrology)

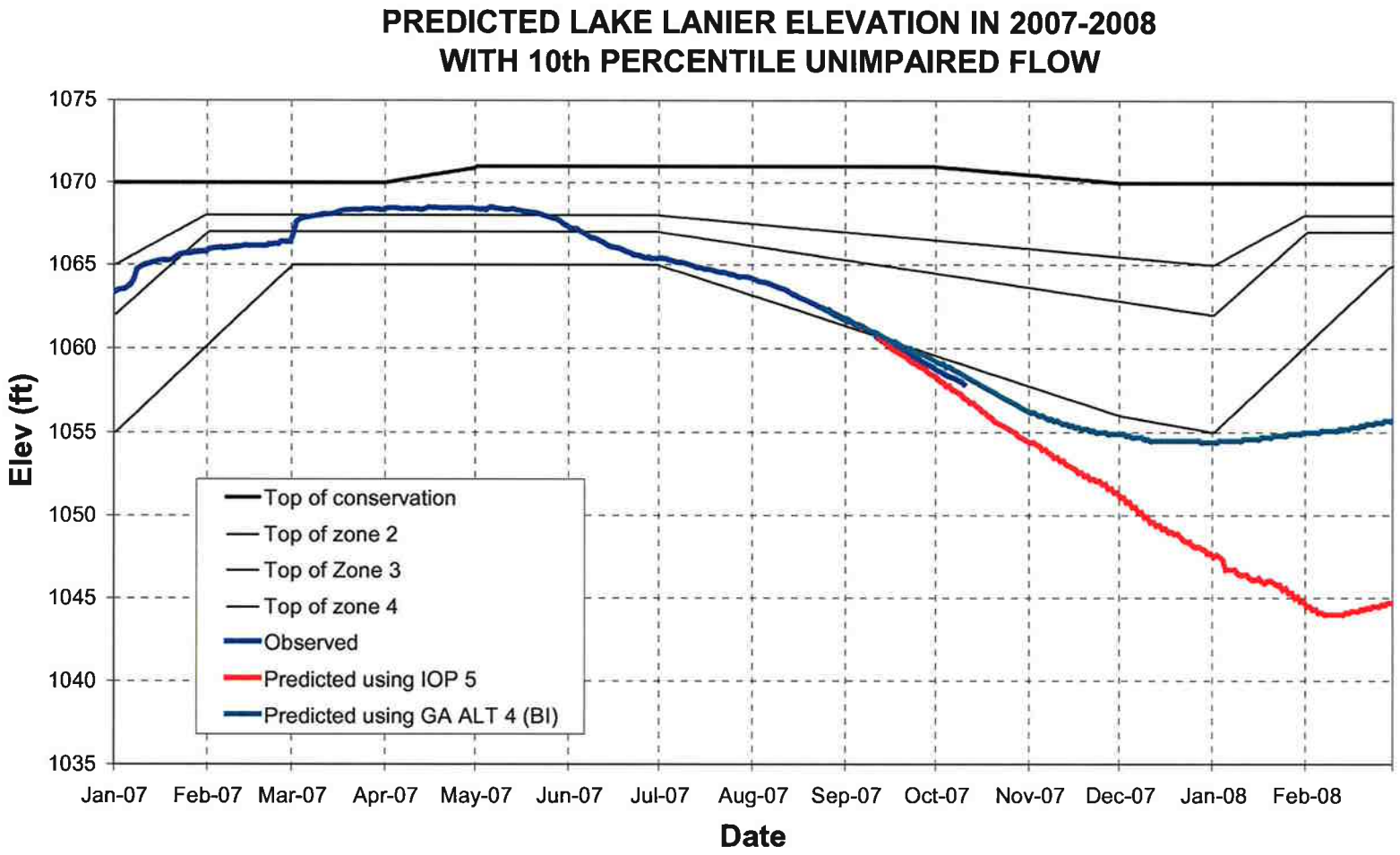


Fig. 16 Effects of emergency measures proposed by Georgia on Lanier elevation (using Corps model and 10 percentile hydrology)

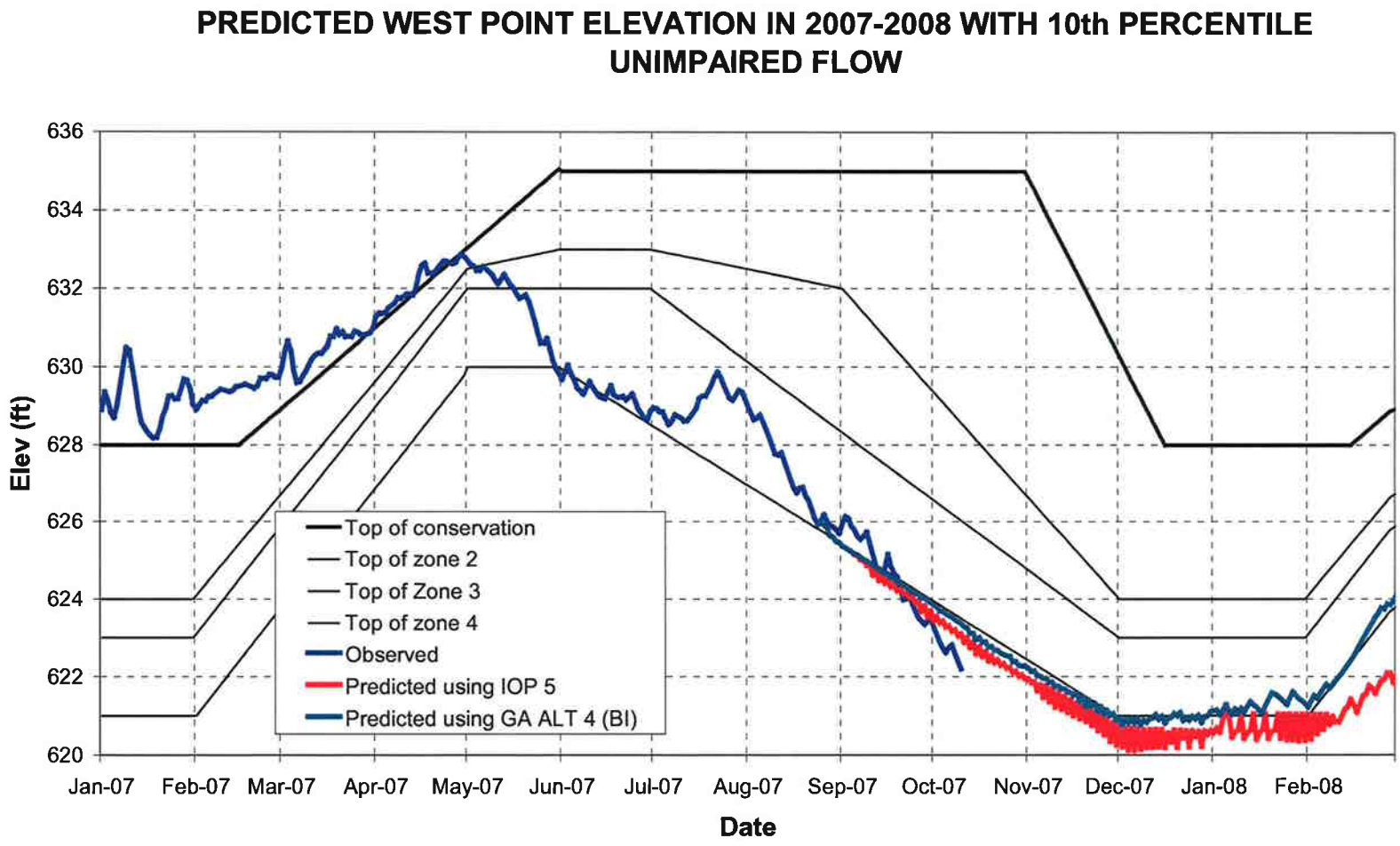


Fig. 17 Effects of emergency measures proposed by Georgia on West Point elevation (using Corps model and 10 percentile hydrology)

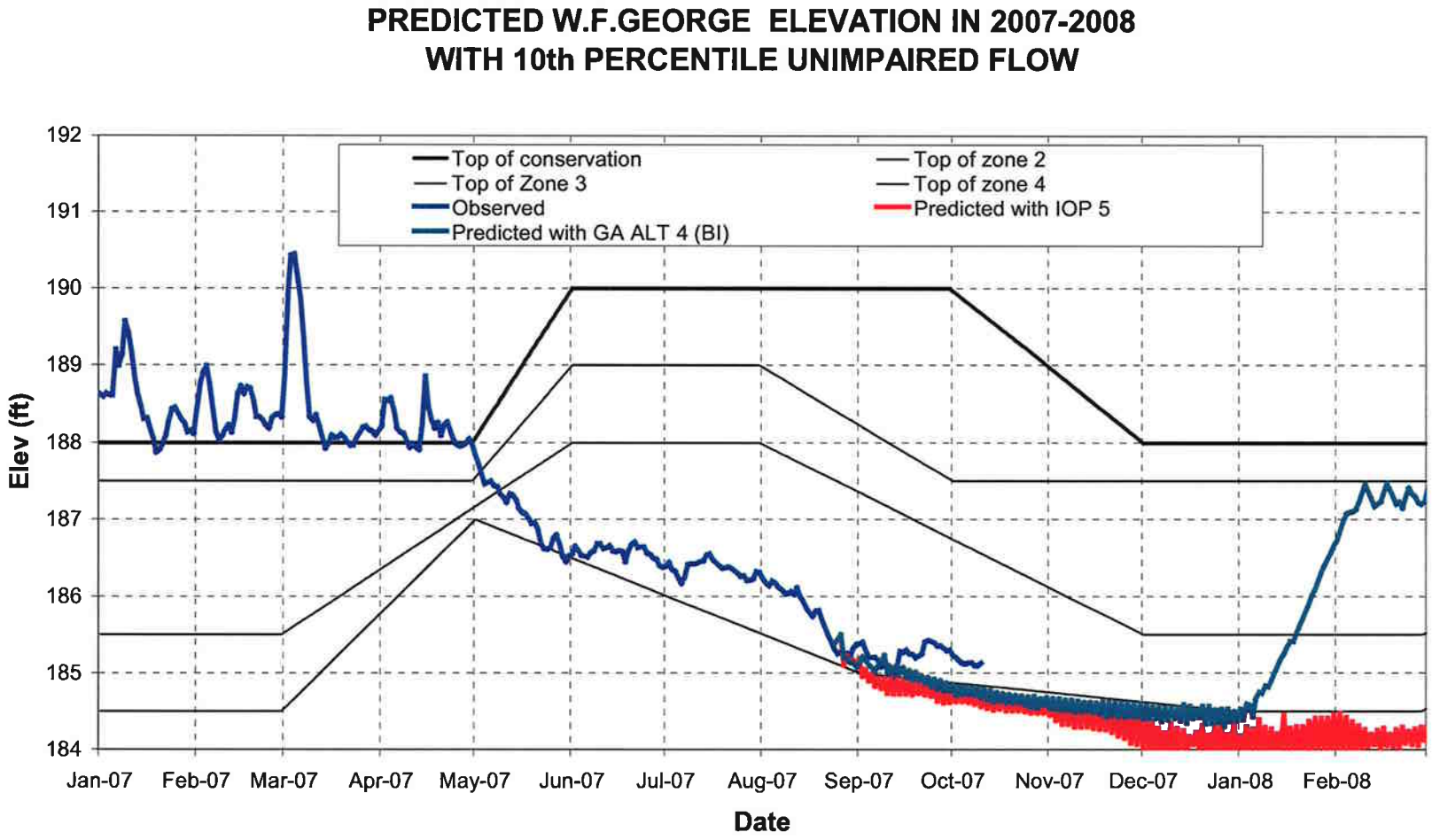


Fig. 18 Effects of emergency measures proposed by Georgia on W.F. George elevation (using Corps model and 10 percentile hydrology)

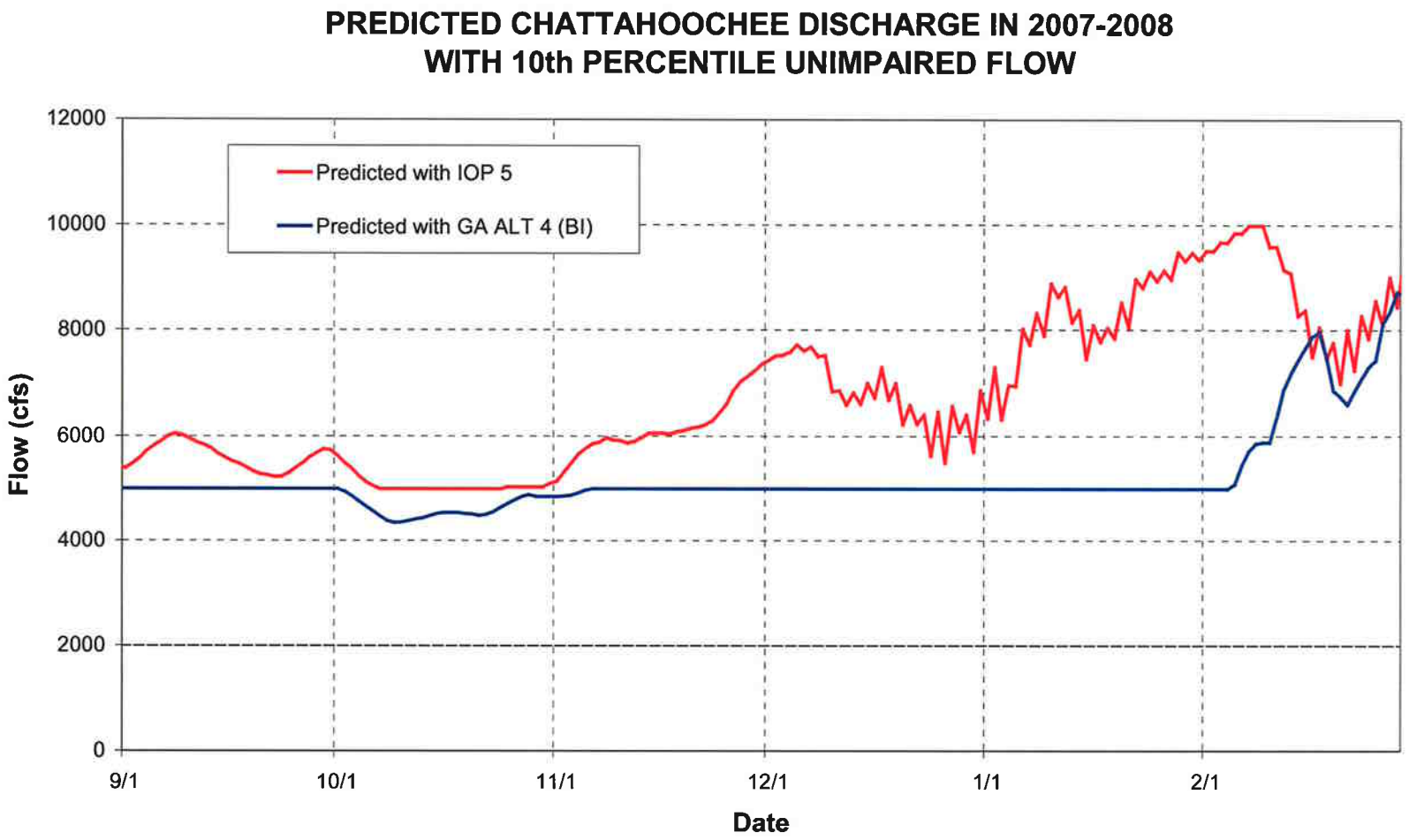


Fig. 19 Flow at Chattahoochee, Florida under the proposed changes to the IOP (Corps' 10 percentile hydrology)