INTEGRATED LETTER REPORT AND TIERED ENVIRONMENTAL ASSESSMENT

OF THE

OPERATIONAL ANALYSIS AND TARGETED WATER CONTROL PLAN UPDATES FOR THE APALACHICOLA-CHATTAHOOCHEE-FLINT RIVER BASIN IN ALABAMA, FLORIDA, AND GEORGIA

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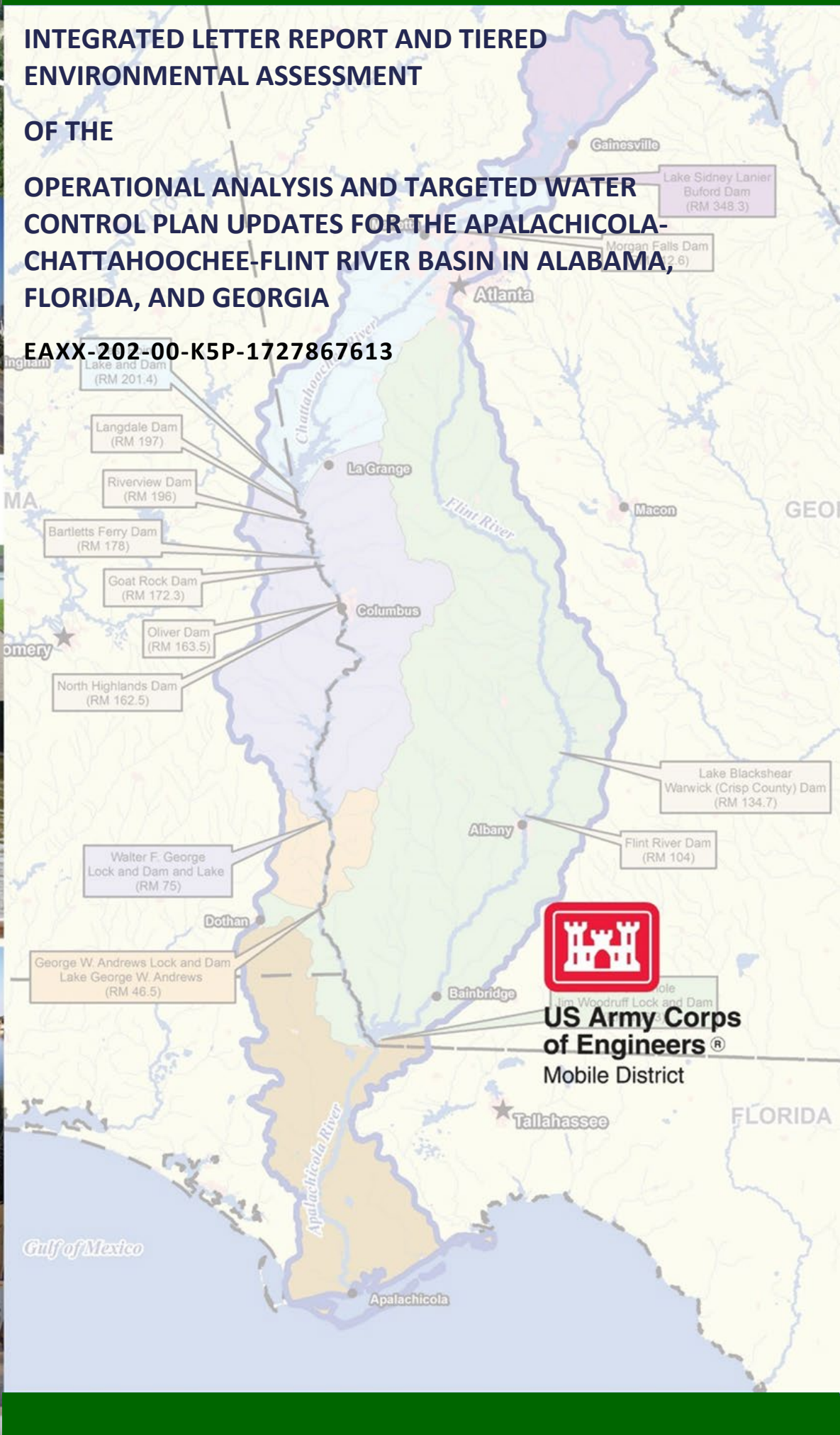


Appendix G

Drought Contingency Plan

The enclosed document contains the Drought Contingency Plan due to its direct relation to implementation of the 4 Flow Objectives analyzed in the ILR/TEA pursuant to the Stay Agreement Alternative. The Stay Agreement itself can be found in Appendix A. All added language within is indicated by red text.

EXHIBIT D

APALACHICOLA-CHATTAHOOCHEE-FLINT RIVER BASIN DROUGHT CONTINGENCY PLAN

DROUGHT CONTINGENCY PLAN

FOR

APALACHICOLA-CHATTAHOOCHEE-FLINT RIVER BASIN

BUFORD DAM AND LAKE SIDNEY LANIER
WEST POINT DAM AND LAKE
WALTER F. GEORGE LOCK AND DAM AND LAKE
JIM WOODRUFF LOCK AND DAM AND LAKE SEMINOLE

U.S. Army Corps of Engineers

South Atlantic Division

Mobile District

MARCH 2017, Revised DECEMBER 2024

DROUGHT CONTINGENCY PLAN
FOR
U.S. ARMY CORPS OF ENGINEERS RESERVOIRS
APALACHICOLA-CHATTAHOOCHEE-FLINT RIVER BASIN

I – INTRODUCTION

1-01. Purpose of Document. The purpose of this Drought Contingency Plan (DCP) is to provide a basic reference for water management decisions and responses to water shortage induced by climatological droughts at the Apalachicola-Chattahoochee-Flint (ACF) River Basin (referred to as the ACF River Basin or the ACF Basin) As a water management document, the DCP is specific to those drought concerns relating to water control management actions. Because of the long-term nature of a drought and the specific problems that could result, this document details only a limited number of specific actions that can be carried out related to water control. The primary purpose of this DCP is to document the overall ACF Basin drought management plan for the Federal projects, document the data needed to support water management decisions, and to define the coordination needed to manage the ACF Federal project's water resources to ensure that these three componentsare used in a manner consistent with the needs that develop during the drought. This DCP addresses the water control regulation of the five principal Federal reservoirs (Table 1) on the Chattahoochee River and their effects on the downstream Apalachicola River. Details of the drought management plan as it relates to each project and its water control regulation during droughts are provided in the water control plan within the respective appendix to the ACF Master Water Control Manual.

Table 1. Federal Reservoirs on the Chattahoochee River within the ACF River Basin

Location	Chattahoochee River drainage area (square miles)	Percentage of total basin (19,573 sq mi)	Percentage of Chattahoochee Basin (8,708 sq mi)
Buford Dam and Lake Sidney Lanier	1,034	5.3%	11.9%
West Point Dam and Lake	3,440	17.6%	39.5%
Walter F. George Lock and Dam and Lake	7,460	38.1%	85.7%
George W. Andrews Lock and Dam and Lake George W. Andrews	8,210	41.9%	94.3%
Jim Woodruff Lock and Dam and Lake Seminole	8,708 (+8,456 Flint River)	44.5% (43.2% Flint River)	100.0% (100% Flint River Basin)

II – AUTHORITIES

2-01. Authorities. The following list provides the policies and guidance that are pertinent to the development of drought contingency plans and actions directed therein.

a. ER 1110-2-1941, *Drought Contingency Plans*, dated 15 Sep 1981. This regulation provides policy and guidance for the preparation of drought contingency plans as part of the Corps of Engineers' overall water management activities.

b. ER 1110-2-8156, *Preparation of Water Control Manuals*, dated 31 Aug 1995. This document provides a guide for preparing water control manuals for individual water resource projects and for overall river basins to include drought contingency plans.

c. ER 1110-2-240, *Water Control Management*, dated 30 May 2016. This regulation prescribes the policies and procedures to be followed in water management activities including special regulations to be conducted during droughts. It also sets the responsibility and approval authority in development of water control plans.

d. EM 1110-2-3600, *Management of Water Control Systems*, dated 30 Nov 1987. This guidance memorandum requires that the drought management plan be incorporated into the project water control manuals and master water control manuals. It also provides guidance in formulating strategies for project regulation during droughts.

III – DROUGHT IDENTIFICATION

3-01. Definition. Drought can be defined in different ways - meteorological, hydrological, agricultural, and socioeconomic. In this DCP, the definition of drought used in the *National Study of Water Management During Drought* (USACE 1994) is used.

> Droughts are periods of time when natural or managed water systems do not provide enough water to meet established human and environmental uses because of natural shortfalls in precipitation or streamflow.

That definition defines drought in terms of its impact on water control regulation, reservoir levels, and associated conservation storage. Water management actions during droughts are intended to balance the water use and water availability to meet water use needs. Because of hydrologic variability, there cannot be 100 percent reliability that all water demands are met. Droughts occasionally will be declared and mitigation or emergency actions initiated to lessen the stresses placed on the water resources within a river basin. Those responses are tactical measures to conserve the available water resources (USACE 2009).

3-02. Drought Identification. There is no known method of predicting how severe or when a drought will occur. There are, however, indicators that are useful in determining when conditions are favorable: below normal rainfall; lower than average inflows; and low reservoir levels, especially immediately after the spring season when rainfall and runoff conditions are normally the highest. When conditions indicate that a drought is imminent, the Mobile District will increase the monitoring of the conditions and evaluate the impacts on reservoir projects if drought conditions continue or become worse for 30-, 60-, or 90-day periods. Additionally, Mobile District will determine if a change in operating criteria would aid in the total regulation of the river system and if so, determine what changes would provide the maximum benefits from any available water.

Various products are used to detect and monitor the extent and severity of basin drought conditions. One key indicator is the U.S. Drought Monitor available through the U.S. Drought Portal, www.drought.gov. The National Weather Service (NWS) Climate Prediction Center (CPC) also develops short-term (6- to 10-day and 8- to 14-day) and long-term (1-month and 3-month) precipitation and temperature outlooks and a U.S. Seasonal Drought Outlook, which are useful products for monitoring dry conditions. The Palmer Drought Severity Index is also used as a drought reference. The Palmer index assesses total moisture by using temperature and precipitation to compute water supply and demand and soil moisture. It is considered most relevant for non-irrigated cropland and primarily reflects long-term drought. However, the index requires detailed data and cannot reflect an operation of a reservoir system. The state climatologists also produce a Lawn and Garden Index, which gives a basin-wide ability to determine the extent and severity of drought conditions. The runoff forecasts developed for both short- and long-range periods reflect drought conditions when appropriate. There is also a heavy reliance on the latest El Niño Southern Oscillation (ENSO) forecast modeling to represent the potential effects of La Niña on drought conditions and spring inflows. Long-range models are used with greater frequency during drought conditions to forecast potential effects on reservoir elevations, ability to meet minimum flows, and water supply availability. A long-term, numerical model, Extended Streamflow Prediction, developed by the NWS, provides probabilistic forecasts of streamflow and reservoir stages on the basis of climatic conditions, streamflow, and soil moisture. Extended Streamflow Prediction results are used in projecting possible future drought conditions. Other parameters and models can indicate a lack of rainfall and runoff, the degree of severity and the continuance of a drought. Models using data of

previous droughts or a percentage of current to mean monthly flows (i.e. 50% or less) with several operational schemes have proven helpful in forecasting reservoir levels for water management planning purposes. Other parameters considered during drought management are the ability of the various lakes to meet the demands placed on storage, the probability that lake elevations will return to normal seasonal levels, basin streamflows, basin groundwater table levels, and the total available storage to meet hydropower marketing system demands.

3-03. National Integrated Drought Information System (NIDIS). An NIDIS pilot program has been established for the ACF River Basin with the goal of developing a Regional Drought Early Warning Information System (RDEWS). The ACF RDEWS can be accessed through the U.S. Drought Portal, www.drought.gov.

a. The National Integrated Drought Information System Act of 2006 (Public Law 109-430) described the functions of NIDIS as follows:

The National Integrated Drought Information System shall:

(1) Provide an effective drought early warning system that — (A) is a comprehensive system that collects and integrates information on the key indicators of drought in order to make usable, reliable, and timely drought forecasts and assessments of drought, including assessments of the severity of drought conditions and impacts; (B) communicates drought forecasts, drought conditions, and drought impacts on an ongoing basis to (i) decision makers at the Federal, regional, state, tribal, and local levels of government; (ii) the private sector; and (iii) the public, in order to engender better informed and more timely decisions thereby leading to reduced impacts and costs; and (C) includes timely (where possible real-time) data, information, and products that reflect local, regional, and state differences in drought conditions;

(2) Coordinate, and integrate as practicable, Federal research in support of a drought early warning system; and

(3) Build upon existing forecasting and assessment programs and partnerships.

The law requires National Oceanic and Atmospheric Administration (NOAA) to consult with relevant Federal, regional, state, tribal, and local government agencies, research institutions, and the private sector in developing the NIDIS and that each Federal agency must cooperate as appropriate with NOAA.

The NIDIS ACF Basin RDEWS will be a Web-based system with information on drought preparedness, mitigation, and relief to serve policy and decision makers at all levels - local, state, regional, and national. The objective of NIDIS is to improve (1) observing systems, (2) monitoring, analysis, assessment, and prediction tools, and (3) impacts monitoring and assessment. It calls for more drought research and support for drought preparedness planning.

b. The U.S. Army Corps of Engineers' (Corps') Role in NIDIS. Corps contributions are most important in three areas: data and data management tools, drought preparedness planning, and impacts monitoring and assessment.

Several aspects of NIDIS affect the Corps.

(1) Drought Monitoring: NIDIS can integrate reservoir storage information so it would be easier for decision makers to assess hydrologic drought. The Mobile District has that information available, but it would need to be linked with NIDIS.

(2) Quantifying Drought Impacts: The Corps is one of the lead Federal agencies for several sectors affected by drought and specifically mentioned by the NIDIS program; for

example, economic impacts of low flow and low reservoir levels on inland navigation, hydropower, and recreation.

(3) Drought Research: Topics recommended for further research include developing "methodologies to integrate data on climate, hydrology, water available in storage, and socioeconomic and ecosystem conditions" and "new decision support tools that would give decision-makers a better range of risks and options to consider."

The following are some specific items for Mobile District participation in NIDIS:

(1) Provider of drought information. Data on reservoir storage including archives of historic data should be included in NIDIS. For the Corps, most of the data is available at the District level. Mobile District data is provided on the Internet. The Corps has other data that could be useful in drought impact assessment, including water supply, navigation, hydropower, and recreation data.

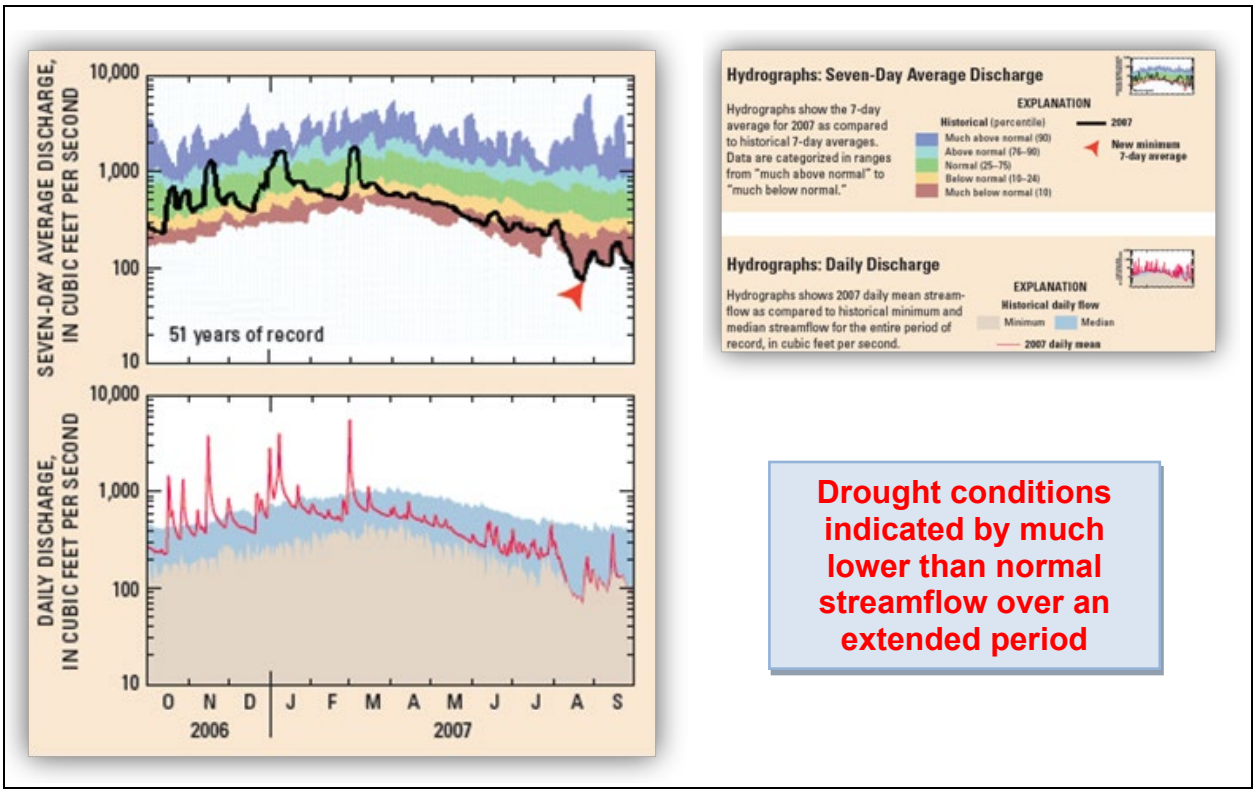
(2) Drought preparedness planning. The Corps has sufficient authority to develop drought plans for its projects that are better integrated with state, tribal, and local drought plans. Drought preparedness planning is one aspect of integrated watershed planning, and the Corps should be more proactive in drought planning for river basins with Corps projects.

(3) Impacts monitoring and assessment. The Corps has expertise in water resource areas that are affected by drought, such as navigation, hydropower, recreation, water supply, and ecosystems. However, additional research is necessary to quantify drought impacts.

(4) User of drought information. The Corps is a potential user of NIDIS. All Corps reservoirs are required to have DCPs. NIDIS could improve the triggers that implement the drought plans. NIDIS provides a forum for improved coordination between the Corps and the NWS Southeast River Forecast Center and the NOAA-supported Regional Climate Centers. New products are coming out that could increase the lead-time of river forecasts.

3-04. Historical Droughts. Several drought events have occurred in the ACF Basin with varying degrees of severity and duration. Four of the most significant historical basin-wide droughts occurred in 1954 – 1956, 1980 – 1981, 1985 – 1989, 2006 – 2008, and 2011 - 2012. The 1985 - 1989 drought caused water shortages in Atlanta in 1986. That resulted in the need for the Corps to make adjustments in the water management practices at Buford Dam and to accelerate the publication and implementation of a drought management strategy for the ACF Basin in August 1986 (USACE, Mobile District 1986). The drought, with a recurrence interval of 50 to 100 years in the north and 10 to 25 years in central and south Georgia, caused over one-third of the private wells across the basin to run dry (USGS 2000). Water shortages occurred in the ACF Basin again from 1999 - 2002 and during 2006 - 2008. The 2006 - 2008 drought was the most devastating recorded in Alabama and western Georgia. Precipitation declines began in December 2005. Those shortfalls continued through the winter of 2006 – 2007 and spring 2007, exhibiting the driest winter and spring in the period of record. North Georgia received less than 75 percent of normal precipitation (30-year average). New record low monthly streamflows occurred at 80 of 101 stations with 20 or more years of record. New record low 7-day-average streamflows occurred at 21 of 101 stations with 20 or more years of record (USGS 2007). Figure 1 shows a graphical depiction of the drought conditions as indicated by streamflow shortfalls. The drought reached peak intensity in 2007, resulting in a D-4 Exceptional Drought Intensity (the worst measured) throughout the summer of 2007. Rainfall at Gainesville, Georgia, (Lake Sidney Lanier) was only about 20 inches (the annual average precipitation there is 54.75 inches) for the entire year. That caused Lake Sidney Lanier to record its daily record low lake elevations each day from 11 December 2007, through 10 December 2008. Furthermore, from 1 March 2008, through 1 August 2008, the Lake was

three to five feet lower than the previous low for that day. The 2011 – 2012 drought began to the development of a strong La Nina in the summer of 2010, resulting in the driest summer in Georgia in the 21st century, thus far. The summer of 2011 also produced the seventh driest summer on record in Georgia. Winter rains of 2012 brought the end of this drought.



Source: USGS 2008

Figure 1. A Graphical Description of Drought as Indicated by Streamflow Shortfalls; Chattahoochee River near Cornelia

3-05. Severity. Water shortage problems experienced during droughts are not uniform throughout the ACF Basin. Even during normal, or average, hydrologic conditions, various portions of the basin experience water supply problems. The severity of the problems is primarily attributed to the pattern of human habitation within the basin; the source of water utilized (surface water vs. groundwater); and the characteristics of the water resources available for use. During droughts, these problems can be intensified. A severe drought in the basin develops when a deficiency of rainfall occurs over a long time period and has a typical duration of 18 to 24 months. The number of months of below normal rainfall is a more significant determinant of the magnitude of a drought in the basin than the severity of the deficiency in specific months. However, the severity of the rainfall deficiency during the normal spring wet season has a significant impact on the ability to refill reservoirs after the fall/winter drawdown period. Another confounding factor which influences droughts in the basin is the variability of rainfall over the basin, both temporarily and spatially.

IV – BASIN AND PROJECT DESCRIPTION

4-01. Basin Description. There are 15 reservoirs on the mainstems of the Apalachicola, Chattahoochee, and Flint Rivers: 5 are Federally-owned (Corps) and 10 are privately owned projects. Of the 15 reservoirs, 12 are on the Chattahoochee River, 2 are on the Flint River, and one is on the Apalachicola River. A brief description of the Corps projects with conservation storage (presented in order from upstream to downstream) is provided below. Figure 2 shows the Corps and non-Corps reservoir projects in the ACF Basin. Plate 2-2 provides a profile view of the ACF Rivers and Reservoirs.

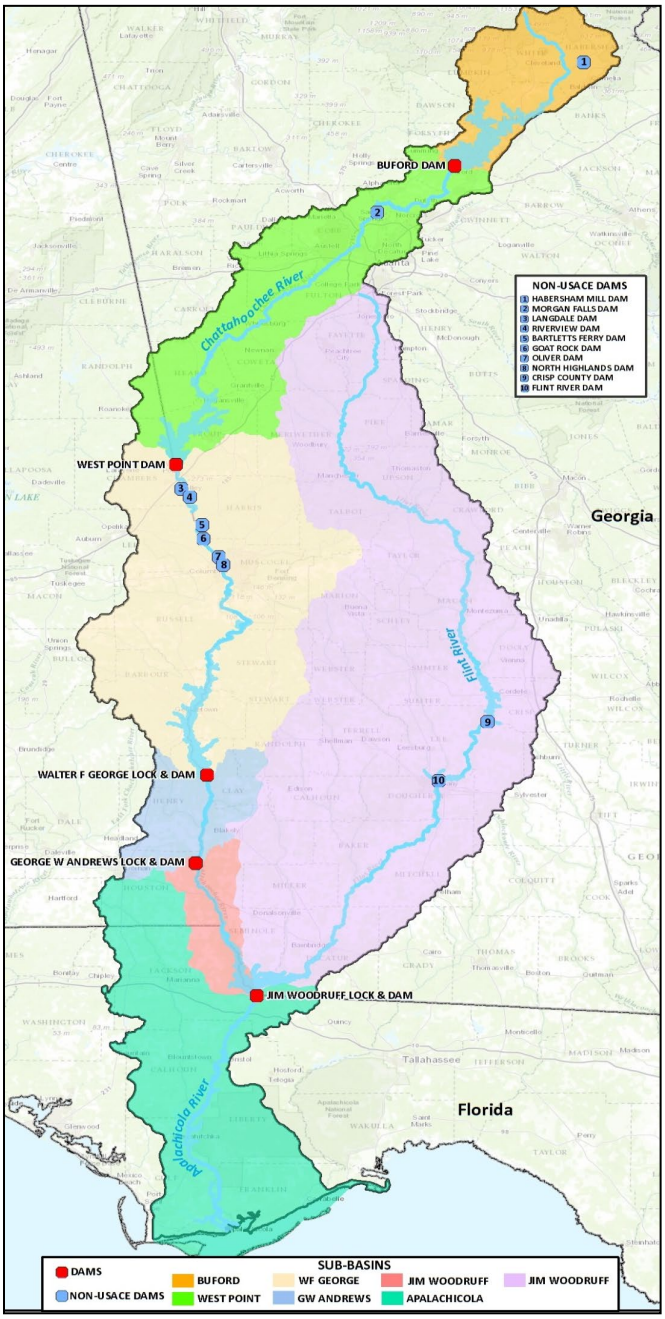


Figure 2. ACF Basin Project Location Map

4-02. Project Description. The Corps operates five projects in the ACF Basin (in downstream order): Buford Dam and Lake Sidney Lanier, West Point Dam and Lake, Walter F. George Lock and Dam and Lake, George W. Andrews Lock and Dam and Lake George W. Andrews on the mainstem of the Chattahoochee River, and Jim Woodruff Lock and Dam and Lake Seminole, immediately below the confluence of the Chattahoochee and Flint Rivers at the upstream extent of the Apalachicola River. George W. Andrews Project is a lock and dam without any appreciable water storage. Lake Sidney Lanier, West Point Lake, and Walter F. George Lake, have a combined conservation storage capacity (relative to the top of each reservoir's full summer pool) of 1,613,576 acre-feet (ac-ft). The Jim Woodruff Project is operated as a run-of-river project and only very limited pondage is available to support project purposes.

a. Lake Sidney Lanier. Lake Sidney Lanier is formed by Buford Dam, which is about 48 miles northeast of Atlanta on the Chattahoochee River. The project is at river mile 348.3 on the Chattahoochee River. The project's authorization, general features, and purposes are described in the Buford Dam and Lake Sidney Lanier Water Control Manual (Appendix B of the ACF Master Water Control Manual). The Lake Sidney Lanier top of conservation pool is elevation 1,071 feet during the late spring and summer months (May through September) and 1,070 feet during the remainder of the year as shown in the water control plan guide curve (Figure 3). However, the lake level could fluctuate significantly from the guide curve over time, depending primarily on basin inflows but also influenced by project operations, evaporation, withdrawals, and return flows. The small turbine unit at Buford Dam is run continuously and provides a continuous minimum release of 550 to 660 cfs to the Chattahoochee River. Under drier conditions when basin inflows are reduced, project operations are adjusted to conserve storage in Lake Sidney Lanier while continuing to meet project purposes in accordance with four action zones as shown on Figure 3.

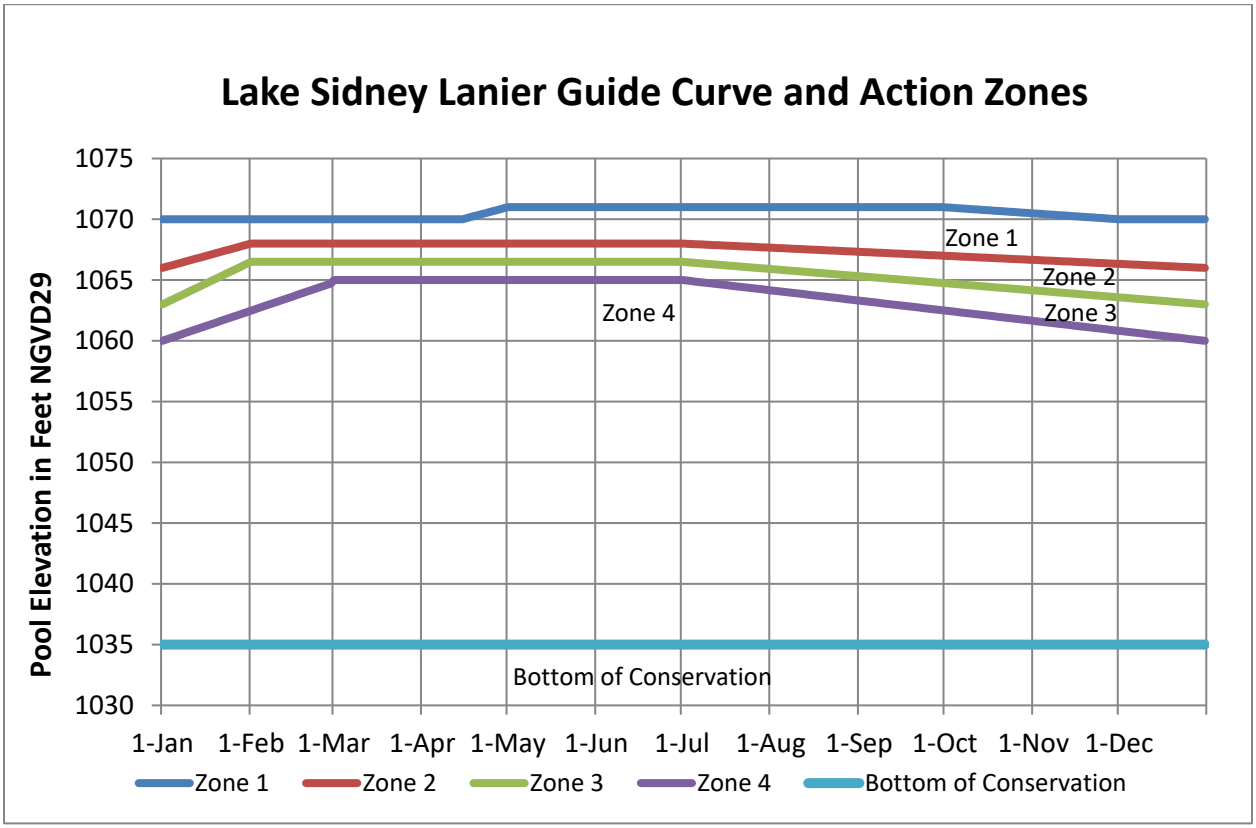


Figure 3. Lake Sidney Lanier Guide Curve and Action Zones

b. West Point Lake. West Point Lake is formed by West Point Dam, a Corps reservoir on the Alabama-Georgia state line near West Point, Georgia, at Chattahoochee river mile 201.4. The project's authorization, general features, and purposes are described in the West Point Dam and Lake Water Control Manual (Appendix E of the ACF Master Water Control Manual). The West Point Lake top of conservation pool is elevation 635 feet from June through August, transitioning to elevation 632.5 feet from mid-October through mid-November, and transitioning to elevation 628 feet from January through mid-February, as shown in the water control plan guide curve (Figure 4). However, the lake level can fluctuate significantly from the guide curve over time, dependent primarily on basin inflows but also influenced by project operations, evaporation, and withdrawals and return flows in the basin above the dam. West Point Dam provides a continuous minimum release of 670 cfs to the Chattahoochee River. Under drier conditions when basin inflows are reduced, project operations are adjusted to conserve storage in West Point Lake while continuing to meet project purposes in accordance with four action zones as shown on Figure 4. Power releases during the low-flow season augment flows at the GPC projects along the Chattahoochee River and provide water for municipal and industrial (M&I) needs in the vicinity of Columbus, Georgia, and potentially for navigation on the Apalachicola River below Jim Woodruff Lock and Dam.

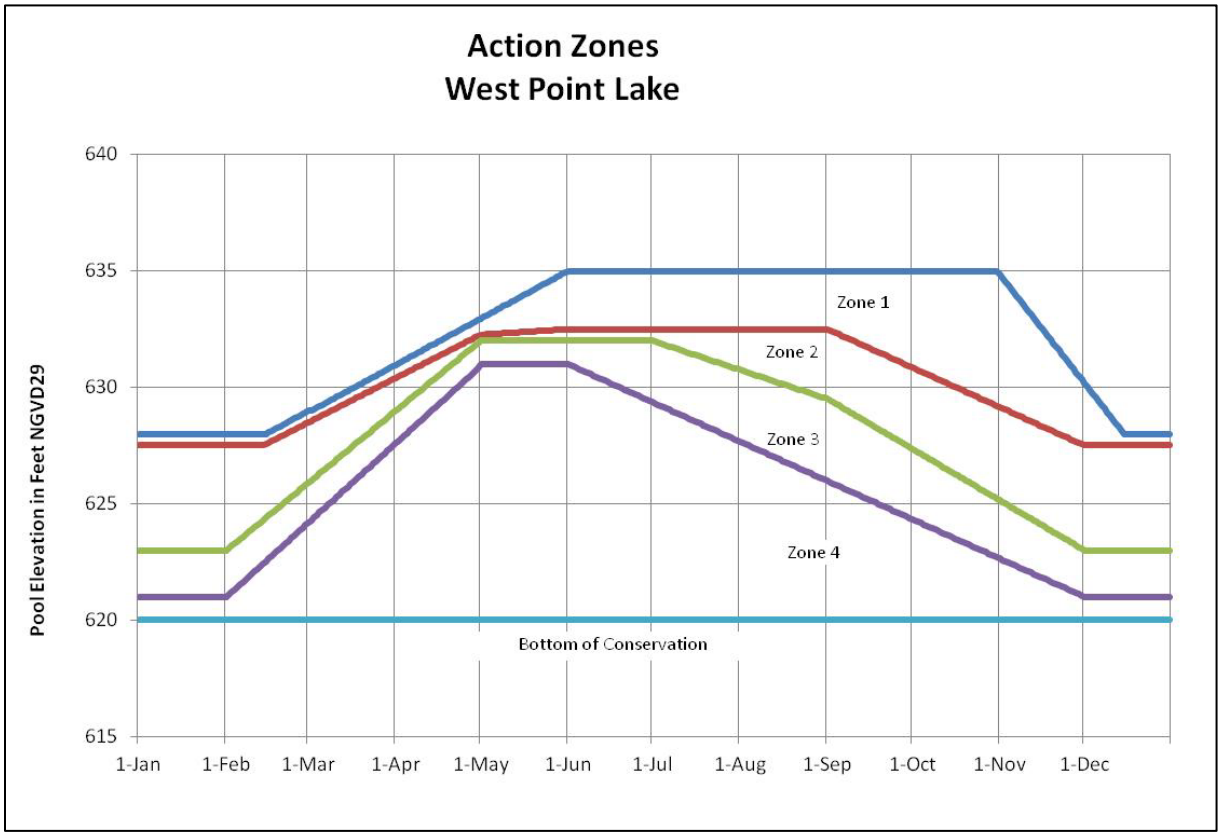


Figure 4. West Point Lake Guide Curve and Action Zones

c. Walter F. George Lake. Walter F. George Lake, also known as Lake Eufaula, is created by the Walter F. George Lock and Dam on the Chattahoochee River. Walter F. George Lock and Dam are about 86 miles downstream of Columbus, Georgia, at Chattahoochee river mile 75.0. The project's authorization, general features, and purposes are described in the Walter F. George Lock and Dam and Walter F. George Lake Water Control Manual (Appendix C of the ACF Master Water Control Manual). The Walter F. George Lake top of conservation pool is

elevation 190 feet from June through September, transitioning to elevation 188 feet from December through April, as shown in the water control plan guide curve (Figure 5). However, the lake level can fluctuate significantly from the guide curve over time, dependent primarily on basin inflows but also influenced by project operations, evaporation, and withdrawals and return flows in the basin above the dam. Under drier conditions when basin inflows are reduced, project operations are adjusted to conserve storage in Walter F. George Lake while continuing to meet project purposes in accordance with four action zones as shown on Figure 5.

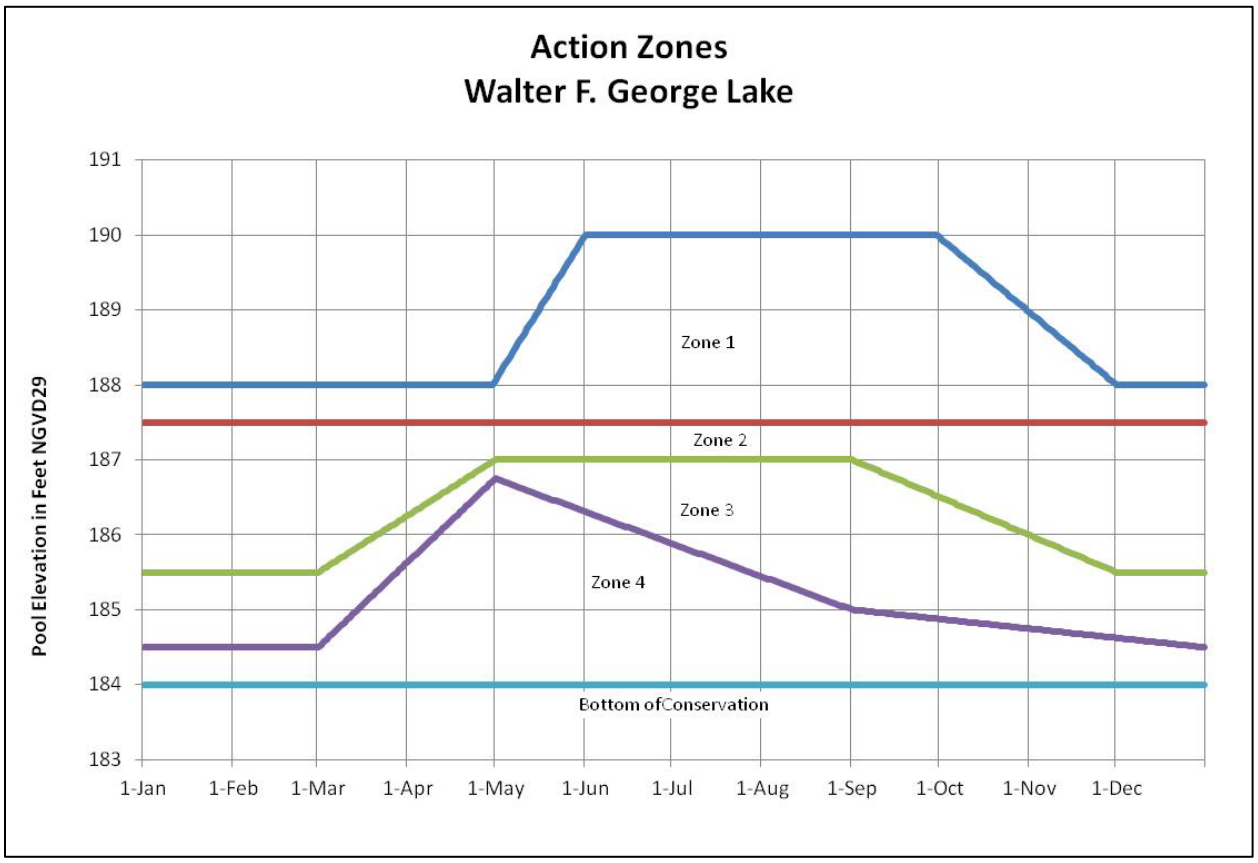


Figure 5. Walter F. George Lake Guide Curve and Action Zones

As other ACF water management objectives are addressed, lake levels might decline during prime recreation periods. Drought conditions will cause further drawdowns in lake levels. While lake levels will be slightly higher than what would naturally occur if no specific drought actions are taken, reservoir levels will decline thus triggering impacts associated with reaching initial recreation and water access limited levels. Large reservoir drawdowns affect recreational use: access to the water for boaters and swimmers is inhibited; submerged hazards (e.g., trees, shoals, boulders) become exposed or nearly exposed, posing safety issues; and exposed banks and lake bottoms become unsightly and diminish the recreation experience. Consequently, for Lake Sidney Lanier, West Point Lake, and Walter F. George Lake, certain levels are identified in each impoundment at which recreation would be affected (Table 2). The *Initial Impact level* (IIL) represents the level at which recreation impacts are first observed (i.e., some boat launching ramps are unusable, most beaches are unusable or minimally usable, and navigation hazards begin to surface). The *Recreation Impact level* (RIL) defines the level at which major impacts on concessionaires and recreation are observed (more ramps are not usable, all beaches are unusable, boats begin having problems maneuvering in and out of marina basin areas, loss of

retail business occurs). The level at which severe impacts are observed in all aspects of recreational activities is called the *Water Access Limited level* (WAL). At that point, all or almost all boat ramps are out of service, all swimming beaches are unusable, major navigation hazards occur, channels to marinas are impassable and/or wet slips must be relocated, and a majority of private boat docks are unusable.

Table 2. Impact Levels (ft NGVD29) on Recreation at Federal Projects in the ACF Basin

Project	IIL	RIL	WAL
Lake Sidney Lanier	1,066	1,063	1,060
West Point Lake	632.5	629	627
Walter F. George Lake	187	185	184

V – WATER USES AND USERS

5-01. Water Uses and Users

a. Uses - The ACF Basin rivers and lakes are a major source of water supply to many cities, industries, and farms for wastewater dilution, municipal water supply, fish and wildlife propagation, hydropower generation, and recreational boating and fishing. Most of the population in the metro Atlanta, Georgia, region depends on surface water from the Chattahoochee River for drinking water supply. Municipal and Industrial (M&I) use is the primary water demands along the middle and lower Chattahoochee River. Agricultural use is the primary demand for water along the Flint River.

b. Users - The following tables list the surface water uses and water users within the Georgia, Alabama, and Florida and in the ACF Basin.

Table 3. Georgia Surface Water Use in the ACF Basin, 2005

Water use category	Quantity (mgd)	% of Total
Total Use	*1, 326.51*	*100%*
Public Supply	525.75	39.6%
Domestic and Commercial	6.90	0.5%
Industrial and Mining	121.84	9.2%
Irrigation	75.92	5.7%
Livestock	16.06	1.3%
Thermoelectric Power Generation	580.04	43.7%

Table 4. Georgia M&I Surface Water Withdrawals in the ACF Basin

River basin	Permit holder	Permit number	County	Source water	Permit limit max day (mgd)	Permit limit monthly average (mgd)
Upper Chattahoochee River Basin – headwaters to Whitesburg, GA						
Chattahoochee	City of Baldwin	068-1201-04	Habersham	Chattahoochee River	4.000	3.000
Chattahoochee	City of Clarkesville	068-1201-03	Habersham	Soque River	1.500	1.000
Chattahoochee	City of Cornelia	068-1201-01	Habersham	Hazel Creek, Camp Creek Reservoir, Emergency Camp Cr.	4.000	4.000
Chattahoochee	HaBest, Inc.[a]	068-1201-06	Habersham	Soque River	223.000	128.000
Chattahoochee	White County Water & Sewer Authority	154-1202-02	White	Turner Creek	2.000	1.800
Chattahoochee	Birchriver Chestatee Company, LLC	093-1202-03	Lumpkin	Chestatee River	0.430	0.430

River basin	Permit holder	Permit number	County	Source water	Permit limit max day (mgd)	Permit limit monthly average (mgd)
Chattahoochee	Dahlonega, City of	093-1204-03	Lumpkin	Yahoola Creek Reservoir	9.100	6.800
Chattahoochee	Dahlonega, City of, New Plant	093-1204-01	Lumpkin	Yahoola Creek	1.500	1.250
Chattahoochee	McRae and Stolz, Inc	042-1202-01	Dawson	Lake Sidney Lanier	0.780	0.500
Chattahoochee	Buford, City of	069-1290-04	Hall	Lake Sidney Lanier	2.500	2.000
Chattahoochee	Gainesville, City of	069-1290-05	Hall	Lake Sidney Lanier	35.000	30.000
Chattahoochee	LLI Management Company, LLC	069-1205-01	Hall	Lake Sidney Lanier	0.600	0.600
Chattahoochee	LLI Management Company, LLC (Pineisle)	069-1205-02	Hall	Lake Sidney Lanier	0.600	0.600
Chattahoochee	Gwinnett County Water & Sewerage Auth	069-1290-06	Hall	Lake Sidney Lanier		150.000
Chattahoochee	Cumming, City of	058-1290-07	Forsyth	Lake Sidney Lanier	21.000	18.000
Chattahoochee	Forsyth County Board of Commissioners	058-1207-06	Forsyth	Lake Sidney Lanier	16.000	14.000
Chattahoochee	Lanier Golf Club	058-1207-05	Forsyth	Golf Course Pond #1	0.290	0.210
Chattahoochee	Sequoia Golf Olde, Atlanta LLC	058-1207-03	Forsyth	ManMade Lakes	0.340	0.200
Chattahoochee	Sequoia Golf Windermere, LLC	058-1207-09	Forsyth	James Creek	0.400	0.400
Chattahoochee	Southeast Investments, L.L.C.	058-1207-08	Forsyth	Dick Creek	0.200	0.080
Chattahoochee	Dekalb Co Public Works Water & Sewer	044-1290-03	Dekalb	Chattahoochee River	140.000	140.000
Chattahoochee	Atlanta Athletic Club	060-1209-02	Fulton	Chattahoochee River	0.860	0.430
Chattahoochee	Atlanta, City of	060-1291-01	Fulton	Chattahoochee River	180.000	180.000
Chattahoochee	Atlanta-Fulton Co. Water Res Commission	060-1207-02	Fulton	Chattahoochee River	90.000	90.000
Chattahoochee	Cherokee Town & Country Club	060-1290-09	Fulton	Bull Sluice Lake	0.720	0.430
Chattahoochee	GCG Members' Purchasing Committee, Inc.	060-1209-04	Fulton	Big Creek	2.000	1.000
Chattahoochee	Palmetto, City of	060-1218-01	Fulton	Cedar Creek	0.600	0.450
Chattahoochee	Riverfarm Enterprises, Inc. (RiverPines Golf)	060-1207-04	Fulton	Johns Creek	1.150	0.500
Chattahoochee	Roswell, City of Big Creek	060-1209-01	Fulton	Big Creek	1.200	1.200
Chattahoochee	Standard Golf Club	060-1209-03	Fulton	Unnamed tributary to Johns Creek	0.750	0.600
Chattahoochee	Tattersall Club Corp	060-1290-08	Fulton	Chattahoochee River	0.250	0.250

River basin	Permit holder	Permit number	County	Source water	Permit limit max day (mgd)	Permit limit monthly average (mgd)
Chattahoochee	Caraustar Mill Group, Inc. - Mill 2	033-1214-02	Cobb	Sweetwater Creek	0.864	0.864
Chattahoochee	Caraustar Mill Group, Inc. - Sweetwater	033-1214-01	Cobb	Sweetwater Creek	0.560	0.490
Chattahoochee	Cobb Co Marietta Water Authority	033-1290-01	Cobb	Chattahoochee River	87.000	87.000
Chattahoochee	Georgia Power Co Plant Atkinson	033-1291-09	Cobb	Chattahoochee River	432.000	432.000
Chattahoochee	Georgia Power Co Plant McDonough	033-1291-03	Cobb	Chattahoochee River	394.000	394.000
Chattahoochee	Douglasville Douglas County W & S A	048-1216-03	Douglas	Bear Creek	6.400	6.000
Chattahoochee	Douglasville Douglas County W & S A	048-1217-03	Douglas	Dog River Reservoir	23.000	23.000
Chattahoochee	East Point, City of	048-1214-03	Douglas	Sweetwater Creek	13.200	11.500
Chattahoochee	Carroll County Water Authority	022-1217-01	Carroll	HC Seaton Reservoir (Snake Cr)	8.000	8.000
Chattahoochee	Coweta County Water & Sewerage Authority	038-1218-02	Coweta	BT Brown Reservoir	10.000	6.700
Chattahoochee River - Whitesburg to Jim Woodruff Dam (Lake Seminole)						
Chattahoochee	Georgia Power Co Plant Yates	038-1291-02	Coweta	Chattahoochee River	720.000	700.000
Chattahoochee	Newnan Utilities	038-1221-01	Coweta	Sandy/Browns Creek	8.000	8.000
Chattahoochee	Newnan Utilities	038-1221-02	Coweta	Raw Water Reservoirs	14.000	14.000
Chattahoochee	Georgia Power Co Plant Wansley	074-1291-06	Heard	Chattahoochee River	116.000	116.000
Chattahoochee	Georgia Power Co Plant Wansley	074-1291-07	Heard	Service Water Reservoir	110.000	110.000
Chattahoochee	Heard County Water Authority	074-1220-03	Heard	Hillabahatchee Creek	4.000	3.100
Chattahoochee	Heard County Water Authority	074-1291-08	Heard	Chattahoochee River	0.550	0.550
Chattahoochee	Hogansville, City of	141-1222-01	Troup	Blue Creek Res	1.000	1.000
Chattahoochee	Lagrange, City of	141-1292-01	Troup	West Point Lake	22.000	20.000
Chattahoochee	West Point, City of	141-1292-02	Troup	Chattahoochee River	2.100	1.800
Chattahoochee	Chat Valley Water Supply District	072-1291-04	Harris	Chattahoochee River	8.000	5.800
Chattahoochee	Harris County Water Dept	072-1224-01	Harris	Bartlett's Ferry Res	3.000	3.000
Chattahoochee	WestPoint Home, Inc.	072-1293-03	Harris	Chattahoochee River	4.000	3.500
Chattahoochee	Columbus, City of	106-1293-05	Muscogee	Lake Oliver	90.000	90.000

River basin	Permit holder	Permit number	County	Source water	Permit limit max day (mgd)	Permit limit monthly average (mgd)
Chattahoochee	Continental Carbon	106-1225-07	Muscogee	Chattahoochee River	0.900	0.660
Chattahoochee	Eagle & Phenix Hydro-electric Project, Inc.[b]	106-1225-04	Muscogee	Chattahoochee River	1,694.000	1,694.000
Chattahoochee	Eagle & Phenix Mills, LLC	106-1293-07	Muscogee	Chattahoochee River	1.400	1.300
Chattahoochee	Smiths Water Authority	106-1225-05	Muscogee	Lake Oliver (Chattahoochee River)	8.000	8.000
Chattahoochee	Southern Power Co Plant Franklin	106-1225-08	Muscogee	Chattahoochee River	31.500	31.500
Chattahoochee	Unimin Georgia Company, L.P.	096-1225-09	Marion	Duck pond on tributary to Black Cr	1.152	0.768
Chattahoochee	Fort Benning	026-1225-01	Chattahoochee	Upatoi River	12.000	10.000
Chattahoochee	Great Southern Paper Co. (Ga. Pacific Corp.)	049-1295-01	Early	Chattahoochee River	144.000	115.000
Chattahoochee	Homestead Energy Resources, LLC[c]	049-1295-02	Early	Chattahoochee River	16,130.000	16,130.000
Chattahoochee	Longleaf Energy Associates, LLC	049-1295-03	Early	Chattahoochee River	27.000	25.000
Flint River Basin – headwaters to Jim Woodruff Dam (Lake Seminole)						
Flint	Clayton County Water Auth Flint	031-1102-07	Clayton	Flint River	40.000	40.000
Flint	Clayton County Water Auth Shoal	031-1101-01	Clayton	J.W. Smith Res./ Shoal Cr.	17.000	17.000
Flint	Board of Commissioners of Fayette County	056-1102-03	Fayette	Lake Peachtree	0.550	0.500
Flint	Board of Commissioners of Fayette County	056-1102-06	Fayette	Flat Creek Reservoir	4.500	4.000
Flint	Board of Commissioners of Fayette County	056-1102-09	Fayette	Line Cr (McIntosh Site)	17.000	12.500
Flint	Board of Commissioners of Fayette County	056-1102-10	Fayette	Whitewater Creek	2.000	2.000
Flint	Board of Commissioners of Fayette County	056-1102-12	Fayette	Horton Creek Reservoir	14.000	14.000
Flint	Board of Commissioners of Fayette County	056-1102-13	Fayette	Flint River	16.000	16.000
Flint	Fayetteville, City of	056-1102-14	Fayette	Whitewater Creek	3.000	3.000
Flint	Newnan Utilities	038-1102-11	Coweta	Line Creek	12.000	12.000
Flint	Newnan Utilities	038-1103-02	Coweta	White Oak Creek	7.000	7.000
Flint	Senoia, City of	038-1102-05	Coweta	Hutchins Lake	0.300	0.300
Flint	Griffin, City of	126-1190-01	Spalding	Flint River	13.200	12.000

River basin	Permit holder	Permit number	County	Source water	Permit limit max day (mgd)	Permit limit monthly average (mgd)
Flint	Griffin, City of	114-1104-03	Pike	Still Branch Reservoir	48.000	42.000
Flint	Griffin, City of	114-1191-02	Pike	Flint River	50.000	50.000
Flint	Zebulon, City of	114-1104-01	Pike	Elkins Creek	0.400	0.300
Flint	Roosevelt Warm Springs Rehab	-	Meriwether	Cascade Creek	0.144	0.144
Flint	Woodbury, City of	099-1106-02	Meriwether	Cain Cr Res On Pond Cr	0.750	0.500
Flint	Southern Mills, Inc.	145-1104-02	Upson	Thundering Springs Lake	0.650	0.500
Flint	Thomaston, City of	145-1105-01	Upson	Potato Creek	4.400	3.400
Flint	Thomaston, City of	145-1105-02	Upson	Potato Creek	1.440	0.400
Flint	Thomaston, City of	145-1105-03	Upson	Raw Water Cr Res	4.300	4.300
Flint	Manchester, City of	130-1106-05	Talbot	Rush Creek Reservoir	2.000	1.440
Flint	Manchester, City of	130-1106-06	Talbot	Lazer Creek	4.300	3.700
Flint	Unimin Georgia Company, L.P.	133-1109-01	Taylor	Remote Pond on Black Creek	2.592	1.728
Flint	Unimin Georgia Company, L.P.	133-1109-02	Taylor	Black Creek (Remote Jr.)	0.576	0.384
Flint	Weyerhaeuser Company	094-1191-01	Macon	Flint River	13.500	11.500
Flint	Crisp County Power Comm - Hydro[d]	159-1112-02	Worth	Lake Blackshear	4,847.300	4,847.300
Flint	Crisp County Power Comm Steam	159-1112-01	Worth	Lake Blackshear	15.000	15.000
Flint	Georgia Power Co Plant Mitchell	047-1192-01	Dougherty	Flint River	232.000	232.000

a. Georgia withdrawal permit issued in 2007 for proposed flow through non-Corps hydroelectric power project at existing dam in Habersham County.

b. Georgia withdrawal permit (active as of 2009) for proposed non-Corps hydroelectric power development at Eagle-Phenix Dam. Request submitted to FERC on 10/21/2010 to surrender license (*Federal Register*, Vol.75, No. 209, 10/29/2010).

c. Georgia withdrawal permit (active as of 2009) for proposed non-Corps hydroelectric power development at George W. Andrews Lock and Dam. FERC terminated the license for project on 11/15/2007.

d. Georgia withdrawal permit (active as of 2009) for flow through non-Corps hydropower generation at Lake Blackshear.

Table 5. Alabama Surface Water Use in the ACF Basin, 2005

Water use category	Quantity (mgd)	% of total
Total Use	*165.95*	*100%*
Public Supply	18.92	11.4%
Industrial and Mining	29.76	17.9%
Thermoelectric Power Generation	105.36	63.5%
Irrigation	11.33	6.8%
Livestock	0.58	0.4%

Table 6. Alabama M&I Surface Water Withdrawals in the ACF Basin, 2005

Withdrawal by	County	Withdrawal (mgd)
Westpoint Home Inc. - Fairfax Finishing Plant (Westpoint Stevens Inc.)	Chambers	2.16
Chattahoochee Valley Water Supply District	Chambers	4.72
Smiths Water and Sewer Authority (Smiths Station Water System)	Lee	2.29
Opelika Water Works Board	Lee	7.48
Phenix City Utilities	Russell	7.04
WestRock	Russell	27.60
Southern Nuclear Company - Farley Nuclear Plant	Houston	105.36

Source: Hutson et al. 2009

Table 7. Florida M&I Surface Water Withdrawals in the ACF Basin

Withdrawal by	Avg daily withdrawal (monthly avg mgd)	Max daily withdrawal (monthly avg mgd)	Min daily withdrawal (monthly avg mgd)	Years for which data are available
Apalachicola River – Jim Woodruff Dam (Lake Seminole) to Apalachicola Bay				
Gulf Power (Scholz Electric)	86.72	129.60	0.0	1990–2012
St. Joe Timberland (Prudential Ins.)	0.95	10.75	0.00	1999–2008
City of Port St. Joe	0.77	4.51	0.00	2002–2012

Source: Withdrawal data compiled by USACE, Mobile District, for use in modeling the ACF Basin with HEC ResSim.

VI. – CONSTRAINTS

6-01. General. The availability of water resources in the ACF Basin is constrained by existing water supply storage contracts, Corps water control manuals, minimum flow requirements from Buford and West Point Dams, GPC FERC licenses, and industrial water quality flow needs. Existing water supply storage contracts do not include the use of the inactive storage pool and would require developing and implementing an emergency storage contract in order to access this water resource.

Each Corps project has a water control manual that specifies operational requirements for varying basin conditions and requires a deviation approval to operate outside the parameters established by the manual. The Buford Dam and Lake Sidney Lanier Project has a minimum flow release requirement, that along with local inflows, will provide a minimum of 750 cfs between May to October and 650 cfs between November to April, measured 40 miles downstream from Buford Dam in the Chattahoochee River, just upstream of the confluence with Peachtree Creek. Physical constraints of the Buford Project are generally limited to available powerhouse capacity, sluice capacity, and downstream channel capacity. As the project approaches the bottom of conservation pool, the powerhouse turbines can no longer effectively run and discharge will be limited to sluice operation. Also, channel capacity limitations downstream constrains peaking operations from both units to four hours or less to keep the volume of the releases within bankfull capacity. The West Point Project has a minimum flow release requirement of 670 cfs and a channel capacity limitation of 40,000 cfs. The Walter F. George Project has a maximum head limit constraint (difference between lake and tailwater elevations) of 88 feet and a downstream bankfull channel capacity of 65,000 cfs. The George W. Andrews Project has a maximum head limit constraint of 25-26 feet (dependent on pool elevation) and a downstream bankfull channel capacity of 40,000 cfs. The Jim Woodruff Project has a varying head limitation that ranges between 33 to 38.5 feet and a downstream bankfull channel capacity of 77,000 cfs. The operation of the Jim Woodruff Project is also constrained by varying aspects including limitations on ramping rates and minimum flow requirements downstream.

The GPC projects are operated under FERC licenses which define specific operational requirements for each project and require approval from FERC and possibly the Corps and State agencies before any revised operations could be implemented. Some industrial NPDES permits within the ACF Basin have water quality discharge limitations which are impacted by the volume of water flow in the river.

VII – DROUGHT MANAGEMENT PLAN

7-01. General. The Water Control Plan for the ACF Basin and each individual project implements drought conservation actions on the basis of composite conservation storage in Lake Sidney Lanier, West Point Lake, and Walter F. George Lake. Composite conservation storage is calculated by combining the conservation storage of Lake Sidney Lanier, West Point Lake, and Walter F. George Lake. Each of the individual storage reservoirs consists of four action zones. The composite conservation storage uses the four zone concepts as well; i.e., Zone 1 of the composite conservation storage represents the combined storage available in Zone 1 for each of the three storage reservoirs. Drought operations are triggered when the composite conservation storage falls below the bottom of Zone 2 into Zone 3. Simulation modeling of the Water Control Plan for the 73 years between 1939 and 2011 gives an indication of how often to expect drought conservation actions. Figure 6 presents the expected percent of time that the conservation storage will be in each composite storage zone according to historical flows. Two scenarios are presented: (1) The blue bar represents the previous operating plan in place prior to this manual update which includes the year 2007 water supply occurring from Lake Sidney Lanier and from the Chattahoochee River below Buford Dam and (2) The red bar represents the current operating plan detailed in this manual update which includes water supply withdraws based on the increased water supply demand as described in Water Control Plan section 7-09.

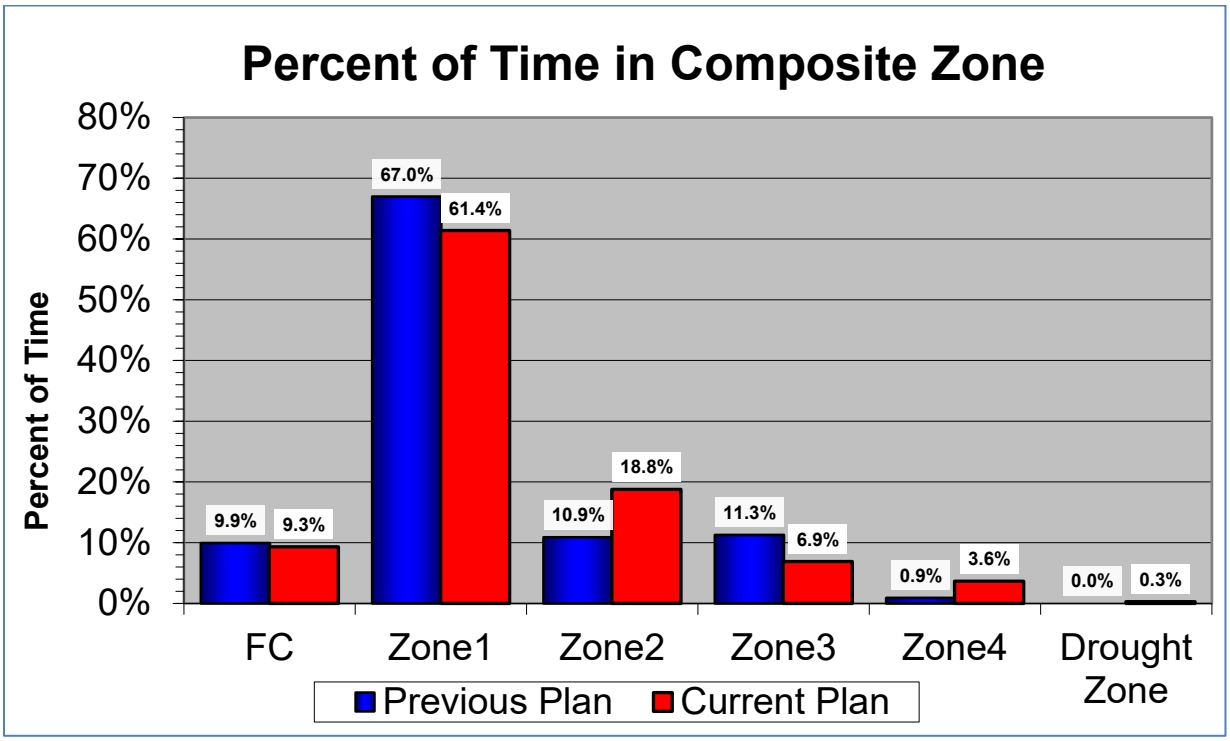


Figure 6. Percent of Time in Composite Conservation and Flood Zones

7-02. Drought Contingency Plan

The drought plan specifies a minimum release from Jim Woodruff Lock and Dam, and temporarily suspends the normal minimum release and maximum fall rate provisions until composite conservation storage in the basin is replenished to a level that can support normal minimum release and maximum fall rate. Under the drought plan, minimum discharge is determined in relation to the composite conservation storage and not the average basin inflow.

The drought plan is triggered when the composite conservation storage falls below the bottom of Zone 2 into Zone 3 (Figure 7). At that time, all the composite conservation storage Zone 1 through 3 provisions (seasonal storage limitations, maximum fall rate schedule, and minimum flow thresholds) are suspended, and management decisions are based on the provisions of the drought plan. The drought plan includes the option for a temporary waiver from the existing water control plan to allow temporary storage above the winter pool guide curve at the Walter F. George and West Point Projects to provide additional conservation storage for future needs, if conditions in the basin dictate the need for such action. The drought plan prescribes two minimum releases on the basis of composite conservation storage in Zones 3 and 4 and an additional zone referred as the Drought Zone. Additionally, two flow targets on the Chattahoochee River are prescribed in the Drought Zone. The Drought Zone delineates a volume of water roughly equivalent to the inactive storage in lakes Sidney Lanier, West Point, and Walter F. George, plus Zone 4 storage in Lake Sidney Lanier. The Drought Zone line has been adjusted to include a smaller volume of water at the beginning and end of the calendar year. When the composite conservation storage is within Zone 4 and above the Drought Zone, the minimum release from Jim Woodruff Lock Dam is 5,000 cfs and all basin inflow above 5,000 cfs that is capable of being stored may be stored. Once the composite conservation storage falls below the Drought Zone, the minimum release from Jim Woodruff Lock and Dam is 4,500 cfs and all basin inflow above 4,500 cfs that is capable of being stored may be stored. When transitioning from a minimum release of 5,000 to 4,500 cfs, fall rates are limited to 0.25feet/day drop. The flow target at Columbus, Georgia (Gage No. 02341460) is altered to maintain a minimum average flow of 1,350 cfs for two days each calendar week starting each Monday. The flow target at Columbus, Georgia (Gage No. 02343801) is altered to maintain a minimum average flow of 2,000 cfs for two days per calendar week starting each Monday. The 4,500-cfs minimum release and the flow targets at Columbus and Columbia are maintained until composite conservation storage returns to a level above the top of the Drought Zone, at which time the 5,000-cfs minimum release is reinstated. The drought plan provisions remain in place until conditions improve such that the composite conservation storage reaches Zone 1. At that time, the temporary drought plan provisions are suspended and all the other provisions of the basin water control plan are reinstated.

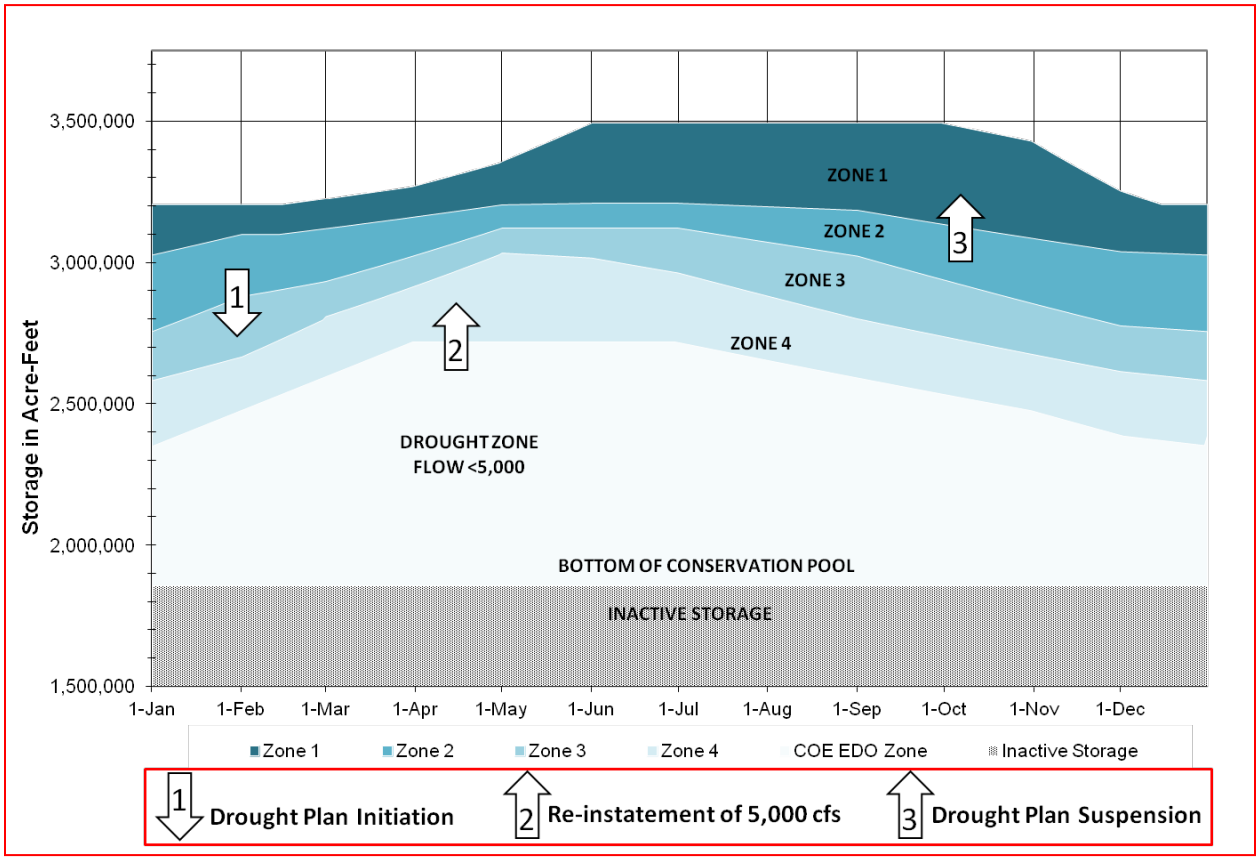


Figure 7. ACF Composite Conservation Storage Zones and Drought Plan Triggers

During the drought contingency operations, a monthly monitoring plan will be implemented that tracks composite conservation storage to determine the water management operations (the first day of each month will represent a decision point) that will be implemented and to determine which operational triggers, if any, should be applied. There is a special provision for the month of March under drought operation. If recovery conditions are achieved in February (after the 1st), drought plan provisions will not be suspended until 1 April, unless the level of composite conservation storage reaches the top of zone 1 (i.e. all Federal reservoirs are full) prior to 1 March. The month of March usually provides the highest inflows into the reservoirs, but also has some of the highest flow requirements for release from Jim Woodruff Lock and Dam. This extension of drought operations allows for the full recovery of the Federal storage projects in preparation for the spawning and spring refill period that occur from April through June.

In addition, recent climatic and hydrological conditions experienced and meteorological forecasts are used when determining the set of operations in the upcoming month. Although the drought plan provides for flows lower than 5,000 cfs in the river, provisions that allow for reduced flows during the refill period when system storage is lower and storage conservation measures when composite conservation storage is in Zone 4 should result in fewer occasions when those low flows are triggered or in occasions where storage shortages result in flows less than 5,000 cfs. Details of implementing the DCP for each individual project are provided in the individual project water control plans documented in the individual water control manuals as appendices to the master water control manual.

7-03. Extreme Drought Conditions. When the total composite conservation storage drops to about 10 percent, additional emergency actions might be necessary. When conditions have worsened to that extent, use of the inactive storage must be considered. Such an occurrence could be contemplated in the second or third year of a drought. Inactive storage zones have been designated for the three Federal projects with significant storage (Figure 8). Table 8 provides the inactive storage capacity within the inactive storage zones for each project. Figures 9 through 11 provide detailed information for each project including storage capacities and critical lake levels. The operational concept established for the extreme drought impact level and to be implemented when instituting the use of inactive storage is based on the following actions:

(1) Inactive storage availability is identified to meet specific critical water use needs within existing project authorizations.

(2) Emergency uses will be identified in accordance with emergency authorizations and through stakeholder coordination. Typical critical water use needs within the basin are associated with public health and safety. Table 9 lists the users of the critical water needs that have been identified in the ACF Basin during past droughts.

(3) Weekly projections of the inactive storage water availability to meet the critical water uses from Buford Dam downstream to the Apalachicola River will be used when making water control decisions regarding withdrawals and water releases from the Federal reservoirs.

(4) The inactive storage action zones will be instituted as triggers to meet the identified priority water uses (releases will be restricted as storage decreases). Figure 8 lists the typical critical water uses for each inactive storage zone.

(5) Dam safety considerations will always remain the highest priority. The structural integrity of the dams due to static head limitations (Jim Woodruff, 38.5 feet; George W. Andrews, 25-26 feet (dependent on pool elevation); Walter F. George, 88 feet) will be maintained.

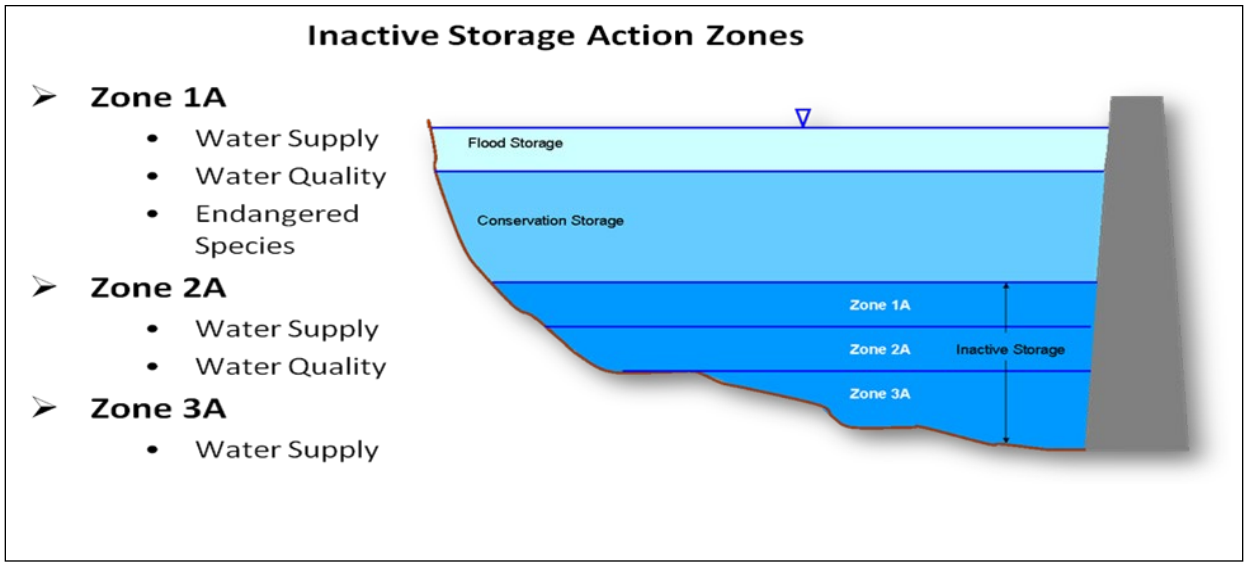
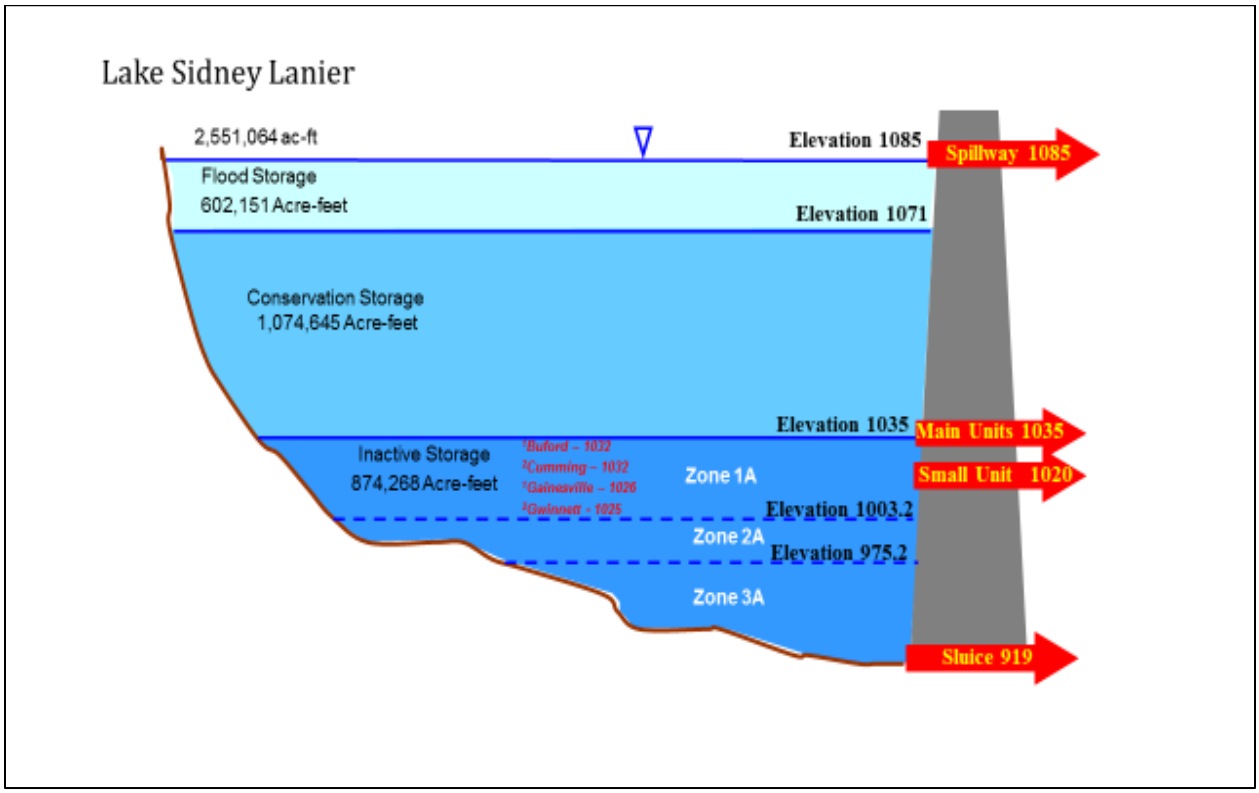


Figure 8. Inactive Storage Zones and Typical Water Use Needs

Table 8. ACF Reservoir Inactive Storage Zone Capacities (ac-ft)

Project	Zone 3A	Zone 2A	Zone 1A	Unusable Inactive
Lake Sidney Lanier	113,327	232,245	528,696	0
West Point Lake	33,344	138,331	53,620	73,101
Walter F. George Lake	0	169,605	311,207	170,960
Total	146,671	540,181	893,523	244,061



Notes: [1] Buford and Gainesville have existing relocation water supply contracts; [2] Cumming and Gwinnett intakes are available for emergency withdrawals subject to approval of emergency contracts under emergency authorizations during drought.

Figure 9. Lake Sidney Lanier Storage Zones, Storage Capacities, and Critical Lake Levels (all elevations in feet NGVD29)

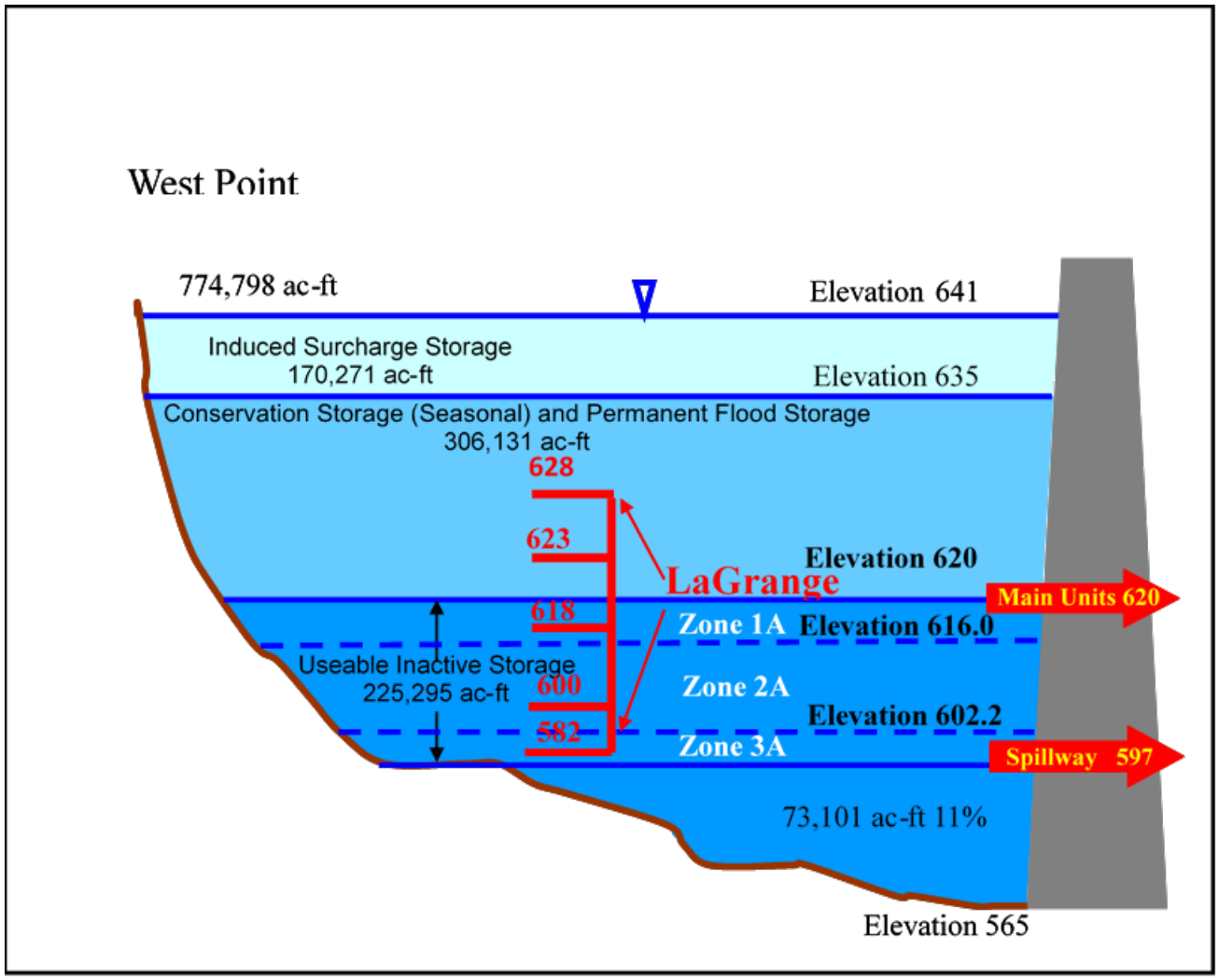


Figure 10. West Point Lake Storage Zones, Storage Capacities, and Critical Lake Levels (all elevations in feet NGVD29)

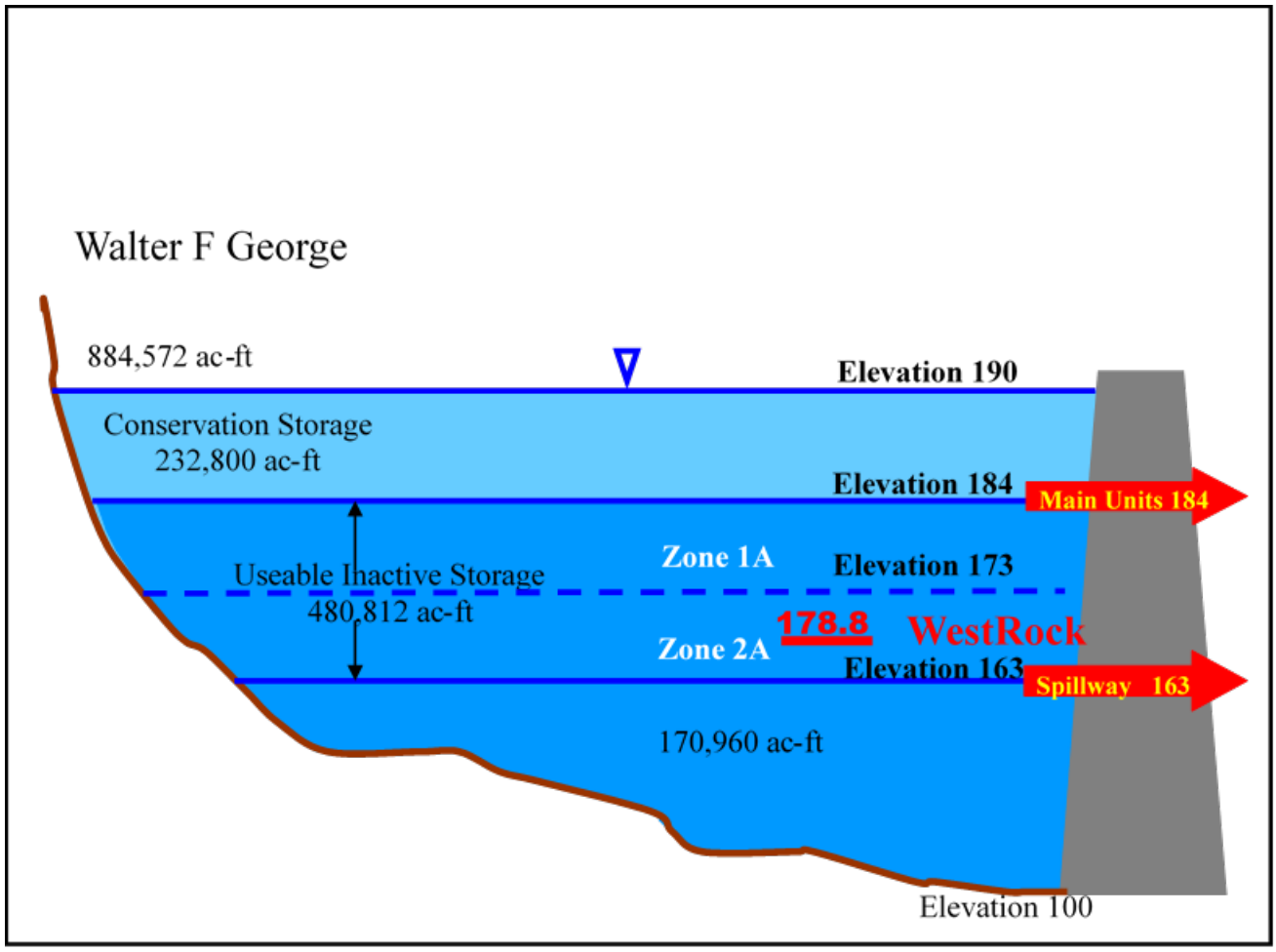


Figure 11. Walter F. George Lake Storage Zones, Storage Capacities, and Critical Lake Levels (all elevations in feet NGVD29)

Table 9. Critical Water Needs by User Identified in the ACF Basin

Water Quality	Municipal Intake
Buford Trout Hatchery	Gwinnett
Atlanta Waste Assimilation	Cumming
WP dam tailwater	Gainesville
Eufaula National Wildlife Refuge	Buford
WFG tailwater	Cobb County-Marietta Water Authority
Apalachicola Bay	Chat Valley Water Supply District
State Water Quality	City of Atlanta
7Q10 at water returns	City of Columbus
Reservoir Fish & Wildlife Resources	City of LaGrange
	City of West Point
	Dekalb County
	Harris County Water Dept
	Phenix City
	Smiths Water and Sewer Authority
Industrial Intake	**Thermal Power**
Atlanta Athletic Club	Farley Nuclear Plant
Eagle & Phenix Hydroelectric Project, Inc.	Plant Sholz
Georgia Pacific	Plant Yates
WestRock (Mahrt Mill - River Intake)	Plant Wansley
Tattersall Club Corp	Plant McDonough
Westpoint Stevens Inc	

Table 10 list critical water intakes in the ACF Basin. The minimum operating level represents the lowest water surface elevation in feet that the facility can safely withdraw water. This information was obtained from stakeholders during the 2007-2009 drought. While the table is not comprehensive it represents the best information available at the time of print.

Table 10. Critical Water Intakes in the ACF Basin

County	Facility	Permit Number	Municipal or Industrial	River Basin	Source Water	Permitted Monthly Average (Millions of Gallons/Day)	Minimum Operating Level (Water Surface in feet above NGVD 1929)
Fulton	Atlanta Athletic Club	060-1209-02	I	Chattahoochee	Chattahoochee River	0.43	unknown
Fulton	Atlanta, City of	060-1291-01	M	Chattahoochee	Chattahoochee River	180	745
Fulton	Atlanta-Fulton Co. Water Res. Commission	060-1207-02	M	Chattahoochee	Chattahoochee River	90	877
Habersham	Baldwin, City of	068-1201-04	M	Chattahoochee	Chattahoochee River	3	unknown
Hall	Buford, City Of	069-1290-04	M	Chattahoochee	Lake Sidney Lanier	2	1032
Harris	Chat Valley Water Supply District	072-1291-04	M	Chattahoochee	Chattahoochee River	5.8	548
Fulton	Cherokee Town & Country Club	060-1290-09	I	Chattahoochee	Bull Sluice Lake	0.43	unknown

County	Facility	Permit Number	Municipal or Industrial	River Basin	Source Water	Permitted Monthly Average (Millions of Gallons/Day)	Minimum Operating Level (Water Surface in feet above NGVD 1929)
Clayton	Clayton County Water Auth - Shoal	031-1101-01	M	Flint	J.W. Smith Res./Shoal Cr.	17	
Cobb	Cobb Co - Marietta Water Authority	033-1290-01	M	Chattahoochee	Chattahoochee River	87	793
Muscogee	Columbus, City Of	106-1293-05	M	Chattahoochee	Lake Oliver	90	300
Muscogee	Continental Carbon	106-1225-07	I	Chattahoochee	Chattahoochee River	0.66	unknown
Habersham	Cornelia, City Of	068-1201-01	M	Chattahoochee	Hazel Creek,Camp Cr Res, Emergency Camp Cr	4	unknown
Forsyth	Cumming, City Of	058-1290-07	M	Chattahoochee	Lake Sidney Lanier	18	1041
Dekalb	Dekalb Co Public Works - Water & Sewer	044-1290-03	M	Chattahoochee	Chattahoochee River	140	867
Muscogee	Eagle & Phenix Hydroelectric Project, Inc.	106-1225-04	I	Chattahoochee	Chattahoochee River	1,694.00	unknown
Muscogee	Eagle & Phenix Mills, LLC	106-1293-07	I	Chattahoochee	Chattahoochee River	1.3	unknown
Douglas	East Point, City Of	048-1214-03	M	Chattahoochee	Sweetwater Creek	11.5	724
Forsyth	Forsyth County Board Of Commissioners	058-1207-06	M	Chattahoochee	Lake Sidney Lanier	14	no intake
Hall	Gainesville, City Of	069-1290-05	M	Chattahoochee	Lake Sidney Lanier	30	1025
Cobb	Georgia Power Co - Plant Atkinson	033-1291-09	I	Chattahoochee	Chattahoochee River	432	
Muscogee	Georgia Power Co - Plant Goat Rock	106-1225-08	I	Chattahoochee	Chattahoochee River	31.5	unknown
Cobb	Georgia Power Co - Plant McDonough	033-1291-03	I	Chattahoochee	Chattahoochee River	394	738
Dougherty	Georgia Power Co - Plant Mitchell	047-1192-01	I	Flint	Flint River	232	unknown
Heard	Georgia Power Co - Plant Wansley	074-1291-06	I	Chattahoochee	Chattahoochee River	116	662
Heard	Georgia Power Co - Plant Wansley	074-1291-07	I	Chattahoochee	Service Water Reservoir	110	
Coweta	Georgia Power Co - Plant Yates	038-1291-02	I	Chattahoochee	Chattahoochee River	700	683
Early	Great Southern Paper Co. (Ga. Pacific Corp.)	049-1295-01	I	Chattahoochee	Chattahoochee River	115	75
Hall	Gwinnett County Water & Sewerage Auth	069-1290-06	M	Chattahoochee	Lake Sidney Lanier	150	1029
Harris	Harris County Water Dept	072-1224-01	M	Chattahoochee	Bartlett's Ferry Res	3	unknown
Heard	Heard County Water Authority	074-1291-08	I	Chattahoochee	Chattahoochee River	0.55	unknown
Early	Homestead Energy Resources, LLC	049-1295-02	I	Chattahoochee	Chattahoochee River	16,130.00	unknown
Troup	Lagrange, City Of	141-1292-01	M	Chattahoochee	West Point Lake	16	600
Hall	LLI Management Company, LLC	069-1205-01	I	Chattahoochee	Lake Sidney Lanier	0.6	unknown
Hall	LLI Management Company, LLC (Pineisle)	069-1205-02	I	Chattahoochee	Lake Sidney Lanier	0.6	unknown

County	Facility	Permit Number	Municipal or Industrial	River Basin	Source Water	Permitted Monthly Average (Millions of Gallons/Day)	Minimum Operating Level (Water Surface in feet above NGVD 1929)
Early	Longleaf Energy Associates, LLC	049-1295-03	I	Chattahoochee	Chattahoochee River	25	unknown
Dawson	McRae and Stolz, Inc.	042-1202-01	I	Chattahoochee	Lake Sidney Lanier	0.5	unknown
Muscogee	Smiths Water Authority	106-1225-05	M	Chattahoochee	Lake Oliver (Chat R)	8	322
Fulton	Tattersall Club Corp	060-1290-08	I	Chattahoochee	Chattahoochee River	0.25	unknown
Troup	West Point, City Of	141-1292-02	M	Chattahoochee	Chattahoochee River	1.8	554
Harris	WestPoint Home, Inc.	072-1293-03	I	Chattahoochee	Chattahoochee River	3.5	547.75
White	White County Water & Sewer Authority	154-1202-02	M	Chattahoochee	Turner Creek	1.8	
Houston	Southern Nuclear Company - Farley Nuclear Plant	AL0024619	I	Chattahoochee River	Seminole Lake		74.5
Lee	Opelika Water Works Board	0000816	M	Chattohoochee River	Lake Harding	4.5	521
Russell	WestRock	AL0000817	I	Chattahoochee River	W.F. George Lake	22	185
Russell	Phenix City Utilities	0001142	M	Chattahoochee River	North Highland Reservoir		258
Jackson	Plant Sholz		I	Apalachicola River	Apalachicola River		37.5
	Trout Hatchery			Chattahoochee River	Chattahoochee River		902

VIII – DROUGHT MANAGEMENT COORDINATION AND PROCEDURES

8-01. Corps Coordination. It is the responsibility of the Mobile District to monitor climatological and hydrometeorological conditions at all times to make prudent water management decisions with water conservation as a priority. Mobile District makes daily decisions and coordinates regularly with other District representatives from the various areas for which the river systems are operated - hydropower, recreation, navigation, environmental, and others to exchange information concerning the operation of the river system. Such coordination includes conducting weekly meetings with these other district elements. Daily water management decisions regarding water availability, lake level forecasts, and storage forecasts are determined using the information obtained along with current project and basin hydrometeorological data. A weekly District River System Status report is prepared that summarizes the conditions in each of the river basins. When conditions become evident that normal, low-flow conditions are worsening, Mobile District will elevate the District coordination to a heightened awareness. When drought conditions are imminent, Emergency Management representatives will be notified of the conditions and will be included in the regular coordination activities.

8-02. Interagency Coordination. Mobile District will be involved with the NIDIS coordination for interagency and stakeholder teleconferences. Additionally, Mobile District will support the environmental team regarding actions that require coordination with the USFWS for monitoring threatened and endangered species and with the Environmental Protection Agency (EPA), Georgia Environmental Protection Division (GAEPD), Florida Department of Environmental Protection (FDEP) and Alabama Department of Environmental Management (ADEM) regarding requests to lower water quality minimum flow requirements below Buford Dam and West Point Dam.

8-03. Public Information and Coordination. When Mobile District determines that a change in the water control actions from normal regulation to drought regulation is imminent, it is important that various users of the system are notified so that any environmental or operational preparations can be completed before any impending reduction in reservoir discharges, river levels, and reservoir pool levels. In periods of severe drought in the ACF Basin it will be within the discretion of the Division Commander to approve the enactment of ACF Basin Water Management conference calls. For the ACF Basin, when the basin composite conservation storage is within Zone 3 and climatic predictions predict a continuation of severe drought conditions that will deplete the composite conservation storage into Zone 4 (Drought Operations), the Division Commander will initiate the teleconference calls. The purposes of the calls are to share ongoing water management decisions with basin stakeholders and to receive stakeholder input regarding needs and potential effects on users in the basin. Depending on the severity of the drought conditions, the calls will be conducted at regular monthly or biweekly intervals. If issues arise, more frequent calls would be implemented. Table 11 lists state and Federal agencies and active stakeholders in the ACF Basin that have participated in previous ACF Basin water management teleconferences and meetings.

Local Press. The local press consists of periodic publications in or near the ACF Basin. Montgomery, Columbus, and Atlanta have some of the larger daily papers. The papers often publish articles related to the rivers and streams. Their representatives have direct contact with the Corps through the Public Affairs Office. In addition, they can access the Corps web pages for the latest project information. The Mobile District Public Affairs Office issues press releases as necessary to provide the public with information regarding water management issues and activities and also provides information via the Mobile District internet homepage.

Corps Bulletins. The Corps and the Mobile District also publish e-newsletters regularly, but they are not widely distributed to the general public. A District River System Status report is

updated weekly. That report along with historical and real-time information is available at the Mobile District Water Management Section homepage http://water.sam.usace.army.mil/.

Table 11. ACF Basin Water Management Teleconference Stakeholder Participants

Alabama	**Others**
Office of Governor	AL Rivers Alliance
AL OWR	Apalachicola Natl. Estuarine Research Reserve
AL DEM	Apalachicola River Keeper
AL Dept of Conservation	ARC (Atlanta Regional Commission)
	CCMWA
Florida	City of Gainesville
Office of Governor	City of LaGrange
FL DEP	City of West Point
FL F&W Conservation Commission	Columbus Water Works
NWFWMD	Franklin Co. Seafood Workers Assoc (FCSWA)
	Georgia Pacific(Cedar Springs)
Georgia	Georgia Power
Office of Governor	Gulf Power (FL)
GA DNR	Gwinnett Co Water
GA EPD	Help Save Apalachicola River
	Lake Lanier Association
	Lake Seminole Association
Federal agencies	MeadWestvaco
EPA	Middle Chattahoochee Water Coalition
FERC – Atlanta	SeFPC
FERC – DC	Southern Company
NPS (Chattahoochee Nat Recreational Area)	Southern Nuclear (Hydro)
SEPA	TRWDA (Tri-Rivers Waterway Dev Assoc)
U.S. Coast Guard	Upper Chattahoochee River Keeper
USFWS-AL	West Point Lake Coalition
USFWS-FL	Weyerhaeuser
USFWS-GA	
USGS-AL	
USGS-FL	
USGS-GA	