0001

Comment ID: 0001
Author Name: Helen Lankford
Organization:

Please do not allow Atlanta's over-development to deplete the waters that feed into Apalachicola Bay. The livelyhood of too many depend on the actions of the Corps of Engineers.

0002

Comment ID: 0002
Author Name:
Organization:

While I appreciate the many competing interests at play in management of the ACF system, and while I live very near West Point Lake, I realize that no part of the system should be sacrificed for the benefit of another element. I feel that many upstream consumers are hypocritical in their viewpoint of how the system should be managed, and motivated almost exclusively by self-interest (primarily financial).My family and I enjoy outdoor and recreational activities on many parts of the Chattahoochee and Flint Rivers, not just near our home. Our chief concern at present is maintaining and preserving the Flint in its present atural"" state to the greatest extent possible. I don't favor further damming of the Flint if it can be avoided.I've heard my friends engage in hyperbole to the effect that the Corps values mussels over people. While I realize the Florida consumers have co-opted environmental concerns to serve their own economic self-interest

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Comment ID: 0003
Author Name: Gayle O\\\'Neal
Organization:

0003

From the presentations I have listened to at the Scoping meeting in LaGrange on 10-22-08, I submit the following: Resovoirs should be built along he Flint River to help with the Lake Seminole Area since all the water just keeps going. As far as the lake level in West Point Lake being dropped to such a low winter level in order to be prepared for the next flood"" this is absolutely riduculous. When the first flood condition since the lake was impounded in 1973 the lake was at full pool and we handled it. Now I understand that measures have to be taken to protect the integrity of the Dam but our area has tried to be good stuards of the area by controlling development around the lake area to prevent erosion and to control the draw from the lake for drinking water. Limit the development around the Lanier area and even though they have a larger storage area

---

Comment ID: 0004
Author Name: Janice Grizzle
Organization:

0004

West Point Lake must be maintained at a level (no less than 633 msl) that will enable safe recreation as mandated by Congress. Over the last few years, the level of the lake has consistently been unsafe and unusable. We have personally experienced accidents in our boat and often fear for our safety while boating under low conditions. One issue that should be addressed is the legality of charging for dock permits when docks remain unusable due to mismanagement of the lakes resources. In addition, the negative economic environment created by the mismanagement of the lake has crippled the surrounding area - particularly the mom and pop"" businesses that have been a staple in our economy. West Point Lake should not have to shoulder an unfair burden in the water operation plan.Another priority for our lake

---

0005

Comment ID: 0005
Author Name: Paul Sconyers
Organization:

To Whom It May Concern:
First of all thank you for the opportunity to provide our comments on lake West Point and more importantly the bigger issue of water management in Georgia which is a vital issue for all of Georgia residents.
Myself and my family are strong proponents of our environment and its resources. We have been residents in Georgia since 1982 and have visited and enjoyed many of Georgia's State Parks and lakes. We are currently both retired and love being on the water we spend more than half of our time on the lake enjoying not only the boating aspects but, the beauty, serenity and natural wildlife the lake attracts. Our kids and all their friends learned to swim, water ski and generally appreciate all the wonderful things lake West Point has to offer. We feel these opportunities will make them better stewards of our environment and learn the importance what our natural resources means to current and future generations.

During our twenty some years of visiting the lake we have seen the application of the current USACE's water management policies, with fluctuating water levels. This comment is not meant as a critisim but, merely an observation. While we understand the concept of endangered species (mussels, sturgeon etc.) and the need for higher down stream water levels to float coal barges. We also understand what the adverse economic impact means to the people and areas surrounding lake westpoint as was documented in the recent economic study.
We currently have a second home on lake West Point that we were considering for our retirement home, however, with all the issues surrounding the recent water Wars and seemingly inconsistent fluctuating water levels, we are somewhat hesitant to commit ourselves. In truth, we are presently concerned with any USACE controlled lake where we can't count on what is going to happen with the lake. Consistent Water levels are as important as any aspect of a lake. They offer the positive intrinsic value that has no price.
Thank you for listening.
Paul/Jeannette Sconyers

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

0006

December 8, 2008

Mr. Roger Burke
Branch Manager
Tetra Tech, Inc.
107 St. Francis Street, Suite 1403
Mobile, AL 36602-9986

Subject: Review of the Public Notice and the Notice of Intent (NOI) for the Water Control Manual Update and Environmental Impact Statement, Apalachicola-Chattahoochee-Flint River Basin

Dear Mr. Burke:

Consistent with Section 102(2)(c) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the Public Notice and the Notice of Intent (NOI) for the Proposed Water Control Manual (WCM) Update and Environmental Impact Statement (EIS) for the Apalachicola-Chattahoochee-Flint (ACF) River Basin, located in the states of Alabama, Georgia, and Florida. EPA Region 4 NEPA staff members also attended two of the Public Scoping meetings, held on October 22, 2008 (Lagrange, GA) and on October 23, 2008 (Marietta, GA) and sponsored by the U.S. Army Corps of Engineers, Mobile District. Our EPA Region 4 NEPA staff members gathered information on the ACF River Basin, and were able to meet with Mobile District project experts and contracted specialists who were present at each of the Public Scoping Meetings to answer questions about the ACF Water Control Manual Update and to provide an overview of the Corps' NEPA process.

It is our understanding that an ACF Water Control Manual Update and Environmental Impact Statement (EIS) are to be developed by the Mobile District. We further understand that some water management operations described in the current basin-wide ACF Water Control Manual may be modified. Any operational changes in the various federally managed reservoirs will reportedly be fully described in each updated reservoir-specific Water Control Manual, and then included within the overall ACF Master Water Control Manual.

EPA understands that the updated ACF Water Control Manual will outline the regulation schedules for each project, as well as specifications for storage and releases from each reservoir. The updated ACF Water Control Manual will also provide documentation including revised Water Control Plans for each of the specific projects

and river basin systems within the ACF. The updated ACF Water Control Manual will further include guidelines for making water management decisions, and will "outline policies and data protocols for flood control operations and drought contingency operations." Mobile District reports that the updated ACF Water Control Manual is needed "to enable managers to strike the best balance possible for the many multi-purposes and demands…and a complex set of factors is needed to determine appropriate water management at each lake."

0006

EPA understands that the updated ACF Water Control Manual will identify all constraints, including but not limited to: authorized project purposes, power contract commitments, hydrologic and climatologic factors, downstream lake and basin wide conditions, potential threats of flood and drought, and will include the resultant lake levels that are required to satisfy all of these various requirements. Because of the complexity of the updated ACF Water Control Manual, we understand that during the scoping process, Mobile District "will be collecting input from a broad range of stakeholders throughout the region."

EPA Region 4 supports the inclusion of the following issues in the ACF Manual Update:

- A section on current project operations, as well as an historical review of how these have been refined over the years.
- A summary of operational changes necessitated by drought contingency requirements and the new data that supports such changes.
- A section with updated data reflecting current basin conditions.
- A section with proposed new environmental requirements for meeting water quality standards, and a section on how compliance with all endangered species laws and fish spawning needs will be accomplished.
- A section on procedures to be used for capturing and using real-time data provided by additional gages. This should include information on the proposed new gaging stations, and a discussion of why these sites were selected.
- A section with the results of the most recent computerized modeling used to evaluate project operations.
- A section on the proposed improved streamlining of data exchange between agencies, in particular with the EPA Region 4 Water Protection Division.

EPA Region 4's NEPA Program Office recommends that the Mobile District address and fully document the following issues in the EIS for the updated ACF Water Control Manual. Adverse impacts from any proposed action should be avoided, minimized, and/or mitigated.

- The Mobile District should address and fully document the effects from any proposed action(s) (e.g., revisions to various lake levels, discharge changes in average daily flows, etc.) on any threatened or endangered species.
- The Mobile District should address and fully document the effects of the proposed action(s) on cultural resources.

- The Mobile District should address and fully document the effects of the proposed action(s) on air quality.

0006

- The Mobile District should address and fully document that the effects of the proposed action(s) complies with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations & Low-Income Populations.
- The Mobile District should address and fully document the effects of the proposed action(s) on wetlands.
- The Mobile District should fully document that no unacceptable adverse cumulative or secondary impacts will result from the implementation of the proposed action(s).
- The Mobile District should address and fully document the effects of the proposed action(s) on water quality. Effects on Total Maximum Daily Load (TMDL) implementation (in reaches where TMDLs have been approved) and impaired waters should be fully addressed. EPA recommends that the updated ACF Water Control Manual include information on the impairment status (303d List and 305b report) and TMDLs of all ACF system waterbodies.
- EPA has concerns with the consequences of any major changes to conservation storage at three important lakes in the ACF system. It is our understanding that (when full) the values are currently: 62.5% - Lake Lanier (with only 6% of the drainage area above Chattahoochee Gage); 17.6% - West Point; and, 14% - W. F. George.
- EPA recommends that the Best Management Practices (BMPs) that will be implemented to control sediment runoff and manage stormwater around the ACF system lakes should also be made part of the ACF Water Control Manual.

EPA Region 4's Water Protection Division offers the following scoping comments on the proposed WCM Update and the EIS:

- EPA encourages the inclusion in the EIS of a discussion that connects management plans to reallocation of water storage. Of special interest are the effects of management plan changes on discharge rates (including velocities) and river elevations (including volume).
- The EIS should include a discussion on secondary effects (actions that happen later in time) on major water chemical, physical, and biological characteristics. The discussion on the chemical characteristics could relate both the water velocity and volumes to, at least, temperature, dissolved oxygen, and conductivity. Detailed discussions on major physical characteristics could include frequency of riparian habitat inundation, and distribution or re-distribution of sediment particles based on sediment particles and flow energy (size/load related to velocity), and maintenance of benthic habitat.
- The EIS should include a discussion on major biological characteristics to include potential alterations to fluvial aquatic species (species that require flow in their habitat for cover, food, reproduction strategies, and, or rearing of young). The evaluation of the various alternatives should describe their impact on sustainability of the aquatic environment and related human benefits.

- EPA also encourages a specific discussion related to any ACF adaptive management plans (AMPs). EPA suggests that AMPs should address uncertainty associated with instream flow prescriptions, such as the drought situations where minimum flow releases become the norm rather than the 7Q10 frequency interval. It is suggested that any AMP include conservation and resource-protective flow standards based upon available information; identify monitoring programs to include the use of flow related sensitive endpoints; and identify an effective procedure that would allow for revision based on new information.
- The current Georgia Environmental Protection Division (EPD) request for flow reductions in the Chattahoochee River relies upon a series of predictive models that make statements about flows and how changes in these can be expected to affect water quality measures. EPD proposes monitoring of several identified flow related sensitive endpoints, and identifies a procedure of notification when certain conditions exist that would require flow change based upon new information. EPA suggests that employing this same type of concept in other areas would greatly enhance the ecological sustainability of the aquatic systems affected by construction, maintenance and operation of federal projects with the ACF watershed basin.

We appreciate the opportunity to provide these scoping comments on the Proposed Water Control Manual Update and Environmental Impact Statement for the Apalachicola-Chattahoochee-Flint (ACF) River Basin. Should you have questions, feel free to coordinate with Ntale Kajumba of my NEPA staff at 404/562-9620 or at kajumba.ntale@epa.gov or Paul Gagliano, P.E., at 404/562-9373 or at gagliano.paul@epa.gov. Duncan Powell of Region 4's Water Protection Division can be reached at 404/562-9258 or at powell.duncan@epa.gov.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Gibbs
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Atlanta's Most Award Winning
Landscape Company

To whom it may concern:

We all know that water is our most important resource. Without it's presence we can not survive. Therefore protecting it's availability should be our top priority. By managing our resovior operations properly this goal can be achieved without punishing industries that rely on water to remain in operation. The landscape industry is a 8 billion dollar source of income for the Georgia market. This is critical for our economy under it's current state. If we continue to lose jobs to the water crisis and lose even more jobs in this economic crunch our livelyhood in the landscape profession will be lost. This is unacceptable and must not be allowed to happen. Please consider all sources of action to help alleviate our problems.

Thank you,
Greg Whitfield

Quality and Service is Our Legacy
4055 Atlanta Road Smyrna, Georgia 30080-5939
770-432-7761 Fax: 770-432-9809

0008

Comment ID: 0008
Author Name: Tiffany Stone
Organization: Lake Lanier Resident

I would like to see the following points added to the new Water Control Manual:

-During the rainy season, the Corps should allow Lake Lanier to reach full pool no later than June 1;
-Lake Lanier should not be drawn down for mussels and other endangered species in the Apalachicola River;
-Management triggers must be in place for Lake Lanier withdrawals during times of drought;
-Raise Lake Lanier's full pool from 1071 ft above sea level to 1073 ft, thereby adding an additional 26 billion gallons of water to the lake.

This Lake is precious to the state of GA for many reasons. Preservation of this lake is imperative and ways to conserve water in Lake Lanier must be updated in this new manual.

0009

Comment ID: 0009
Author Name: Charles and Judy Salter
Organization: Chestatee Homeowners

It is a known fact that Lake Lanier is below appropriate level of water thereby limiting the lake's recreational use. Too much water has been allowed to flow downstream. Lake Lanier has been adversely affected by the drought and excessive outflow of lake water. Please help our water level not get any lower by whatever means available to you.

0010

US Army Corps of Engineers®
Mobile District

ACF Water Control Manual Update

RELEVANT READY RESPONSIVE RELIABLE

Proudly serving the Armed Forces and the Nation now and in the future.

Name: BILL SPOHRER Address: 127 AVENUE B

City: APALACHICOLA State: FL Zip: 32320 Email: b.spohrer@yahoo.com

***Primarily* Participating as a…**

- ☒ *Local Resident*
- ○ *Elected Official*
- ○ *Industry/Commercial*
- ○ *Native American Tribe*
- ○ *Nongovernmental Organization*
- ○ *Academic Institution*
- ○ *Local Gov't Agency*
- ○ *State Gov't Agency*
- ○ *Federal Gov't Agency*
- ○ *Other* _____

Please Check a Comment Area:

- ○ *ACF Basin*
- ○ *Blackshear Dam and Lake*
- ○ *Flint River Dam and Lake*

Water Control Manual Update

- ○ *Lake Sidney Lanier/Buford Dam*
- ○ *Morgan Falls Dam*
- ○ *West Point Lake and Dam*
- ○ *Goat Rock Dam*
- ○ *Oliver Dam*
- ○ *North Highlands Dam*
- ○ *Bartlett's Ferry Dam & Harding Lake*
- ○ *Walter F. George Lake & Dam*
- ○ *George W. Andrews Lake & Dam*
- ○ *Lake Seminole/Jim Woodruff Dam*

Environmental Resources

- ○ *Biological Resources*
- ○ *Air Quality*
- ○ *Cultural Resources*

Water Management for Multiple Federal Project Purposes

- ○ *Action Zones*
- ○ *Drought Operations Management*
- ○ *Hydropower*
- ○ *Navigation*
- ○ *Recreation*
- ○ *Flood Damage Reduction*
- ○ *Water Quality*
- ○ *Water Supply*

NEPA Process

- ○ *Alternatives*
- ○ *Baseline*
- ○ *Impacts Analysis*
- ○ *Public Involvement*

- ○ ***Shoreline Management***
- ○ ***Revised Interim Operations Plan***
- ○ ***Socioeconomics***
- ○ ***Recommended Modeling Tools and Data Source***
- ○ ***Other*** _____

Comments

www.acf-wcm.com

Scoping comments will be collected by Tetra Tech for the U.S. Army Corps of Engineers, Mobile District through ***November 21, 2008.***

0011

Gmail by Google BETA

Vern Herr <vherr@acf-wcm.com>

Chattahoochee-Flint River Basin WCM

1 message

Patti Montijo <montijo@alltel.net> **Sat, Nov 8, 2008 at 8:04 AM**
To: Comments@acf-wcm.com

Photo taken from our dock on 10/28/07, Thompson Creek Area

Please consider changing the goal for full pool to Memorial Day.
Specific Regulation for drought conditions with a realistic trigger.
Raising full pool to something higher than 1071.
Consider how the mussels and other endangered species survived before Lake Lanier was made and whether or not they can, indeed survive without human intervention.

Tom & Patti Montijo
146 Payton Duncan Drive
Dawsonville, GA 30534

IMG_0317.jpg
31K

WEST POINT LAKE

In 1996 I retired and moved to the West Point Lake area. The primary reason was that one of the major objectives was recreation. This objective does not seem to be recognized by the Corp of Engineers.

I spent quite a bit of my retirement money as I planned to spend the rest of my life here.
I built a dock, then had to extend it for lack of water to no avail. The Corp kept dropping the lake.
Most of the time I am unable to get my boat to the dock and on to the lift. This year being an exception.
I also bought a houseboat but am afraid to use it as the up and down of the water levels fills the lake with trash.

Lets' look at the inability to monitor Lake Lanier. The Corp couldn't tell that the lake dropped two feet because of a bad gauge. No back-up gauge? How about using the gauge God gave us in the form of eyeballs. Everyone I know can tell if the lake drops two feet. This drop of course indicated to the Corp that water had to be taken from West Point Lake to fulfill the obligation of downstream water flow. Or how about the floods we have had, the cause stated by the Corp was the lack of gauges south of Atlanta on the river. Who designed the system?

With a consistently full lake the increased revenue helps build the infrastructure in the area. Why keep trying to destroy it?

So much for the Corp adhering to the stated objectives. It appears the some of the Mobile District Commanders think they are God and try to show everyone that they can do anything they please. All this does is place the local Corp in a position of defending some ridiculous policies.

Now I have to look for a lake that is not Corp controlled to enjoy my retirement.

Donald L. Baker
6234 CR 266
Five Points, AL 36855

realkiller@mindspring.com
Home: 334/982-9753
Cell: 706/302-0505

FRANKLIN COUNTY

REPLY TO ❒
BOARD OF COUNTY COMMISSIONERS
33 MARKET STREET, SUITE 203
APALACHICOLA, FL 32320
(850) 653-8861, EXT. 100
FAX (850) 653-4795

REPLY TO ❒
PLANNING & BUILDING DEPT.
34 FORBES STREET, SUITE 1
APALACHICOLA, FL 32320
(850) 653-9783
FAX (850) 653-9799

October 17, 2008

Col. Byron Jorns, District Commander
USACOE-Mobile
P.O. Box 2288
Mobile, AL 36628-0001

Dear Col. Jorns:

The Apalachicola River runs through the heart of Franklin County, Florida and empties into the Apalachicola Bay. The ecosystem and resources that are harvested in the lower reaches of the River and the Bay are the base of the county's economy, and have been for the last 100 years. The Franklin County Board of County Commissioners represents the residents of Franklin County. The Board, in representing its constituents, has an inherent interest in the welfare of the lower River and Bay. The Board believes that the Water Control Manual (WCM) for the ACF system is fundamentally flawed because it does not adequately take into account the freshwater needs of the Bay. Without adequate freshwater the ecosystem, and our economy, will collapse.

The Board hereby requests that the revised Environmental Impact Statement (EIS) that is being developed as part of the update of the WCM be required to include the ecosystem of the Apalachicola Bay. Specifically, the EIS should take into account those harvestable resources (shrimp, blue crab, mullet) that have seen their landings plummet over the last few years because of the lack of freshwater reaching the Bay.

And as importantly, the oyster, more than any other resource in the Bay needs to be protected from the loss of freshwater. The oyster is valuable to the ecosystem in two ways. It is a filter feeder, and oyster beds sift large volumes of water every day which help maintain water quality of the Bay. Additionally, oyster beds, and their associated spat, are critical parts of the food chain in the Bay. Large sections of the Bay no longer produce oysters because they are not receiving enough freshwater to survive, much less grow and produce spat. The Board hereby requests the freshwater needs of the oyster also be included in the EIS.

The Apalachicola Bay is the last truly economically productive Bay in the state of Florida. Unfortunately, it is now one of a kind in a state that once had dozens of productive bays. It is a valuable resource the state has spent millions of dollars protecting and the Board believes the current WCM does not adequately address its freshwater

RUSSELL CROFTON, District One
CHERYL SANDERS, District Two
NOAH LOCKLEY, Jr., District Three, Chairman
JOSEPH PARRISH, District Four, Vice Chairman
BEVIN PUTNAL, District Five

needs. Please expand the WCM to protect the single most important environmental element in the entire ACF system, the Apalachicola Bay.

If you have any additional questions, please contact Mr. Alan Pierce, Director of Administrative Services for the Board, at 850-653-9783, ext. 161.

Sincerely,

Noah Lockley Jr.

Noah Lockley, Jr. Chairman
Franklin County Commission

Cc: Franklin County Commission

Nov 10, 2008

Dear Corps Re. Lake Lanier

I have owned a home & lived on Lake Lanier since 1980 nearly 30 years. over that time the Corps has earned my respect. Some rules seem unimportant but over the long have been contributed to the beauty of the lake and the surrounding area.

my respect for the however has been tarnished as a result of the lack of leadership it could have provided. yes a drought has been the major Factor, but a full river South & the releases & minimalies have been a Direct Result of your responsibilities you have demonstrated a lack of Respect for your biggest & best stakeholders. why?

a combination of these things have had a dramatic affect on these stakeholders not only now but for years to come & for some forever. How can you assist those who have closed their business - lost their homes. what do we tell them.

It may be easier making these decisions

from Mobile.

I would like to suggest that a new agenda of Priorities - where there flexibility is developed & communicated to all Lake stakeholders. you hold much of our future in your hands be a leader a benevolent leader. Thoughtful & Conciliate.

Some Priorities

- adopt a full Pool level of 1073
- mussels more important than people?
  I don't think so. makes everyone look ridiculous
- Full Pool by June 1st.
- Standards or Trigger Points for drought conditions
- Establish a Lanier Crisis team of corps employees that are clearly available to stakeholders.

Respectfully submitted by a Homeowner & supporter.

Al Pope
8675 Fields Lane
Gainesville GA. 30506

US Army Corps of Engineers®
Mobile District

Name: Chris Smith Address: 2845 Imperial Dr.
City: Cumming State: GA Zip: 30041 Email: BannerRama@aol.com

Primarily Participating as a...
- o Local Resident
- o Elected Official
- ☒ Industry/Commercial
- o Native American Tribe
- o Nongovernmental Organization
- o Academic Institution
- o Local Gov't Agency
- o State Gov't Agency
- o Federal Gov't Agency
- o Other _____

Please Check a Comment Area:
- o ACF Basin
- o Blackshear Dam and Lake
- o Flint River Dam and Lake

Water Control Manual Update
- ☒ Lake Sidney Lanier/Buford Dam
- o Morgan Falls Dam
- o West Point Lake and Dam
- o Goat Rock Dam
- o Oliver Dam
- o North Highlands Dam
- o Bartlett's Ferry Dam & Harding Lake
- o Walter F. George Lake & Dam
- o George W. Andrews Lake & Dam
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- o Action Zones
- o Drought Operations Management
- o Hydropower
- o Navigation
- o Recreation
- o Flood Damage Reduction
- o Water Quality
- o Water Supply

NEPA Process
- o Alternatives
- o Baseline
- o Impacts Analysis
- o Public Involvement

- o **Shoreline Management**
- o **Revised Interim Operations Plan**
- o **Socioeconomics**
- o **Recommended Modeling Tools and Data Source**
- o **Other**_____

Comments

The low water level has caused a great lack of interest in Boating, which has caused GREAT distress for Many Livelyhoods. A lot of people depended on the boating industry To Survive.

www.acf-wcm.com
Scoping comments will be collected by Tetra Tech for the U.S. Army Corps of Engineers, Mobile District through **November 21, 2008.**

0016

3195 Lotheridge Rd.
Gainesville, GA 30501
November 10, 2008

Army Corps of Engineers, Mobile District
107 St. Francis St., Suite 1403
Mobile, Alabama 36602-9986

Dear Corps:

I live on Lake Lanier which, as you know, is now about 18' below normal pool. I am concerned about the health of our lake, to say nothing of the decreased recreational activities and resultant economic benefit it usually provides to our community. I request that you include the following in the new operating guidelines you are now preparing.

First, please allow the lake to reach full pool during the rainy season and no later than June 1 each year. The lake should not be drawn down in order to save mussels in the Apalachicola River. The river flow would be too low to save these creatures if there had not been a lake constructed in the first place.

Also, management parameters should be in place to limit lake withdrawals during times of drought. And finally, please raise the full pool from 1071' to 1073' above sea level.

You accidentally released 26 billion gallons from the lake in April 2007 due to a faulty gage, when all of us who live on the lake knew the level was incorrect. You owe us special consideration, since the lake has never recovered from this error.

Thank you for your attention to this matter.

Sincerely,

W. D. R

William D. Rezak

0017

ATHENS BOAT CLUB
Lake Lanier

November 10, 2008

U. S. Army Corps of Engineers, Mobile District
107 Saint Frances Street, Suite1403
Mobile, AL 36602-9986

Gentlemen:

On behalf of the Board of Governors and the members of the Athens Boat Club, we respectfully request that you consider the following in your determination of Lake Lanier's water situation.

1. During the rainy season, the Corps should allow Lake Lanier to reach full pool no later than June 1.
2. We strongly feel that Lake Lanier should not be drawn down for mussels and other endangered species in the Apalachicola River. This was not in the original policy.
3. Better management triggers should be in place for Lake Lanier withdrawals during times of drought.
4. Raise Lake Lanier's full pool from 1071 ft. thereby adding an additional 26 billion gallons of water to the lake.
5. This request should be seriously considered now, not later.

Thank you in advance for your serious consideration of the above request and suggestions.

Sincerely,

For the Board of Governors

Marguerite Daniel

Marguerite Daniel
Secretary-Treasurer

ATHENS BOAT CLUB, INC.
207 Dogwood Drive • Dawsonville, GA 30534
706.216.2256 • Fax 706-216-0130 • e-mail abc@alltel.net

MEMO

DATE: 10/29/08

FROM: Jack Bernzott
3674 Maple Forge Ln.
Gainesville, GA 30504
PHONE: 770 534-3667
EMAIL: granzott@bellsouth.net

TO: Terra Tech, Inc
107 Saint Francis Street
Ste 1403
Mobile, AL 36602-9986

I regret that I couldn't see you at the Georgia Mountain Center in Gainesville, GA today. I realize that the Corp of Engineers is updating the water control manuals for the ACF basin. I am not going to bore you with a lot of statistics you already have. But please consider that those of us in North Georgia have been on water rationing for the better part of three years. I have watched my landscape wither and die, but you have probably also heard this.

I'd like to inject some common sense concerning the need of endangered species. Certainly these species have survived long before the reservoir system was in place to guarantee a constant flow. Droughts and floods were probably part of their environment. The same goes for the oyster beds, and they too survived. So I can't see that this should be a factor for consideration.

Legitimate downstream needs have to be addressed, but only after a water rationing program is in place. The downstream mind set that others must guarantee their economies is valid only after they help themselves. The Chattahoochee water shed is very limited, and it will be years before Lanier can meet today's flows. In the meantime the local economy is taking enough of a hit.

Thank your consideration.

Jack

Georgia Outdoors Inc.
Landscape Professionals

"We Walk That Extra Mile"

To everyone concerned,

I am a landscape business owner and a property owner on Lake Lanier; therefore I am being hit as hard as any by the drought and poor resource management by the corps of engineers. I have seen many form letters from professional associations that I am a member, and asked to send in copies to the local officials and our state representatives. I can only address some of the problems from my view, but they affect everyone not just landscape business owners, and lake property owners.

1. Economic Impact.
   A. Business
   First off, if I understand it correctly, there are clauses in the endangered species act that give relieve for humans and negative economic impact. As a landscape business owner, my first priority is to be able to earn a living in the profession I have been in for most of twenty five years. I have been on the phone with customers for several days, and the unfair restrictions on our industry are going to certainly cause some of my fellow business owners to have to go in to bankruptcy. We may survive or not, but it is causing an already struggling industry to take on more of the burden than any one else. As I drive by the car wash on Roswell road, I wonder why they don't at least have to operate on restricted hours. It seems that having fair outdoor water restrictions, possibly two days a week with the 30 day exemption, combined with restricting hours for other water related industry would create the same savings with out putting the entire burden on one industry. The loss of revenue over the summer was bad, this fall is worse; the spring is going to be devastating if the total ban is continued. There are many reasons. If the corps of engineers considers types of industry as oysters and power plants, why are we not considered? What makes their livelihood more important than ours? We need representation by our elected officials now!

   B. Property
   As I mentioned I live on Lake Lanier, and my parents do as well. It would be safe to say that a large part of mine and my parent's net worth is in our homes. I don't think that is unusual. In fact, all of my net worth would be in my home and business, which both or being threatened by the irresponsible operations by the corp. of engineers. How about county property taxes, mine go up every year, and I am sure that a large amount of tax in counties that border lake Lanier are from lake property owners. If the water management problems and lake levels or not corrected, the values of property will continue to fall drastically, no one will look at it as a good investment any more, and no one will want to live on a lake with these major and drastic fluctuations. The counties will have to re evaluate property and loose millions in annual revenue. That doesn't include the loss in net worth to people like my parents and my self. I am sure their will be many people that will find their selves with property that they owe more on than is worth. We know all the affects that has on the economy through out the state not just us.

   C. Lake Lanier driven economy
   I have touched on the property value issue which will have major impacts on everything from county tax revenue to the real estate market, but that is just the tip of it. How about all the other people that our employed by business that support the lake community and support the recreation it provides. It is not about a place to swim or ski, it is about people earning a living. It is about every Business in north Georgia that needs water, including the green industry as I mentioned above. The figure of 5.5 billion is major and probably

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low when everything is considered. I heard Governor Barnes once call Lake Lanier the largest economic engine in north Georgia; I would have to think that this would be more than a sufficient amount of economic impact and crisis to humans to suspend the endangered species act or to use the clauses that protect us.

These are just a few of the economic impact issues, certainly it goes much deeper and hurts many more than I can mention. Any one with any sense at all understands that this irresponsible water management must end now! How many warnings do we need!

2. Environmental impact.
While the corp. seems so concerned with the down stream environment, why is there no concern for the environment up here? The following are just a few of the issues that I have notice, but don't seem to be addressed.

A. Dieing fish and mussels on Lake Lanier.
We have mussels dieing all over our lake, not to mention fish lying on dried up banks. Why is this not a consideration of the corps? Why does the environment up here take back seat to the river below?

B. Erosion.
As the lake goes down, the banks erode into what would be a lake bottom, and the result is less storage capacity. When water quantity is an issue, it seems that this impact is being ignored. When the water does come back, there will be less if the erosion continues. This doesn't even touch the fact that all uncovered soil every where is going to wash into creeks and tributaries. It has been said that the worse threat of pollution is from storm water run off and erosion. The total outdoor watering ban hurts the effort to control this, and will even increase the problem as areas of vegetation will die and next spring will become additional bare land. The state implemented sediment and erosion control measures, but has not done a good job enforcing them. I have attached pictures of an abandon construction site along Lake Lanier. It is been sending large amounts of silt into the lake for several years, and nothing has been done about it. I have sent pictures and letters to Forsyth County, and have even met with the county representative, still nothing has been done. Why is the environmental impact of low water levels in Lanier not considered? Why is Lake Lanier not considered as the rivers below us are?

3. Uses of Lake Lanier water
The use for Lake Lanier water should be limited to water supply and economic impact only. This covers recreation as well. The endangered species is the item that is noticed by the general public now, but there are other issues. Let's not forget that the corp. wasted billions of gallons in spring of 06' when they claim they had a faulty gauge. The lake should be managed as if a drought where imminent and release should only be for down stream minimum flow requirements only.

A. Endangered Species
As I already mentioned, this is ridiculous that they consider this a priority over the severe economic and environmental impact on our state. If there is a clause that protects humans, it should apply with Lake Lanier, and there should never be release for the sole purpose of endangered species down stream. The mussels on Lake Lanier have rights too.

B. Power generation.
I understand the corps has a contract with the power company to release additional water to meet peak power use in the summer. This should end immediately. When water goes out, sure run it through the generators, however there should not be release for this purpose only. Power can be supplied by other sources. If it results in

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extra power expense to consumers, it is much less than the negative impact of low water. If funds are needed to buy the contract out from the power companies, the Corp can use the lake, including dock permit holders, to generate the needed funds. Power generation should be eliminated immediately.

C. Navigation
This is probably the biggest waste of all. The river is too small for navigation, and flooding it, and dredging it for that purpose is a waste of water and federal money. This should never ever be a use for water again. I understand less than 10 barges even use it when the navigation widows are allowed. I feel for the few that earn a living by this, so they should be compensated as this practice is suspended. The needed funds would be more than off set by the money and water savings.

These are just a few of the items I know that are a waste. But the leaders of our state have got to stand up for our rights and common sense approach to managing the resource. The only valid use for Lake Lanier is water supply and economic impact to all states. Any thing else is a waste. The down stream states should always receive the water that Mother Nature would give them if there where no state of Georgia or lakes ever built, but Lanier should be able to hold and store all the rain water that falls above the lake. Why in the world should they be made drought proof at our expense? Florida has hundreds of miles of water shed to feed off of, and Lanier has those small rivers that flow out of the rocks just fifty or so miles north. Think about it!

There are many suggestions I could make about how to best manage the lake, but none of them would be knew. The long and short of it is that the lake levels should not drop in any single year more than what it can reasonably be expected to recover during the winter, in normal rain fall years. I think that is about 8 feet. It shouldn't matter if it is the city of Atlanta or Florida, the fact is the stake holders and property owners on Lake Lanier should not have to be the sacrificial goat for all of those down stream. As is this year, the down stream lakes refill and the river runs full just months after a drought is over, but the affects of low water levels on Lake Lanier take many years to recover. If it takes three years to recover, it will be about time for another drought. I will add that I know it has been proposed to raise the levels of Lanier by several feet, that would be great, that would help, but with out better management, it would just give the corps. more water to flush down stream. We have to have better and fair management practices for the lake.

If is not right for our business, home values, and quality of life should suffer and take back seat to those down stream. The size of the water shed area and the rate of recovery should be the main issue when determining the amount of water released every year. If the folks down stream have to do with less one year, so be it, they will be fine as soon as it rains, but when Lake Lanier is drained like it is now, we suffer for years to come!!! How is that fair? How is that even legal? How can you take from those who make the least and give to those have make the most? In away that is what is happening, Lake Lanier has the smallest water shed, but has the largest burden on it. Lets make one thing clear, just because the lake is deep in the channels, the creeks and coves dry up just like the ones in south Georgia, but the ones on Lanier stay dry, while those below enjoy full pool every spring. That is a joke and very unfair!

Please help, I am like so many others in north Georgia that are in a world of hurt because of all the other issues we are dealing with, it is just not right to ignore the negative impact of this poor management of Lake Lanier.

Thanks ~~for you~~ time reading my message,
Bill Thomas
Georgia Outdoors Inc. www.gaoutdoors.com
Citizen of Georgia

Spring 2005

Spring 2008

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Spring 2008

0019

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 20, 2008

Brian Zettle, Environment and Resources Branch
Planning and Environmental Division
U.S. Army Corps of Engineers, Mobile District
Post Office Box 2288
Mobile, AL 36628-0001

RE: Draft Environmental Impact Statement for Updated Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin

Dear Mr. Zettle:

The State of Florida ("Florida") submits these comments to the U.S. Army Corps of Engineers ("Corps") regarding its scoping process for the draft environmental impact statement ("EIS") to be prepared in connection with the update and revision of the water control manual for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin. However, submission of this letter is not intended in any way to endorse either the Corps' current process for revisions to the water control manuals for the ACF or the content of any such revisions.[1]

Although the time allotted for public comment was not addressed in the Corps' Federal Register notice announcing the scoping process, it is Florida's understanding that the Corps intends to close the public comment period on November 21, 2008, and complete a scoping report by December 31, 2008. As the Corps is aware, all the ongoing litigation between the Corps and the States of Florida, Alabama and Georgia, and various interested stakeholders concerning the Corps' operation of federal reservoirs in the ACF Basin has been consolidated in the United States District Court for the Middle District of Florida.[2] That court has announced its intention to render important, and possibly determinative, decisions within the next few months. The Corps must ensure that the judicial determinations in any such ruling are incorporated into this manual revision process.

[1] Specifically, Florida contends that the Corps' current process is inconsistent with federal laws and insufficient under both NEPA and the Water Resources Development Act ("WRDA").
[2] *See* In Re Tri-State Water Rights Litigation, 3:07-md-0001 (M.D. Fla.).

The Corps Must Use the Correct Environmental Baseline

Florida is particularly concerned that the Corps use the appropriate baseline for its analysis and that the revision be of the appropriate scope.[3] As the Corps' February 2008 Notice of Intent recognizes, the last master manual for the ACF River Basin dates to 1958. Yet, since 1989, the Corps has operated under a draft water control plan. The draft plan establishes, among other things, the "action zones" that drive the Corps' management of the ACF Basin reservoirs, and a minimum flow "requirement" of 5,000 cfs, which must be released to the Apalachicola River, both of which the Corps unilaterally adopted without compliance with the Flood Control Act, its own regulations at 33 C.F.R. § 222.5, NEPA or the Endangered Species Act ("ESA"). The 1989 draft plan also reflects some major operational changes that are unlawful in light of the D.C. Circuit Court of Appeals' decision in *Southeastern Federal Power Customers, Inc. v. Geren*. NEPA does not allow the Corps to "grandfather" as existing conditions changes in water control operations – particularly unauthorized changes – that have not been subjected to final NEPA review. Simply stated, because the Corps has not prepared a master manual update since 1958, the appropriate baseline for NEPA analysis is the 1958 master manual – *not the 1989 draft plan*. All changes in reservoir operations since that time, and all environmental impacts occurring since that time must be evaluated and analyzed under NEPA as part of the proposed action.

The Corps Must Provide a More Detailed Proposal

Florida has fundamental concerns with the procedural inadequacies of the Corps' scoping efforts and NEPA review in general. Effective scoping requires a more detailed proposal from the Corps. The scoping process is intended to identify significant issues presented by the Corps' proposal. In contrast, the Notice of Intent contains no detail about the proposal. This is contrary not only to NEPA, but also to the Corps' regulations, which require the Corps to "provide information to the public concerning proposed water control management decisions at least 30 days in advance of a public meeting." 33 C.F.R. § 222.5(g)(2)(i)(C).

The Corps Must Provide a Meaningful Opportunity To Obtain Informed Public Comments

The current NEPA scoping process is inadequate to satisfy the public participation requirements of WRDA, 33 U.S.C. § 2319, and the Corps' own implementing regulations, 33 C.F.R. § 222.5. WRDA requires effective public involvement,[4] coordination with affected states, regional and local agencies,[5] and provision of information to the public.[6]

[3] The appropriate baseline for NEPA analysis is the 1958 master manual prepared for the ACF, not the 1989 draft water control plan or current existing conditions. The NEPA process must evaluate all changes in the Corps' reservoir operations, and their environmental impacts, since 1958.
[4] *See* 33 U.S.C. § 2319; *see also* 33 C.F.R. § 222.5(g)(2)(i)(A).
[5] *See* 33 C.F.R. § 222.5(f)(9).

The Corps' regulations require that the water control plan "be developed in concert with all basin interests which are or could be impacted by or have an influence on project regulation." It requires coordination with state, regional and local agencies in the development of the manual. In this case, the Corps must prepare a new master manual that includes the water control plans for the various facilities and the reservoir regulation schedules that dictate operations. The master manual must clearly describe not only the relative priorities of each of the ACF reservoirs, but also how those priorities and additional uses and demands will be accommodated.

One of the most important elements of the new manual must be a Drought Contingency Plan that includes a logical sequence for identifying when drought contingency actions must be initiated and describes the nature and justification of those actions.

The scoping meetings have been conducted by setting up informational "booths" which do not allow for meaningful participation, or even the ability to obtain answers to direct questions. This process does not provide a sufficient opportunity for interested persons to obtain needed information and for the Corps to receive informed public comment.

Indeed, the current process does not even meet the general guidelines for scoping under NEPA. Despite requests from interested stakeholders, including Florida,[7] the Corps has failed to provide fundamental information that is critical to the scoping process.[8] It has issued Notices of Intent[9] and initiated public scoping meetings without providing a clear statement of the purpose and need of the proposed action. In addition, the Corps has failed to describe the extent of the proposed revision or provide any discussion of associated impacts or alternative plans. The unavailability of such critical information precludes members of the public, affected states, and other stakeholders from providing the input essential to a meaningful (and lawful) scoping process.

Effective Scoping Requires a Revised Scope of the "Proposed Action"

To date, the Corps' actions have focused on just two elements of operation at the upstream reservoirs: 1) minimum flow from Woodruff Dam, and 2) maximum fall rate in the Apalachicola River. The NEPA process must evaluate *all* the various Corps operations

[6] *See* 33 U.S.C. § 2319; *see also* 33 C.F.R. § 222.5(g)(2)(i)(C) (requiring the Corps to provide certain information to the public concerning proposed water control management decisions, including description of impacts and comparisons of alternative plans, at least 30 days in advance of a public meeting).

[7] Both verbally and in writing, Florida has asked the Corps for more information concerning the scope of the manual revisions. *See* Letter from Secretary Sole to C. Couch, T. Glenn & General Schroedel, dated August 29, 2008.

[8] *See* Council on Environmental Quality, *Memorandum for General Counsels, NEPA Liaisons and Participants in Scoping* at 4 (1981) ("Scoping cannot be useful until the agency knows enough about the proposed action . . . to present a coherent proposal and a suggested initial list of environmental issues and alternatives.").

[9] *See* 73 Fed. Reg. 9,780 (2008); 73 Fed. Reg. 54, 391 (2008).

throughout the ACF reservoir system that result in the flows observed below Jim Woodruff Dam. As reflected in the Corps' regulations, the master manual must clearly describe all these decisions, particularly in the water control plans and their reservoir regulation schedules, so that all parties can easily understand the Corps' proposed action and that action can be reasonably evaluated under NEPA.

Alternatives to be Considered

NEPA requires the Corps to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E). The evaluation of alternatives is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. The Corps should include the following alternatives in the Environmental Impact Statement.

A. An Alternative Based on True Basin Inflow

As shown on Figure 4.2.1.A of the 2008 Biological Opinion ("BiOp") (page 155), total upstream consumption depleted over 45 percent of the calculated unimpaired flow of the Apalachicola River in June 2000. The Corps historically has varied minimum discharges from Woodruff Dam based on available "Basin Inflow," which is calculated *after* upstream water withdrawals (including those the D.C. Circuit has determined to be unauthorized) have occurred. As long as Basin Inflow is calculated *after* Georgia consumes its desired amount, no incentive will exist for Georgia to decrease its consumptive uses, and the Corps will be left to manage an ever-shrinking resource. Because of the overall importance of Basin Inflow to the Corps' operational decision-making, the Corps must examine an alternative that is based on true Basin Inflow that "adds back in" upstream consumption to the equation.

B. An Alternative that Uses the Entire Conservation Pool in Lake Lanier

Historically, the Corps has operated Lake Lanier as if the conservation pool exists only between elevation 1,053 and 1,070. In this way, the Corps has effectively eliminated a significant block of storage that can be used to augment downstream water supplies necessary to comply with the ESA, among other laws. The EIS should affirmatively acknowledge that the entire conservation pool (from elevation 1,035 – 1,071) at Lake Lanier is available to meet hydropower and other downstream demands.

C. Strong Conservation Alternative

The Corps should examine a strong conservation-based alternative. Water conservation is a major component of all water control plans. Georgia recently reported a 24 percent reduction in consumption during the month of August 2008 compared to the same month in 2007. Georgia clearly has the means to conserve much more aggressively than it has historically, and the Corps should evaluate an alternative that includes mandatory conservation at comparable levels.

D. A Recovery-Based Alternative

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the Act by conducting conservation programs for the benefit of endangered and threatened species. The U.S. Fish and Wildlife Service has developed recovery plans for the Gulf sturgeon and affected mussel species pursuant to Section 4(f) of the ESA. The Corps should evaluate an alternative that maximizes the likelihood these species will recover to the point of de-listing by implementing recommendations in the recovery plans. Benefits resulting from implementation of these plans will have widespread benefits throughout the Apalachicola River Basin.

Impacts to Be Analyzed

An EIS must include a discussion of "the environmental impacts of the alternatives including the proposed action, [and] any adverse environmental effects which cannot be avoided should the proposal be implemented." 40 C.F.R. § 1502.16. The relevant impacts include direct, indirect and cumulative impacts. The Corps should evaluate the following at a minimum:

A. Effects on Apalachicola Bay salinity and nutrient composition, and corresponding economic impact on the Apalachicola Bay region and Franklin County's long-established seafood industry.

B. Effects on Apalachicola River floodplain habitats.

C. Effects on the Apalachicola River's channel morphology due to altered flows and changes in operation, including bank-erosion.

D. All relevant cumulative impacts, including depletions from irrigation pumping in the Flint River Basin and growth in the Metro Atlanta region; construction of new federal and non-federal reservoirs; and possible extended droughts due to long-term climate change.

Potential Mitigation Measures to be Explored

NEPA requires the Corps to evaluate "means to mitigate adverse environmental impacts." 40 C.F.R. § 1502.16(h). These include measures within the Corps' jurisdiction and outside the Corps' jurisdiction, as may be implemented by State and private parties. As applied here, key mitigation elements must include conservation and water transfers.

The extent of Georgia's commitment to reducing consumption in the upper portions of the Chattahoochee and Flint River basins will directly affect the amount of inflow to the Corps' projects and the volume of water in the ACF reservoir system. In assessing potential mitigation of adverse environmental impacts, the largest, least expensive and most environmentally sound source of water to meet future water needs is the water currently being wasted.

Compliance with Coastal Zone Management Act

Additionally, the Apalachicola River and Bay are protected by the enforceable policies of the federally approved Florida Coastal Management Program ("FCMP"). Corps actions which affect the Apalachicola River and Bay must be consistent to the maximum extent practicable with the FCMP. The Coastal Zone Management Act further obligates the Corps to provide Florida with a consistency determination before undertaking activities affecting Florida's coastal resources, including the implementation of the new master manual. *See* 16 U.S.C. § 1456(c)(1)(C).

In summary, as discussed above, Florida has significant and wide-ranging concerns with the Corps' scoping process. Nonetheless, Florida will continue to participate in the process with the intent of ensuring that the Corps will adequately address the elements required under NEPA.

Sincerely,

Janet G. Llewellyn

Janet G. Llewellyn
Director
Division of Water Resource Management

JGL:yz

0021

Comment ID: 0021
Author Name: Bill Bierbower
Organization: Fishmaster, Inc

I has been a tragedy for the Lake Lanier to stay at historically low levels while other lakes have enjoyed full pool levels. As a homeowner on Lake Lanier it has destroyed property levels as well as docks and other personal property. As a business owner in the marine industry it has been a double hit to our family financially.

With the growth of Atlanta's population as well as continued / increasing demands from Florida and Alabama it seems obvious to me we need another reservoir to support the water demand that is currently expected only from Lake Lanier.

0022

22 October 2008

Dear Sir,

My wife and I have lived on West Point Lake since May 2001. We moved here from Atlanta and built our retirement home. We love the environment and beauty around our lake.
The attached pictures of our and one of our neighbor's docks show the best and worst of conditions on the lake. The picture taken September 24, 2007 shows the shoreline effects when the lake was down about 16 feet from full pool. My dock along with two others in our cove was the only one out of about twenty that was still in the water. The picture taken October 2, 2008, one year later, shows the same scene at full pool. WHAT a difference!
Even though we were able to use our boat last year, I was reluctant because of the dangers created by stumps and other objects near the surface that are not normally there. This is a Federal reservoir and the primary function of the federal government is the safety of its citizens.
Again comparing the two pictures, it is obvious the monetary value as well as the personal enjoyment of our homes and the lake is very negatively impacted by low water levels.
We are very appreciative of the efforts the Corp is making to maintain our lake at full pool. It is wonderful to walk down to our dock and not have to look at a red ring around the shoreline.

Sincerely,

Sam & Joyce Hancock
108 Dogwood Pointe
LaGrange, Ga. 30240

706-812-0201

0022

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Lakeside Fitness& Therapy LLC

Rev. Mr. Tom & Chris Hunkele
84 North Shore Drive
LaGrange, Georgia 30240

Cell: 706 594-6632

October 22nd, 2008

US Army Corps of Engineers
Mobile District

Re: West Point Lake Advisory Council Support.

Both Chris and I want to express our concerns related to West Point Lake - - we are privileged to live on the lake in Creek Ridge. We moved to LaGrange in May of 2003- it was our dream to live on the lake, enjoy its beauty and recreation.

The current status of our lake is breathtaking - - it is a "gift" to those of us fortunate enough to "live on" the lake, for those who enjoy its recreation, for the low-income and minority families who draw both entertainment and sustenance from the lake and the varied business that rely on the draw of West Point Lakes beauty and recreation opportunities.

By copy of this letter – both of us designate the West Point Lake Advisory Council to represent our views on the serious issues facing West Point Lake. We are requesting that changes to the Corps control and operation of West Point Lake include:

- Maintaining a minimum lake level of between 633and 635 MSL
- Maximize positive economic impact
- Manage the Lake consistent with Congressionally authorized purposes
- Restoring and maintaining recreational facilities
- Ensure recreational access fore low-income and minority families.

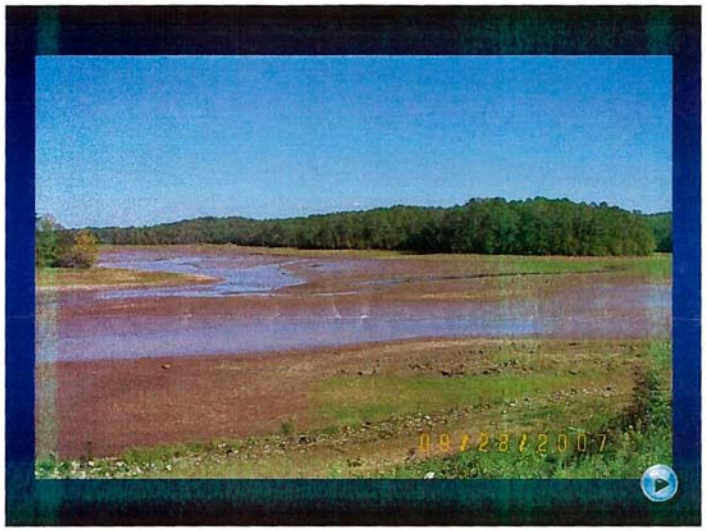
Just so you do not forget just how poorly managed our West Point Lake has been – I've attached pictures of the lake in September of last year (2007) - - our precious lake was politically manipulated, with a vivid failure to use valid science and a dismal refusal to acknowledge the misuse and mismanagement of our precious lake. Please, never allow this to happen again.

Sincerely,

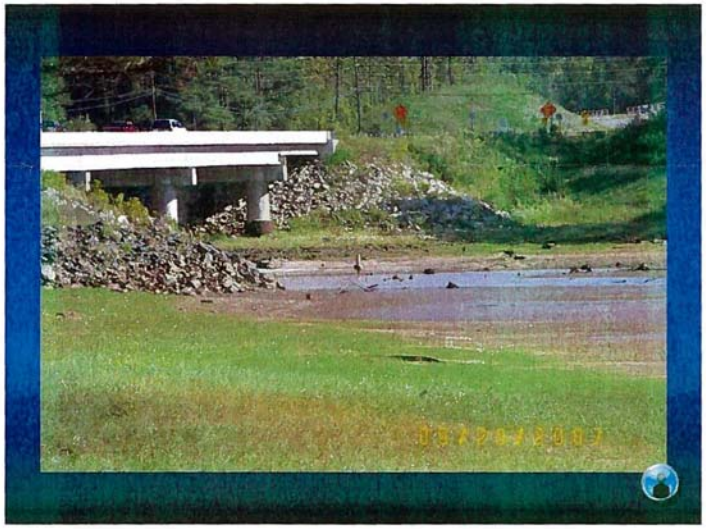
Tom and Chris Hunkele

0023

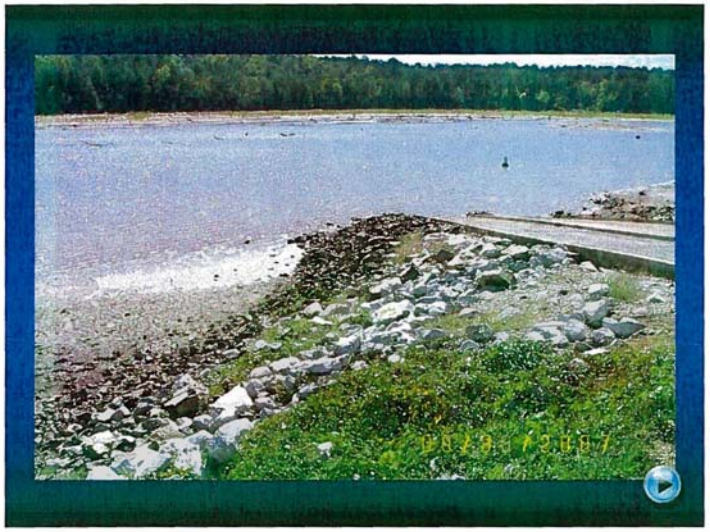
Lakeside Fitness& Therapy LLC



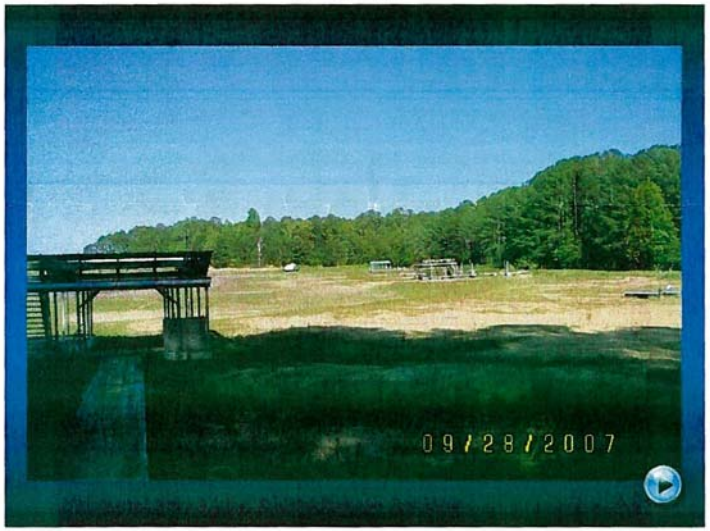
Beech Creek



Lakeside Fitness& Therapy LLC



Yellow Jacket Creek



Creek Ridge ("A deep-water Community") – Please – never again...

US Army Corps of Engineers®
Mobile District

ACF Water Control Manual Update

RELEVANT
READY
RESPONSIVE
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Name: _____ Address: _____

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***Primarily* Participating as a...**

- o *Local Resident*
- o *Elected Official*
- o *Industry/Commercial*
- o *Native American Tribe*
- o *Nongovernmental Organization*
- o *Academic Institution*
- o *Local Gov't Agency*
- o *State Gov't Agency*
- o *Federal Gov't Agency*
- o *Other* _____

Please Check a Comment Area:

- o *ACF Basin*
- o *Blackshear Dam and Lake*
- o *Flint River Dam and Lake*

Water Control Manual Update

- o *Lake Sidney Lanier/Buford Dam*
- o *Morgan Falls Dam*
- o *West Point Lake and Dam*
- o *Goat Rock Dam*
- o *Oliver Dam*
- o *North Highlands Dam*
- o *Bartlett's Ferry Dam & Harding Lake*
- o *Walter F. George Lake & Dam*
- o *George W. Andrews Lake & Dam*
- o *Lake Seminole/Jim Woodruff Dam*

Environmental Resources

- o *Biological Resources*
- o *Air Quality*
- o *Cultural Resources*

Water Management for Multiple Federal Project Purposes

- o *Action Zones*
- o *Drought Operations Management*
- o *Hydropower*
- o *Navigation*
- o *Recreation*
- o *Flood Damage Reduction*
- o *Water Quality*
- o *Water Supply*

NEPA Process

- o *Alternatives*
- o *Baseline*
- o *Impacts Analysis*
- o *Public Involvement*

- o ***Shoreline Management***
- o ***Revised Interim Operations Plan***
- o ***Socioeconomics***
- o ***Recommended Modeling Tools and Data Source***
- o ***Other*** _____

Comments

LEVEL 633 WINTER
HELP ECONOMIC IN AREA
WATER QUALITY
SELL LOTS
SELL CAMP SITE
SELL

www.acf-wcm.com

Scoping comments will be collected by Tetra Tech for the U.S. Army Corps of Engineers, Mobile District through ***November 21, 2008.***

MS. COX: My name is Lesley Cox, L-e-s-l-e-y, C-o-x. My address is P.O. Box CC, Carrabelle, Florida 32322, and I'm here to give comments for the ACF Waterway. The Apalachicola River is very important to me. It's been important to me since 1982. That's I think the first time I ever came to an ACF Army Corps of Engineer meeting. It's the same issues that are important to me, that is the stream flow. The ecosystem, the health of the ecosystem maintaining water in the river and in the bay throughout the whole system. I think there's too many impoundments. I think that we need to compare the pre-dam flows with the post-dam flows and hopefully come up with a water needs assessment that we have been asking for 30 years, and we still don't have, and now we have less and less water. I was a member, a board member of the Chipola Basin Protective Group, and we called for these same studies during the 1980's. We had a dam removed on the Chipola basin, on the Chipola River so that the Apalachicola could get more water, and we are still hoping to keep the Apalachicola and bay as a productive ecosystem. I guess that's all. I'm here as a local resident. I'm a certified Green Guide. That means that I depend on the public lands, then the natural areas here in Franklin County and Northwest Florida. The Apalachicola Basin is very important to me personally and as a business person. I'm also a board member of several non-profit organizations that are particularly interested in the environment. I'm president of the Florida Green Guide Association, and there's many of us in that association that depend on our natural resources as our livelihood.

MR. SMILEY: Okay. My name is Donald Smiley. I live in Wewahitchka, Florida at 161 Bozeman Circle. I am a local resident. I'm also a beekeeper, and my livelihood depends on the health of the river system, specifically Tupelo Honey trees, Ogeche Tupelo, which produces Tupelo honey. My main concern is the lack of water and waterflow in the lower Apalachicola River System. The Tupelo tree depends on wetland, wet forested areas. The tree needs water on its roots, specifically especially during springtime when it needs to bud out, and I've been on the river system my whole life. I was born here in Wewa, fished and worked on the river. My livelihood is pretty much always depending on the river system. What I've seen is a lot of the Tupelo trees that used to be there are gone. They've died out because of lack of water. I see wetland that used to be wet that's dry. Upland trees, hardwoods and other types of trees have encroached into areas where it used to be Tupelo trees. The Tupelo can't survive there any longer, because there's no water there. The soil has became too dry. You know, I think a lot of the reason for that is, is because of the dredging that was done by the Corps of Engineers, the disposal of the dredge spoil they have dredged out of the river and dumped into the river swamps that's filled in areas where Tupelo trees grow. Basically, we have a lack of water flow in the river system, and until we get enough water flow back into the system, we are going to continue to see certain forested areas disappear, certain species of tree disappear, and I read a report just this morning that stated that 44 percent of Ogeche Tupelo is gone, disappeared, died off so that concerns me. I see fish habitat destroyed. The fish in the river system, they are just not there anymore, not like it used to be. The whole contour of the river system is changed. It's straighter than it used to be. There's more sandbars than there used to be. The back water sloughs that used to be there are gone. There's no water in them where there used to be water in them year round. They are gone. That's fish habitat, wildlife habitat. And what I would like to see happen is increased water flow in the Apalachicola River. I would like to see a lot of the damage that's been done repaired, fixed, and I would like to see the water quality improved the way it used to be. And the other thing is, is the river, the channel in the river that was dredged out before when they used to dredge the river or maintain a barge channel in the river, all they used were snag boats and shallow-drafted barges, you know, but when they started pushing bigger barges and greater demand upstream for product, they began to use bigger and bigger barges, so they began to dredge a deeper and wider channel. When they started doing that, that's when the river begin to change, and that's about all I have to say.

MS. CHASTAIN: My name is Patty Chastain, and I live in Apalachicola, Florida. I just finished a seven-day paddling trip on the river, and we started at the Chattahoochee, in Chattahoochee at the Chattahoochee River landing there, just below the dam, Lake Seminole Dam there, and I have never been on the upper part of the river. I've been up Apalachicola River several miles just out of Apalachicola, and I had no idea what a beautiful river it is, and how much there is to see. You know, you think that it's just the same all the way up the river of what I've seen here, but the terrain changed everyday, and this river is something that needs to be preserved and protected, and for so many reasons, for the livelihood of so many people along the river, not just the ones that are in the larger, more populated areas. It's a resource that should be available to all people whether the community is a community of 300 or if it's someone that lives along the river out in the middle of nowhere, and also for those that live in communities that are much larger as well. I believe it's a natural resource that we are all entitled to have equal access and equal use of the river. One entity should not be more important than the other. So as the leaders make their decisions on how they are going to manage the river, I hope that they will remember that, that this river belongs to the people. That's all.

MR. McLAIN: I am David McLain, and I am the Senior Policy Director with the Apalachicola Riverkeepers. I am also the coordinator with the Riparian County Stakeholders Coalition and a Coordinator with the Franklin County Seafood Workers Association. My comments are I have a recommendation to be made to the ongoing process that they are working with now. There should be a visible correspondence between what is taken as stakeholder comments during the EIS scoping process, and the resultant water control manual. There should be, in my judgment, a flow chart developed that says input goes in over here and it gets processed and then it results in changes in the Water Control Manual. Based on what I was told this evening by those that were standing in the different stations, the Water Control Manual is constrained to deal with things not in litigation. Everything is in litigation, and I don't know how you can possibly write a Water Control Manual that avoids issues that are in litigation. The scope of the Environmental Impact Statement, the way it was presented was a broad scope. It included everything, which is great. The scope of the Water Control Manual was not really discussed, and there should be some correspondence or correlation between these meetings where public input is asked and the outcomes, which result in the Water Control Manual. We are not interested in just having an answer back to a question asked during the scoping process. We are interested in seeing a resultant action taken in a Water Control Manual, and there are issues that need to be addressed in this process, as, for example, the Corps asserts that it is a state responsibility to allocate water, that that's all, that they are not in that process. The Corps is not responsible for the allocation of water. The states are, however, the Corps enters into, has a responsibility for managing, the reservoirs in the system. And in doing so, they allocate by water contract portions of the reservoir for use by water users, such as Gwinnett County. To say that this allocation of water in this water contract is not an allocation of water is a distinction without a difference. They need to admit that, and that the Corps is in the process of allocating water. They have a responsibility for, at least, a portion of it.
Finally, the ACF is an interstate water. It is not waters that rise and fall in Georgia. It is not as Governor Perdue asserts, that if a drop of rain falls in Georgia, it's Georgia water. That's simply not what the law says. There are downstream impacts of that, and that's what this impact, this Environmental Impact Statement should document, and I am in hopes that it does. I'm in hopes that all of the people that we're advocating come to this meeting can get a reasonable response and see that what they said, what they invested their time and effort in shows up in the Water Control Manual that is going to govern the rivers of their community. Thank you.

MS. LEWIS: My name is Van Lewis. I live at 4434 St. Teresa Avenue in Eastern Franklin County. My mailing address is P.O. Box 323, Panacea, 32346. I'm a resident of Franklin County and voter here, and I would like to give a statement about the water situation in the Apalachicola River. I want to complain in particular about the governor of Georgia saying that what is at issue down here is some rare species of freshwater muscle. I don't know if the governor of Georgia has ever heard of oysters or crabs or mullet or trout or redfish or snapper or grouper or clams, but he is either extremely ignorant making a statement like that or he is lying and misrepresenting the truth about the entire ecosystem down here that is dependent upon normal freshwater flows increasing and decreasing flows, floods and slow of flows. We need not just a constant supply of water, but a variable supply of water for this ecosystem to work. It's a very important ecosystem, and the governor of Georgia did a great disservice to himself and to the people of our country by saying that all we needed water for was a rare species of muscles. I am very angry about it. I challenge him to a debate on the courthouse steps in Apalachicola and on the steps of the state house in Atlanta.

Another thing that I want to complain about in particular is the United States subsidy, the federal government subsidy for and the state government's persistence in creating more and more larger and larger what are called sanitary sewer systems, flush toilets. A flush toilet might have been a good invention when it was invented hundreds of years ago, but there are too many people in the world now for us to continue to abuse our freshwater resources and our human urinary and fecal resources, which are fertilizers by mixing them together. We, the taxpayers, pay enormous amounts of money creating these dinosaurs that mix these two valuable resources and by mixing them, destroying them and make enormous problems, physical problems and financial problems. We are wasting money. We are wasting water. We are wasting fertilizer, all three, just massive amounts. If you live in the city, the city charges you to give you freshwater. You fertilize it in your toilet. You send it back to them, and they charge you again when you send them that fertilizer. They got you coming and going. It's all a mistake. We need to be doing what Mother Nature does with these resources, which is compost them. Mother Nature has been taken animal fecal, and urinary resources for hundreds and millions of years and doing the right thing with them, feeding the plants with them, feeding bacteria, feeding fungi, feeding plants. That's what we need to be doing, and there is a system for it. The State of Florida owns quite a few of them in state parks around here. It's a composting toilet. You get rid of your water bill, half of it; get rid of your sewer bill, half of it, and you come out with a valuable final product. You don't waste the water. You get fertilizer out of the system, and it's what we need, not in a few state parks around. We need millions and millions of these systems, and we need to make flush toilets illegal. They are destroying us. It used to be part of what made it possible for us to live without disease, but now they are destroying our resources, and they are our enemy. They used to be our friend. They are no longer our friend. They are our

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enemy now, and we have to stop making these systems. We have to use rational systems. We have to use biological systems. We have too many people now to be using these old antiquated systems. We continue to spend billions and billions and billions every year making bigger and bigger and bigger dinosaurs. It's all a mistake. We have to stop it. We have to do a better system. Atlanta wants our water so they can flush toilets. That's the main thing they need it for is flushing toilets and washing cars and wasting water in other ways, and the governor of Georgia says that all we need it for is a few muscles in the river. He's an idiot or he's a liar. I don't know which it is, but he's an idiot or he's a liar, and I hope the Corps of Engineers will take seriously their responsibility to help the United States of America instead of to destroy it like it's doing now. One of the biggest ways that they could help is to end, to teach the country to end the production of these massive, massively mistaken, massively expensive and destructive sewer systems. We don't need them. We need to use the water on site that we use, and not create anymore black water. That's what toilet water is called, black water. We need to use our gray water and quit making black water so that's what I have to say about it. We can save the Apalachicola River by stopping up all of those toilets and making everybody use compost toilets. Mother Nature is a guide to us, and we need to be paying attention. Thank you.

MR. PARRISH; My name is Joseph Parrish, Franklin County Commissioner. I would like to enter some comments in this scoping process. I would like to see a true assessment, environmental impact statement and an assessment done of the Apalachicola Bay and the detrimental effects that the low flows have caused during the years 2006-2007. There are statistical data available through the Florida Fish and Wildlife Service that shows the reduced landings of the crab, shrimp, oysters, pinfish, all of these things, and it's very well documented as to how the low flows have impacted the Apalachicola Bay, but I do not think that they are being taken into consideration. I would like that done during your time, during your Environmental Impact Statement, and your water control plans. You redo your water control plan, and trying to balance the needs between the whole entire basin from north to south as it flows into Apalachicola Bay, and all of the detrimental effects that the low flows are having on Apalachicola Bay and all points in between. The flood plain trees are dying at. The world's largest stand of Tupelo trees are being considerably damaged. Our oyster industry, our fishing industry, our shrimping industry are all being damaged. We understand that we are in a drought, but we also understand that this is a federal system of reservoir that we're paying for by everybody in the United States, and it should be operated as such. To operate it as such you should take into account everything that has happened from top to bottom and how the economies and the natural environment is being impacted as to terms of how you operate the systems that you are currently operating. I'm definitely opposed to any increase of storage of Lake Lanier for MNI above the 15 percent until such time they do something about their unbridled growth. Having said that, I understand that the Corps of Engineers is not responsible for the state's growth polices, but you are responsible for maintaining that 15 percent storage for MNI, and the State of Georgia should be fully aware that you are not going to get anything any better with any higher storage unless you have a reauthorization from Congress. I would also like to tell you that should that come about that I will be in Washington D.C. fighting against that until such time they implement some kind of policy to control the unbridled growth. As was stated last year up there in the Congressional Subcommittee hearing that we had before Congress, the gentleman from the City of Atlanta stated that their population would go from 6.2 to 12 million in ten years, so their population is going to double. They are going to continue to consume a lot of water out of Lake Lanier, and a lot of this has to do with unbridled growth. I do understand that they are coming up with a water management district and a water management plans as we speak that they adopted back in January. They are about 40 years too late. They are 40 years behind the State of Florida, and they need to really look at what they are doing and come up with some concurrency laws. If you cannot handle your sewage, if you do not have adequate water supplies, then you should not be able to have explosive growth, and those are things that they need to really look at. Another issue that they really need to look at is the flows that we need down the Apalachicola River at key times of the year. Just as your flowers bloom

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in *March,* so do our fish spawn. We must have our flood plain inundated and flooded in the months of January and February so that we have a good spring spawning season in the month of March, which is very key to our success here in our local economy. It's also very key to the successful season that we have in our estuary in maintaining our fisheries and our habitat for those fish. Another key time for the flood that we need and inundation of the flood plain is in July. Those are two key times, in January and also in July for the oyster spat, which is a microorganism that creates new oysters here in Apalachicola Bay. Those oysters are the key to our water quality. They are a natural filter feeder. They filter out the contaminants coming down the river from other points coming into our bay, and without those oysters, we lose our water quality. If we lose our water quality, we lose our entire bay. Those oysters are the key to that. Without those, we have nothing here in Franklin County, and I would like for you to very seriously consider those impacts that are happening from the top to the bottom, and really look at the way the federal system is managed and manage it in a federal way, which is in the best interest of all of the users up and down the river system here. That's it.

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Please Check a Comment Area:
- ✓ ACF Basin
- o Blackshear Dam and Lake
- o Flint River Dam and Lake

Water Control Manual Update
- o Lake Sidney Lanier/Buford Dam
- o Morgan Falls Dam
- ✓ West Point Lake and Dam
- o Goat Rock Dam
- o Oliver Dam
- o North Highlands Dam
- o Bartlett's Ferry Dam & Harding Lake
- o Walter F. George Lake & Dam
- o George W. Andrews Lake & Dam
- o Lake Seminole/Jim Woodruff Dam

Environmental Resources
- o Biological Resources
- o Air Quality
- o Cultural Resources

Water Management for Multiple Federal Project Purposes
- o Action Zones
- o Drought Operations Management
- o Hydropower
- o Navigation
- ✓ Recreation
- ✓ Flood Damage Reduction
- ✓ Water Quality
- ✓ Water Supply

NEPA Process
- o Alternatives
- o Baseline
- o Impacts Analysis
- o Public Involvement

- o ***Shoreline Management***
- o ***Revised Interim Operations Plan***
- o ***Socioeconomics***
- o ***Recommended Modeling Tools and Data Source***
- o ***Other*** _____

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Comments

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PAUL STOUFFER
277 Springrock Way
Lawrenceville, Georgia 30043

- Local Resident
- Water Supply

Okay, while I was here I was talking to several of the people from the Corps of Engineers. They all want to talk about this year and how they're mandated, have to drain so much water out, and they're doing everything. But my concern was two years ago at the beginning of the drought. They drained us back knowing that our drainage area is so small. We were going to be the hardest lake to refill. And it just felt like from the very beginning they waited until it got to be a crisis to us before anybody started to really show any concern about Lake Lanier and the water drainage problems.

And it feels like throughout this drought we're still in the worst of the drought compared to south Georgia and Florida and Alabama, and we're the ones that paid the highest price on all of that. And it just doesn't seem fair. And that was just my concern.

Thank you.

KEITH SHANNON (TWO COMMENTOR IDS)
8430 Bryant Road
Gainesville, Georgia 30506

- Local Resident
- Water Supply

Okay, first off, the Corps of Engineers needs to realize that all water that falls within the state of Georgia belongs to the state of Georgia, not to Alabama and not to Florida. I saw the demonstration on the different lake levels and how big they are and the drainage basins and things, and that made a lot of sense. But it seems the problem, to me, that that further south lake, I believe it was Lake Woodruff, is the smallest lake with the biggest drainage area, and all the water flowing to it. And from there it just gets dumped into the ocean.

It seems the logical thing to me would to be pick that water up at the outfall of that lake and send it back up to the north part of Lake Lanier and dump it out there to let it run the cycle again. And you can do that with a pipeline or you can do that with a fleet of trucks. And we could charge the state of Alabama and the state of Florida. Let them pay for it since they think that they're on Georgia's water.

That's my solution.

MeadWestvaco Corporation
P. O. Box 940
Highway 165 South
Phenix City, AL 36868-0940

T 334 855 4711
F 334 855 5347

MeadWestvaco

November 21, 2008

Submitted Via Electronic Mail to comments@acf-wcm.com

Col. Byron Jorns, District Engineer
Mobile District, U.S. Army Corps of Engineers
107 Saint Francis Street, Suite 1403
Mobile, Alabama 36602-9986

Re: Scoping Comments – Revisions to the Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin

Dear Colonel Jorns:

This letter presents MeadWestvaco's ("MWV") input regarding the issues and concerns which it believes should be addressed in the Environmental Impact Statement ("EIS") to be prepared by the U.S. Army Corps of Engineers' ("Corps") for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin Water Control Manual Update. MWV is a member of the Tri Rivers Waterway Development Association ("TRWDA"), and agrees with the comments presented by TRWDA on its behalf, which MWV has expanded on below. On addition, MWV's more specific comments follow. Thank you for allowing MWV to submit these comments and for your consideration.

1. MeadWestvaco's Interest in the ACF River Basin

MeadWestvaco's Mahrt Mill is located near Phenix City, Alabama. The Mahrt Mill is the sole manufacturing facility for the production of coated paperboard for MWV's Coated Board Division. The Mahrt Mill produces over 1,000,000 tons of coated paperboard per year at the Phenix City site, which covers about 1,400 acres and operates 24 hours per day, seven days per week, approximately 355 days per year. The Coated Natural Kraft© ("CNK©") paperboard produced at MWV's Mahrt Mill is shipped around the world and converted into folding cartons and beverage carriers. MeadWestvaco is a major employer in the Phenix City and surrounding area, with approximately 950 employees.

MWV's Mahrt Mill requires water from the Chattahoochee River for use in its manufacturing processes. On average, the Mahrt Mill withdraws approximately 28 mgd and at the same returns approximately 24 mgd to the Chattahoochee River, almost 90% of what it withdraws.

Flow reductions in the Chattahoochee River can have significant negative effects on the financial viability of MWV's Mahrt Mill. Insufficient water for manufacturing processes will

result in reduced production and, consequently, lost jobs in the Phenix City and surrounding areas of Alabama and Georgia. In addition, MWV's current NPDES permit includes provisions which are dependent upon instream flows and water quality within the Chattahoochee River. Flow reductions in the river and the corresponding reduction in water quality will make it difficult or (more likely) impossible for MWV to continue to operate the Mahrt Mill and remain in compliance with its NPDES permit. Consequently, significant flow reductions in the river would result in MWV shutting the mill down in order to avoid NPDES permit violations.

2. The Corps Must Acknowledge and Address the Middle Portions of the ACF River System.

While various needs in North Georgia and the Apalachicola River have dominated the discussions regarding the ACF Basin over the past few years, Congress authorized and instructed the Corps to build and operate the ACF reservoirs substantially for the benefit of those located in between. For example, as explained in more detail below, Congress authorized the three storage reservoirs, including Lake Lanier, to support navigation and hydropower production below the fall line. Further, West Point is specifically authorized not only for hydropower and navigation, but also for flood control, fish and wildlife recreation, and general recreation for those in the La Grange area. As the Corps develops revisions to the ACF water control manual, it must ensure that its operations serve the communities and businesses of the ACF River System's middle regions, such as MeadWestvaco.

a. MeadWestvaco Depends on the Corps' Provision of Adequate Flow.

MeadWestvaco chose to locate our facility in Phenix City with the expectation that the Corps would continue to operate the ACF reservoirs according to the laws authorizing their construction and operation. We spent millions of dollars building infrastructure based on the assumption that flows sufficient to serve the federal water projects' purposes would provide enough water for our needs. We also hoped and expected to reap the benefits associated with river transport of fuel and bulk products. Not only has MWV acted in reliance on the Corps' lawful operation of the ACF reservoirs in the past, but we are counting on adequate flows for our future survival.

MWV urges the Corps to explain in the revised manual and the environmental documentation how it intends to account for the needs of the communities and industries located in the middle and lower portions of the ACF River System, including MeadWestvaco.

b. The Corps Must Continue to Provide Agreed-Upon Flows in the Middle and Lower Chattahoochee River.

As TRWDA points out, in recent years, representatives of Alabama, Florida, and Georgia have attempted to develop a mutually agreeable allocation of water in the ACF River System. In that context, on July 22, 2003, the three governors signed an agreement which set flow parameters, including the following:

- "On the Chattahoochee River above its confluence with Peachtree Creek, a flow of 750 cfs will be maintained on a daily basis, with the understanding that the State of Georgia is entitled to a variable flow regime that requires no less than 650 cfs in winters. . . ."
- "On the Chattahoochee River at Columbus, Georgia, a flow of 1350 cfs will be maintained on a daily basis at all times, and a flow of 1850 cfs will be maintained on a weekly basis provided that the top of the storage pool in West Point Reservoir is above 621.6 feet."
- "On the Chattahoochee River at Columbia, Alabama, a flow of 2000 cfs will be maintained on a daily basis."
- "On the Apalachicola River at Chattahoochee, a minimum flow of 5000 cfs will be maintained on a weekly basis at all times. . . ."

Memorandum of Understanding Regarding Initial Allocation Formula for the ACF River Basin, ¶ 4 (July 22, 2003) (emphases added). Those flow figures were to be included in any allocation formula agreed to by the parties, and they were "intended to be met by the combined actions of maintaining water uses consistent with the allocation formula, and by the Corps operating the federal reservoirs consistent with the allocation formula." *Id.* (emphasis added).

In revising the manual, the Corps should develop operations to meet those parameters as agreed to by all three states. TRWDA's comments call the Corps' attention to the Middle and Lower Chattahoochee flow requirements, namely, 1350 cfs daily and 1850 cfs weekly at Columbus, Georgia, and 2000 cfs at Columbia, Alabama. We believe those flow levels are generally sufficient to meet the lawful, authorized purposes of the ACF River System. They also correspond to the flows that are necessary to meet our facility's operational needs.

c. The Corps Cannot Rely on Flint River Flows to Meet Apalachicola River Needs to the Detriment of the Flows in the Middle and Lower Chattahoochee River.

Recently, as TRWDA points out, increased flows from the Flint River have contributed to the Corps' release of flows from Woodruff to provide for 5000 cfs at Chattahoochee. Like all stakeholders in the basin, MWV is grateful for any inflow that helps meet needs within the system. However, the Corps must not rely on Flint River flows to meet Apalachicola River requirements to the detriment of the Middle and Lower Chattahoochee River communities and MWV. Contributions from the Flint River should provide no basis to reduce flows in the Middle and Lower Chattahoochee River below levels necessary to support authorized project purposes, as well as the needs of MWV and other industrial and municipal water users in that area of the river.

As noted below, the primary purposes of the ACF reservoirs include hydropower, navigation, flood control, recreation, and so on. Those purposes have no meaning except in the context of the communities served by the ACF River System. Most of those communities are

located at various points along the Chattahoochee River. The Corps' ability to fulfill the reservoirs' purposes for the benefit of the communities located along the river from Dothan, Alabama to Gainesville, Georgia, depends exclusively on conditions in the Chattahoochee River. The Flint River has absolutely no effect at any point on the Chattahoochee River above the influence of the Jim Woodruff Dam. MWV agrees with TRWDA that because Flint River conditions are independent from Chattahoochee River conditions, there is no logical basis to alter operations at Chattahoochee River projects to the detriment of Middle and Lower Chattahoochee River stakeholders in response to conditions in the Flint River Basin.

3. The Corps Must Operate the ACF Projects for Their Authorized Purposes.

a. The Corps Must Acknowledge the Statutory Authorized Purposes for the ACF Reservoirs.

As TRWDA points out, several statutes provide authority for the Corps' initial construction and subsequent operation of the ACF reservoirs. Any revision to the water control manual for the ACF River System must comply with those laws as well as the Corps' regulations. As TRWDA states, the reservoirs' primary authorized purposes are as follows:

- **Lake Lanier: Hydropower, downstream navigation, and flood control.** Sources: Pub. L. No. 79-525, 60 Stat. 634, 635 (1946) (referencing H.R. Doc. 80-300 (1946)).
- **West Point: Flood control, hydropower, fish and wildlife recreation, general recreation, and navigation.** Sources: Pub. L. No. 87-874, 76 Stat. 1173, 1180, (1962) (referencing H.R. Doc. No. 87-570 (1962)).
- **Walter F. George: Navigation and hydropower.** Sources: Pub. L. No. 79-14, 59 Stat. 10, 11, 17 (1945) (referencing H.R. Doc. No. 76-342 (1939)); Pub. L. No. 79-525 (referencing H.R. Doc. 80-300); Resolution of House Public Works Committee (May 19, 1953).
- **George W. Andrews: Navigation.** Sources: Pub. L. No. 79-14; Pub. L. No. 79-525; Resolution of House Public Works Committee (May 19, 1953).
- **Jim Woodruff: Navigation and hydropower.** Sources: Pub. L. No. 79-14; Pub. L. No. 79-525.

The laws cited above are the primary sources of the Corps' authority with respect to the ACF reservoirs. They provide the legal basis pursuant to which the Corps operates the ACF reservoirs. To demonstrate compliance with applicable laws and authorities, MWV urges the Corps to provide a clear explanation of the primary authorized purposes for each reservoir in the revised manual and in the environmental documentation, and to operate the reservoirs for those purposes.

b. The Federal Action Is Reservoir Operation for Authorized Purposes.

Like TRWDA, MWV urges the Corps to include in its environmental documentation a clear explanation of the federal "action" which the Corps is evaluating for purposes of the National Environmental Policy Act. That action should be defined as the operation of ACF reservoirs according to their authorized purposes.

Events leading to the development of the Interim Operations Plan ("IOP") and Revised Interim Operations Plan ("RIOP") illustrate our concerns. Like TRWDA, in our view, the Corps never clearly defined the action which was the subject of a consultation with the U.S. Fish and Wildlife Service ("FWS") under the Endangered Species Act ("ESA"). Under ESA Section 7(a)(2), federal agencies are required to consult with FWS to insure a proposed action does not (1) jeopardize the continued existence of a listed species or (2) destroy or adversely modify designated critical habitat. 16 U.S.C. § 1536(a)(2). If the action would cause jeopardy or adverse critical habitat modification, FWS is authorized to propose reasonable and prudent alternatives and reasonable and prudent measures. However, in this case, the federal action constituting the basis for consultation was never clearly defined. Rather than presenting to FWS its standard operating procedures under the authorizing statutes, the Corps entered into open-ended negotiations with FWS and developed what amounts to a freestanding conservation agreement for the Apalachicola River only. The resulting RIOP now inappropriately drives operations for the rest of the system.

MWV urges the Corps not to repeat that model as it revises the manual. The Corps should begin by setting forth a set of operations that fulfills the authorized purposes of the reservoirs, according to the primary legal authorities. To the extent manual revisions allow for alternative operations – such as operations to serve secondary project purposes or to comply with the ESA and other federal laws – the Corps should allow such alternatives only on the following terms:

(1) Any alternative that differs from optimal operation of the reservoirs for primary authorized purposes should be clearly identified as such.

(2) The need and/or legal basis to deviate from operation of the reservoirs for optimal fulfillment of the primary authorized purposes should be clearly explained.

(3) The Corps should clearly explain applicable limitations on any deviation from operations for primary project purposes, such as a time limit and the circumstances under which the Corps will restore primary operating parameters.

c. Revisions to the Manual Must Recognize Navigation as a Primary Project Purpose and Reflect Statutory Intent to Support Downstream Communities.

A primary purpose of all the ACF reservoirs is to support navigation. Navigation on the Chattahoochee and Apalachicola Rivers is obviously limited, as it always has been, to points

between the Gulf of Mexico and the fall line at Columbus, Georgia. Most of the ACF projects also support hydropower; however, the lowermost hydropower facility (Woodruff) is a run-of-river project with no storage capacity, as is Andrews, the nearest upstream reservoir. If navigation is (and has been) limited to points below the fall line, and the hydropower project farthest downstream is run-of-river, MWV agrees with TRWDA that the inevitable conclusion is that Congress intended for the Corps to operate the upstream storage reservoirs, and especially the reservoir with the most storage capacity, substantially for purposes that would be realized in the lower regions of the ACF Basin. Any revisions to the manual must be consistent with that clear demonstration of Congressional intent.

MWV is aware of the steep reduction in commercial navigation which has impacted the ACF River System in recent years. However, changes in usage in recent years do not alleviate the Corps of its statutory obligation to support navigation as it revises the water control manual. The critical limitation on navigation is the lack of proper maintenance of a few small stretches of the Apalachicola River, which blocks access from the Chattahoochee and Flint Rivers to the Gulf of Mexico. However, channel maintenance is the Corps' responsibility under federal law. Thus, the primary hindrance to navigation in the ACF system is the Corps' failure to maintain it. The Corps must not and cannot lawfully use its own failure to perform its statutory obligations to maintain the Apalachicola River for navigation as a basis to unilaterally reorder the project purposes without Congressional approval.

To justify its failure to maintain the channel, the Corps has cited a decision of the Florida Department of Environmental Protection ("FDEP") in 2005 to deny certain environmental authorizations for the Corps' channel maintenance activities. Like TRWDA, MWV remains concerned that the Corps would so easily place itself in a subservient position to a state and allow a state agency to control federal activities. Nevertheless, MWV shares the concerns of FDEP and environmental groups with respect to the environmental impacts of certain dredging and disposal practices of the past. However, MWV is convinced there are solutions for the Corps to resume channel maintenance activities in a manner acceptable to FDEP and all affected parties, if only the Corps will once again actively pursue FDEP authorization.

Aside from MWV's interest in navigation, we believe the Corps' provision of flow sufficient to support navigation will meet other purposes and legal requirements. Such flows will support industrial and municipal requirements, which were discussed further in Section 2 above. In addition, flows in the Chattahoochee River sufficient to support navigation will be beneficial to the natural resources of the Apalachicola River and Apalachicola Bay. While a minimum flow of 5,000 cfs has been established for the benefit of certain species protected under the ESA, it is the position of Apalachicola Bay and River Keeper and the Franklin County Seafood Workers that those minimum flows do not adequately protect the Bay and its other resources, including commercial fisheries and other ecological resources, on a sustained basis. Like TRWDA, MWV believes that flows sufficient to meet Middle and Lower Chattahoochee requirements would increase the frequency of instances when flows below Woodruff exceed 5,000 cfs, particularly when combined with contributions from the Flint River.

d. Water Supply Is Not an Authorized Purpose of Lake Lanier.

As noted above, the primary purposes of Lake Lanier are hydropower, flood control, and support of downstream navigation. According to the Corps' report as reprinted in House Document 300, the provision of hydropower and downstream navigation on a cost-effective basis . . .

> . . . cannot be secured by the plants below Columbus proposed herein unless a considerable storage be provided upstream to increase the minimum regulated flow and the firm capacities at those plants; without such upstream storage, the development would not be economically justified. The best development for that purpose is that at Buford proposed herein.

H.R. Doc. No. 80-300 at 39 (1946) (emphasis added). In other words, the Buford project was necessary to support navigation and hydropower production below the fall line, and was constructed for the purpose of maintaining minimum flows sufficient to support hydropower and downstream navigation. Congress approved House Document 300 and authorized the Buford project on that basis. Pub. L. No. 79-525, 60 Stat. 634, 635 (1946)).

Congress anticipated that Lake Lanier and the other reservoirs would likely serve other purposes as well, including water supply. House Document 300 states that releases from Buford should be sufficient "so as to insure at all times a flow of Atlanta not less than 650 second-feet." H.R. Doc. No. 80-300 at 34 (1946). That flow level was deemed necessary "to meet the estimated present needs of the city, and to prevent damage to fish, riparian owners, and other interests by complete shutdowns" during off-peak hydropower production times. *Id.* (emphasis added). However, by addressing only the "present" needs of the city, House Document 300 clearly signaled to Atlanta more than 50 years ago that Lake Lanier would not indefinitely provide ever-increasing supplies of water for local consumption. To the contrary, use of Lake Lanier for water supply was authorized only to the extent consistent with the primary project purposes. Again, according to House Document 300, Lake Lanier "would ensure an adequate municipal and industrial water supply for the Atlanta area, would produce large benefits in the way of recreation, fish and wildlife conservation, and similar matters," but only "[i]ncidentally" to the service of the reservoir's primary purposes. *Id.* at 39 (emphasis added).

Section 301 of the federal Water Supply Act of 1958 also requires the Corps to provide water for local consumption only to the extent possible without compromising the primary authorized purposes. Pub. L. No. 85-500, Title III, § 301, 72 Stat. 297, 319-20 (1958), *codified as amended at* 43 U.S.C. § 390b. According to that statute:

> Modifications of a reservoir project . . . to include storage . . . which would seriously affect the purposes for which the project was authorized, surveyed, planned, or constructed, or which would involve major structural or operational changes shall be made only upon the approval of Congress as now provided by law.

43 U.S.C. § 390b(d) (emphasis added). The Corps has long interpreted Section 301 to limit allocation of storage for water supply to the lesser of 15% of a project's total storage or 50,000 acre-feet. ER 1105-2-100, ¶ 3.8.b(5). That is an accurate reflection of longstanding federal policy to view water supply as primarily a local, not federal, responsibility.

Circumstances in North Georgia have changed dramatically since the 1940s and 1950s. Atlanta and its surrounding communities consume more water than they used to, and they clearly want to consume even more in the future. Further, a local economy based on recreation and waterfront property values has developed around Lake Lanier. Like TRWDA, MWV understands and appreciates the difficulties created when water quantity in Lake Lanier is insufficient to fully serve those ancillary purposes. However, while circumstances in the Atlanta area may have changed, the legal principles governing operation of Lake Lanier have not. The fact that upstream communities have become dependent on the federal resource is certainly problematic in times of water shortages, but the Corps still cannot lawfully address local shortages by allowing unauthorized diversions from Lake Lanier, thus creating further problems downstream.

Federal law allows local communities to contribute to the construction of Corps reservoirs and essentially reserve a portion of the project's storage for local consumption. At the time of construction of Buford Dam, the Corps was authorized to accept funds from states and their political subdivisions toward the construction of authorized flood control projects in order to "provide additional storage capacity for domestic water supply or other conservation storage," as long as "local agencies" incurred the increase in cost and agreed to "utilize such additional storage capacity in a manner consistent with Federal uses and purposes." Pub. L. No. 75-208, 50 Stat. 515, 518 (1937), *codified as amended at* 33 U.S.C. § 701h. State and local interests might have taken steps then which would have eased the current difficulties to some extent. However, local authorities in Atlanta did not avail themselves of that opportunity. The sprawling development that has emerged in North Georgia since that time has done nothing to change the longstanding legal principles governing Lake Lanier and the other ACF reservoirs. Only Congress can do that.

While the area surrounding Lake Lanier has indeed changed over the years, so have downstream communities and industries. While Lake Lanier and the metro Atlanta area have created a situation where they are now depending on the Corps to abandon the federal reservoir system's primary authorized purposes in order to support local growth and recreation, downstream users are depending on the Corps' continued maintenance of the system's primary authorized purposes, which would allow for their instream flow needs to be met, provide water supply and wastewater assimilation for both domestic and industrial water users, and protect the region's aquatic ecology. The Corps cannot and should not place the Atlanta area's desire for changes in the use and operation of these federal projects above downstream users' reasonable expectations that the Corps will comply with the federal laws establishing the primary purposes of these projects.

4. Maintenance of FERC Flows in Accordance with Current IOP and RIOP.

It is of critical importance to MWV that the Corps maintain FERC-approved flows of 800 cfs minimum, 1350 cfs daily average and 1850 cfs weekly average. Despite the fact that these flows are required in the current IOP and RIOP, they are not being maintained consistently. The IOP states that these flows will be maintained as long as West Point reservoir exceeds an elevation of 621.6 feet. As the Columbus Water Works points out in its comments, although West Point exceeded this level all summer, since June 24, 2008, instream flows have fallen short of this required weekly average approximately 60% of the time and have fallen short of the daily average approximately 10% of the time.

5. Interim Operation of ACF System Must Conform to IOP and RIOP.

MWV is concerned that the Corps' failure to following the current IOP and RIOP provides clear evidence that the Corps has already determined what changes it wishes to make to the operating procedures within the ACF River System without completing the required EIS. Pursuant to NEPA, the Corps must show that the EIS informed its decision-making process, rather than simply using the EIS to justify a decision already made. 40 C.F.R. § 1502.5.

Additionally, the courts have held that a NEPA review must occur before an agency action was decided upon. The Ninth Circuit noted in Cady v. Morton, 527 F.2d 786 (9th Cir. 1975): "That the filing of an EIS should precede rather than follow federal agency action has been consistently recognized by the courts." Cady at 794. The purpose of the review under NEPA is to provide "decisionmakers with an environmental disclosure sufficiently detailed to aid in the substantive decision whether to proceed with the project in light of the environmental consequences." Methow Valley Citizens Council v. Regional Forester, 833 F.2d 810 (9th Cir. 1987); see also Save Barton Creek Ass'n v. FHWA, 950 F.2d 1129, 1137 (5th Cir. 1992) (the purpose of NEPA is to inform the agency making the decision).

The Corps must be careful to avoid any preconceptions or arrive at any decisions before it has completed and issued the EIS updating its criteria and guidelines for managing water in the ACF River System.

> Whenever an agency decision to act precedes issuance of its impact statement, the danger arises that consideration of the environmental factors will be *pro forma* and that the statement will represent a *post hoc* rationalization of that decision. NEPA was intended to incorporate environmental factors and variables into the decisional calculus at each stage of the process.

Sierra Club v. Lynn, 502 F.2d 43, 59-60 (5th Cir. 1974). MWV is concerned that the Corps' failure to abide by the current IOP by failing to maintain the minimum flows specified at West Point indicates that the Corps has already determined what action it wishes to take (giving priority to non-authorized purposes at the expense of navigation and hydropower production) and is simply performing the EIS to justify that decision.

Thank you again for this opportunity to comment. Please feel free to contact me at (334) 855-5233 if you have any questions.

Sincerely,

Tony Owens

Tony D. Owens
Environmental Manager

Georgia Department of Natural Resources
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Noel Holcomb, Commissioner
Dr. Carol A. Couch, Ph.D., Director
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November 21, 2008

BY ELECTRONIC MAIL AND U.S. MAIL
Tetra Tech, Inc.
Attn: ACF WCM Comments
107 Saint Francis Street, Suite 1403
Mobile, AL 36602-9986

Re: Update of the Water Control Manual for
the Apalachicola-Chattahoochee-Flint River Basin
Environmental Impact Statement
Scoping Process
Comments of the State of Georgia

Dear Sir or Madam:

In response to the Federal Register Notice of September 19, 2008 (73 Fed. Reg. 54,391), and information provided by the Corps at public meetings held from October 20-29, 2008, the State of Georgia submits these comments on the scoping process that will be used to gather information for an Environmental Impact Statement ("EIS") on the potential environmental impacts associated with the Corps' update of the water control manual ("WCM") for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin.

I. Introduction

A. Chattahoochee River

The Chattahoochee River is one of the State of Georgia's most precious natural resources. The citizens of the State of Georgia rely upon the Chattahoochee River and the federal reservoirs constructed on it to meet vital needs of the citizens of the State of Georgia, including water supply, waste

assimilation, recreation, and navigation, and to support the biological needs of a wide variety of species. 0037

The Chattahoochee River rises in the Blue Ridge Mountains in northeastern Georgia and flows through Atlanta to the southwest until it turns south and forms, at its western bank, the border between the States of Georgia and Alabama. Along the way, the Chattahoochee River runs through the Georgia towns and cities of West Point, Columbus, and Fort Gaines. The Chattahoochee River joins the Flint River at Lake Seminole at the Florida border. Upon crossing into Florida, the Chattahoochee River becomes the Apalachicola River and empties into the Apalachicola Bay in the Gulf of Mexico. The Chattahoochee River is part of what is known as the ACF River Basin. The ACF Basin covers parts of the Blue Ridge, Piedmont, and Coastal Plain with 74 percent of the basin lying within Georgia, 15 percent in Alabama, and 11 percent in Florida.

B. Lake Lanier

Lake Lanier is located near the headwaters of the Chattahoochee River, and the flow in the Chattahoochee River into and below Lake Lanier in the upper portion of the ACF Basin is small, particularly in comparison with the much higher flows downstream in Middle and Southern Georgia and in Florida. Only 6% of the drainage area of the ACF Basin flows into Lake Lanier. Yet, Lake Lanier provides the majority of storage capacity (64%) among the federal reservoirs within the ACF Basin. As the Corps has repeatedly acknowledged, since Lake Lanier, when drawn down, can take a long time, even several years, to refill, particular care must be given to conserve and protect the water stored in it.

C. The Vital Role of Lake Lanier and the Upper Chattahoochee River in Meeting Georgia's Water Supply Needs

It is the policy of the State of Georgia that its waters are to be managed prudently to meet the needs of its citizens, and to protect and preserve Georgia's environment and natural resources. O.C.G.A. § 12-5-21(a). Georgia regulates municipal and industrial water withdrawals pursuant to a statutory framework that requires persons seeking to withdraw more than 100,000 gallons of water per day to obtain a permit from the State. O.C.G.A. §§ 12-5-21(b), 12-5-31. An applicant for a water withdrawal permit must submit detailed information to allow the State to determine, among other things, that the applicant's need for the withdrawal is

reasonable, that the applicant will take appropriate measures to conserve water, and that the applicant's use of water will not have unreasonably adverse effects on other water users. O.C.G.A. § 12-5-31; DNR Rule 391-3-6-.07. In the Metropolitan Atlanta area, the State will not issue a permit for any new or expanded water withdrawal unless such withdrawal is consistent with the Water Supply and Water Conservation Plan of the Metropolitan North Georgia Water Planning District. O.C.G.A. § 12-5-584(d)(3). The State of Georgia has enacted a comprehensive statewide water plan that will guide regional water plans to be developed throughout the State. 0037

The Chattahoochee River is the primary source of water supply to the majority of Metropolitan North Georgia's more than 4 million people. Roughly 75% of the municipal and industrial water supply for the ten county region served by the Atlanta Regional Commission, for example, comes from the Chattahoochee River/Lake Lanier system. Current needs for water from the Chattahoochee River could not be met without withdrawals directly from Lake Lanier and coordinated releases from Lake Lanier that augment flows in the Chattahoochee River. In 2007, approximately 440 million gallons per day of water were withdrawn from the Chattahoochee River north of Whitesburg, Georgia, including Lake Lanier. In addition, approximately 257 million gallons per day of water were returned to the river and lake in that same area.

Situated as the Atlanta area is toward the uppermost geographical confines of a relatively narrow upper Chattahoochee River drainage system, the options for solutions to regional water needs are very few in number. The crystalline rock geology underlying the region provides very little groundwater, limiting water supply choices almost exclusively to surface water options. In addition, the geography and topography of the upper Chattahoochee River basin are not conducive to additional large water supply reservoirs.

Numerous water supply studies for the region dating back to the early 1960's have concluded that the Chattahoochee River/Lake Lanier system is the most economically viable and environmentally protective alternative for meeting the water needs of the region. In 1973, a group known as the Executive Group that consisted of the United States Army Corps of Engineers, the United States Environmental Protection Agency, the Georgia Department of Natural Resources, the Atlanta Regional Commission, and the Georgia Mountains Planning

Commission began the eight-year Metropolitan Atlanta Water Resources Study 0037
("Study"). The Study was authorized by a resolution of the United States Senate Public Works Committee adopted on March 2, 1972. The study was completed in 1981. The Study concluded that Lake Lanier and the Chattahoochee River should provide 89% of the water to meet projected demands of the Metropolitan Atlanta area.

In 1978, an interim report of the Executive Group concluded that without a long-range water supply plan, "the economic growth of the Atlanta region would be adversely affected. The adverse impacts were later defined to include significant losses to the regional and national economics." The 1978 interim report recommended further study on four alternatives for meeting future water demands from the Lake and River system: construction of a reregulation facility downstream of Buford Dam; raise the summer operating pool level at Lake Lanier above 1071 feet above mean sea level; increase storage capacity of Morgan Falls Reservoir; and reallocate storage in Lake Lanier from hydropower to water supply. The Executive Group studied the four alternatives from 1979 through 1981 and concluded that the National Economic Development ("NED") benefits calculated for the reregulation dam and reallocation of storage were very similar. The Corps subsequently reevaluated the NED benefits of the reregulation dam and reallocation of storage using a computer model and determined that reallocation of storage was the preferred NED plan.

Accordingly, in 1989, the Corps proposed permanently reallocating 207,000 acre feet of storage in Lake Lanier from hydropower to water supply to meet year 2010 water supply demands. The Corps conducted an Environmental Assessment ("EA") on the proposal and issued a draft Finding of No Significant Impact ("FONSI"). The State of Alabama brought suit challenging the proposed reallocation. The Corps voluntarily withdrew the reallocation as part of settlement negotiations among the Corps and the States of Georgia, Alabama, and Florida.

In addition, recreational use of Lake Lanier also supports a multi-billion dollar economy. Lake levels have a direct impact on recreation and the recreational economy of the lake. According to the Corps, recreation at Lake Lanier begins to suffer (i.e., some boat launching ramps unusable, most beaches unusable, navigation hazards begin to surface) when the reservoir falls to an elevation of 1,066 feet. Major impacts to concession and recreational areas are

observed at an elevation of 1,063 feet. Many docks and ramps are inaccessible, 0037
and there are major impediments to navigation, at 1,060 feet.

D. West Point Lake and Lower Federal Reservoirs

West Point Lake is located on the Chattahoochee River approximately 155 miles southwest of Lake Lanier. West Point Lake, like Lake Lanier, meets vital water supply needs of citizens within the State of Georgia. The City of LaGrange withdraws water from West Point Lake for municipal and industrial needs. The City of West Point relies on withdrawals immediately downstream of West Point Dam for municipal and industrial purposes. Further downstream, the City of Columbus withdraws water from the Chattahoochee River and relies on the waste assimilative capacity of the Chattahoochee River to meet the needs of approximately 225,000 people. West Point Lake also supports a significant recreational economy.

Lake Walter F. George (a.k.a. Lake Eufaula) and Jim Woodruff Dam/Lake Seminole are located downstream from West Point Dam. These lakes provide valuable recreational benefits in addition to meeting other needs.

II. Scoping Issues and Comments

Regulations issued by the Council on Environmental Quality ("CEQ") require that the Corps, in preparing an EIS, must first determine the scope of issues to be addressed and identify the significant issues related to a proposed action. 40 C.F.R § 1501.7(a)(2008).

A. Actions to be Considered

The three types of actions to be considered during the scoping process are:

1. Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. . . .

2. Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.

3. Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. 0037

40 C.F.R. § 1508.25(a)(2008).

To our knowledge, the Corps has not yet identified any "proposed action" to be studied. Georgia recommends strongly that the Corps not make any version of the Interim Operations Plan, including the Revised Interim Operations Plan ("RIOP"), the proposed action. Instead, the Corps should analyze a range of reasonable and feasible alternatives for the continued operation of the federal reservoirs in the ACF Basin.

It should be noted that the issuance of water withdrawal permits from Lake Lanier and the withdrawal and consumption of water from the ACF Basin are state and local actions, not federal actions, and therefore should not be addressed within the scope of connected, cumulative, and similar federal actions. The Corps has no authority to make decisions on matters of water supply planning and must defer to the State of Georgia on such issues. Water supply withdrawals (or the lack thereof) and the consequences of them should be examined, however, as impacts of the proposed federal action.

B. Alternatives Analysis

The three types of alternatives for the Corps to consider in the scoping process "include: (1) No action alternative. (2) Other reasonable courses of actions. (3) Mitigation measures (not in the proposed action)." 40 C.F.R. § 1528.25(b)(2008). During the scoping the process, the Corps is only required to examine alternatives that are both reasonable and feasible. *Vermont Yankee Nuclear Power Corp. v. National Resources Defense Council*, 435 U.S. 519, 551 (1978). Thus, alternatives to be considered are those that a) meet the purpose and need of the proposed action, b) address regulatory concerns, c) are available and capable of being implemented, and d) are prudent and feasible.

The federal projects in the ACF Basin were authorized to fulfill a variety of important purposes. On top of this, the Corps has obligations to comply with the

Endangered Species Act, the Clean Water Act, and other federal environmental laws. The Corps is thus presented with a multitude of potential alternatives for how to operate the system. Below is a discussion of particular issues that the Corps should take into account in developing its alternatives analysis. 0037

1. <u>No Action Alternative</u>

CEQ guidelines indicate that in situations involving potential changes to ongoing federal actions, as would be the case here, the "no-action" alternative is interpreted to mean "no change" from the current management direction or level of management intensity. 46 Fed. Reg. 18026, 18027 (March 23, 1981). Where a natural resource has been altered by construction or operation of a project over time, it would be "a useless academic exercise" to consider as the no-action alternative returning the resource to its earlier unaltered state. *See id.; see also American Rivers v. Federal Energy Regulatory Commission*, 201 F.3d 1186, 1200 (9th Cir. 2000).

For decades, the Corps has operated Lake Lanier to meet evolving industrial and municipal water supply needs. The Corps has not finalized any action to reallocate storage to water supply. From the standpoint of operations for water supply, this state of affairs would be the no-action alternative. To operate according to water supply needs that existed at some time in the past would require new action on the part of the Corps and thus would not constitute "no action." Doing so also would not represent a reasonable or feasible alternative, thus, it should not be considered as any alternative, including the "no-action" alternative. The Corps should coordinate with state and local interests to analyze water demands at Lake Lanier over the past several years and determine the most accurate and appropriate measure for current water supply requirements.

Although the Corps is currently making releases from the Woodruff project pursuant to the RIOP, the RIOP is not likely the most appropriate choice for the no-action alternative for the entire ACF system due to its interim nature. Because the Corps has consistently described the RIOP as a plan for operations that would only continue until the WCM update process was complete, and because the Corps has also maintained the position that the RIOP was not itself a change to the existing water control manual, the Corps has never conducted a careful study of the RIOP's long-term impact on the ACF system as a whole. Therefore, even if the

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RIOP is used as the no-action alternative, the Corps must conduct a detailed study on the RIOP's long-term effects.

2. Consideration of Best Alternative Operations

During public meetings held to discuss the scope of the ACF WCM update process, representatives from the Corps indicated that, due to budget constraints, the Corps plans to only document its current operations in the ACF Basin and does not intend to study alternatives to those operations. Such a proposal is in direct conflict with both regulations governing the development of documents to comply with the National Environmental Policy Act ("NEPA") and regulations for the development of water control plans and manuals. Instead of merely documenting current operations, the Corps must develop and analyze alternatives that will make the most efficient use of the water resources within the ACF River Basin.

In considering alternatives to its current operations, Corps should not limit its consideration to only those alternatives that the Corps believes are entirely within its current authority. Doing so could cause the Corps to overlook what could be a manner of operation that represents the highest and best use of these federal projects. The purpose of the WCM update process should be to develop operations that make the highest and best uses of the federal infrastructure and natural resources within the ACF system. If the Corps determines that the best use of those resources is not currently within the Corps' authority, the WCM update process should include an analysis of how the Corps can obtain the necessary authority.[1]

To assist in the development of operations that make the best use of the water resources within the basin, the State of Georgia provides below several possible alternative operations that should be considered by the Corps as part of the process:

[1] Georgia believes that the Corps has the authority to operate Lake Lanier to meet Georgia's projected year 2030 municipal and industrial water supply needs. Nothing herein should be interpreted as a suggestion by Georgia that further Congressional authorization is legally necessary to reallocate additional storage to municipal and industrial water supply.

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a. Reallocation of Storage for Water Supply

The Corps should consider the formal reallocation of storage in the federal reservoirs to meet current water supply needs and projected future water supply needs. As discussed above in Section I.C., numerous water supply studies have concluded that the Chattahoochee River/Lake Lanier system is the most economically viable and environmentally protective alternative for meeting the water needs of the region. Georgia is confident that any objective and thorough economic or environmental analysis would conclude that the highest and best use of Lake Lanier is to meet municipal and industrial water supply needs and to coordinate such operations with releases to maximize to the extent possible the other purposes for the reservoir. No study of alternatives for a Water Control Plan that will guide future operations would be complete without an analysis of alternatives that assure storage for Georgia's present and future water supply needs through formal reallocation of storage. The Corps also should take a careful look at any reallocations in storage at West Point Lake and Walter F. George reservoir that might be needed to meet future water supply needs in Georgia.

b. Rule Curve Changes at all Projects in the ACF Basin

The Corps should consider possible changes to the rule curve operations at all of the federal ACF Reservoirs to maximize available storage and optimize operations for all project purposes. While continuing to provide adequate flood control protection, the Corps should analyze whether different rule curve configurations would result in the more efficient operation of the system as a whole. Possible changes that may be considered include raising the top of conservation, reducing the winter draw-down, and making adjustments to the shoulders of the rule curve to change the rate of the winter draw-down or the spring re-fill. The potential beneficial effects of these changes may be most pronounced at Lake Lanier.

c. Different Methods for Optimizing the ACF System

The Corps should not limit possible alternatives to only those that mimic the manner of operations described in the RIOP. Instead, the Corps should consider alternatives to current operations such as the concept presented by the Atlanta Regional Commission ("ARC") and its consultant, Hydrologics, Inc. in January of 2007. The ARC proposal demonstrates that alternant methods of operations can

meet downstream needs while maximizing total storage within the ACF system. The WCM update process provides the Corps with an excellent opportunity to explore options such as the ARC proposal that may not have been possible under the prior operations manuals.

d. Optimal Operations for Meeting Endangered Species Needs

The RIOP should not be considered as the primary alternative for meeting the needs of endangered species below the Jim Woodruff Dam. When the Corps introduced the original IOP in March of 2006, the Corps made clear that the IOP would only remain in place pending the completion of the WCM update process. Therefore, that Corps has never considered the IOP as a mode of permanent operations. It may be that the Corps should consider portions of the current RIOP to be a possible alternative in the WCM NEPA process. However, it should be only one of several alternatives considered.

In determining the mode of operations necessary to support endangered species, the Corps should consider the actual needs of the species and not arbitrary flows, such as 5,000 cubic feet per second ("cfs") at the Chattahoochee gage, that have become the excepted norm over time. Maintaining a flow of 5,000 cfs in the Apalachicola River during dry times can expend a vast amount of water. In 2007, augmentation by the Corps to maintain a 5,000 cfs minimum resulted in a loss of roughly 850,000 acre-feet of storage throughout the ACF system. The Corps' operating plans should always maintain the ability to reduce flow below 5,000 cfs during serious and prolonged droughts.

Another concern with the RIOP relates to the flows required during the spawning season of the Gulf sturgeon. Under the RIOP, from March through May, when Composite Storage is in Zones 1 and 2, the Corps would be unable to store water in the system until Basin Inflow exceeds 16,000 cfs. Based upon the best scientific and technical information of which we are aware, maintaining a flow of 16,000 cfs, when water otherwise might be added to composite storage for use in the drier parts of the year, appears to be unnecessary and wasteful. There is no evidence showing that the success of Gulf sturgeon spawning varies according to the amount of spawning habitat below Jim Woodruff Dam. Even if there were, there is no evidence to suggest that the amount of habitat inundated at a flow of 16,000 cfs is optimal or even preferable to lower flows. The Corps should consider the best available science and data in devising a flow regiment that will

both benefit the Gulf sturgeon and provide adequate opportunities to increase storage in the ACF system.

As an alternative to merely focusing on minimum flows, that Corps should also consider other options for improving the habitat of endangered species in the Apalachicola River and Bay. One particular concern has been the inundation of floodplains along the river. Scientific research has made clear that reduced floodplain inundation has been caused more by channel degradation than by any reductions in the quantity of flow in the river. The U.S. Geological Survey ("USGS") has documented the effect of channel degradation in the Apalachicola River, which has substantially lowered the bed of the river in key places. As a result of the lowering of the channel, it now takes much more water to achieve any given river stage. Therefore, to improve habitat conditions for endangered species in the Apalachicola River, the Corps should consider options for repairing and reversing channel degradation in the river.

Another factor to be considered in improving species habitat on the Apalachicola River is the Chipola Cut-off. The Chicpola Cut-off is a man-made cut-off from the Apalachicola River that has resulted in large diversions (at least 25 - 34%) of the flow of the main stem of the river. This diversion plays a role in the dewatering of various sloughs and side channels that may support endangered mussel species. To improve this aspect of habitat for endangered species, the Corps should consider halting or limiting the current diversion of fresh water caused by the Chipola Cutoff.

The buildup of sediment in the Apalachicola River also contributes to the dewatering of habitat areas such as Swift Slough. Sedimentation can result in the raising of sills over which water must rise to inundate those areas. The Corps should explore ways to remove sediment from the head of affected areas such as Swift Slough so that those areas receive water during lower flow periods.

Various stakeholders in Florida have also expressed concerns related to salinity in the Apalachicola Bay. As with the habitat concerns discussed above, river flow is only one contributor to potential salinity issues in the bay. There are many other natural and man-made contributors. The Corps should not consider releases from storage in the ACF system as a viable measure for significantly affecting the salinity of the Bay. The Corps should consider other options for altering man-made contributors to the salinity of the Bay. As one example, the

Corps should study ways to solve problems created by Sikes Cut in St. George 0037
Island, which is a major contributor to salinity in the bay.

C. Modeling

Representatives from the Corps have indicated that the Corps intends to use the HEC-ResSim modeling platform to evaluate operations and alternatives for its projects in the ACF River Basin as part of the WCM update process. The HEC-ResSim model will replace the use of the HEC-5 model for the ACF system. The Corps developed the HEC-5 model as part of the now-defunct ACF Compact negotiations between the States of Georgia, Florida, and Alabama. During the Compact process, stakeholders within the three states worked with the Corps and reached agreement on the inherent assumptions within the HEC-5 Existing Conditions Model.

Modeling experts with the Georgia Environmental Protection Division ("EPD") have reviewed the HEC-ResSim model for the ACF Basins and noted several instances in which the HEC-ResSim model is inconsistent with the established and agreed upon assumptions of the HEC-5 Existing Conditions Model. There are also examples of apparent errors in the HEC-ResSim model. Prior to employing the HEC-ResSim model to evaluate operations to the WCM, the Corps should first provide an explanation for these discrepancies and correct apparent errors, which are discussed briefly below.

The most significant issue related to the Corps' HEC-ResSim model for the ACF Basin is that the HEC-ResSim model places certain water withdrawal and wastewater discharge points in the wrong location along the Chattahoochee River. As a result, the HEC-ResSim model underestimates the release from Lake Lanier necessary to meet the 750 cfs minimum flow requirement on the Chattahoochee River at Peachtree Creek. The current HEC-ResSim model has the City of Atlanta's water intake located below Peachtree Creek, when that intake is actually just above Peachtree Creek. Similarly, the model indicates that two wastewater returns from the Cobb County/Marietta Water Authority are above Peachtree Creek when they are actually below that point. Because of these errors, the HEC-ResSim model's predicted flow in the Chattahoochee River at Peachtree Creek is greater than what would actually occur. Therefore, the predicted release from Lake Lanier necessary to meet the 750 cfs flow requirement at Peachtree Creek is less that what is actually needed. Because the Corps will need to release more water

from Lake Lanier than what is predicted by the model, the actual elevation of Lake 0037
Lanier under a given set of conditions will be lower than what is predicted by the HEC-ResSim model.

There also appear to be discrepancies between the HEC-5 and HEC-ResSim models regarding certain physical characteristics of some of the projects in the ACF Basin that are operated by Georgia Power. As an example, for the Barletts Ferry project, there is a discrepancy between the amount of storage available in the project at particular elevations. At an elevation of 510 feet, the storage used in the HEC-5 model is 3,500 acre-feet less that the storage used in the HEC-ResSim model.

At the Morgan Falls, Walter F. George, and Jim Woodruff projects, the two models differ as to what tailwater elevation will result from a given release. The tailwater elevation determines the generation head available at that project.

III. Conclusion

Please give the foregoing comments careful consideration in scoping the EIS. Please contact me if you have any questions or if I can be a resource for additional information that would assist you in this process.

Respectfully Submitted,

Carol A. Couch
Director, Georgia EPD

House of Representatives

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INSURANCE
REGULATED INDUSTRIES

June 2, 2008

Col. Byron Jorns, Commanding
U. S. Army Corps of Engineers
Mobile District
109 St. Joseph St.
Mobile, AL 36602

RE: Environmental Justice – West Point Lake Project

Dear Col. Jorns:

I am writing to you today as the Founding President of the 100 Black Men of West Georgia. The 100 Black Men of West Georgia is a 501(c)3 non profit organization whose mission is "to provide quality experiences for youth in order to develop good moral values, ethical values and a positive attitude towards the educational process."

We are aware that the Mobile District of the U. S. Army Corps of Engineers (USACE Mobile) has been actively engaged in various environmental review processes and a proposed Environmental Impact Statement for the Apalachicola- Chattahoochee- Flint (ACF) River basin. Of specific concern to our organization are those actions taken by USACE Mobile that relate to operations at West Point Lake, a federal project under your command.

As you know Executive Order 12898 addresses the issue of Environmental Justice for minority and low income populations as a result of a proposed federal action. Any decision by the Corps of Engineers to modify operations is of particular concern to our organization. Actions which result in lower elevations of West Point Lake represent a potential or threat of denial of access to recreational resources for minority and low income populations in the West Georgia and East Alabama area.

In addition, Section 4-4 of E.O. 12898 provides that any actions by your Agency that could impact "consistent consumption of fish and wildlife" must be considered with any Federal action.

As you are aware, the West Point Lake Project was the first Corps project to carry a specific authorization by the United States Congress to provide for recreational purposes as well as sport fishing and wildlife development. What you may not be aware of is the large numbers of minority and lower income persons that reside in the vicinity of West Point Lake in west Georgia and east Alabama that are directly affected by the Corps' operations at the West Point Project. When the lake was built, a significant amount of the shoreline was

reserved and set aside for use for recreational activities for picnicking, camping, swimming and fishing. Each of these elements has been severely impacted by the Corps' continued maintenance of low lake elevations at the project since its inception.

The framework for our concern regarding environmental justice lies in the foundational issue of "environmental policy and civil rights" outlined by the EPA in 2004. The executive order anticipated that peoples of all races, colors and income levels are treated fairly with respect to development and enforcement of protective environmental laws and policy. It also anticipated that potentially affected communities would be "meaningfully involved in the decisions that affect their environment and health."

It has been observed that many of the environmental assessments undertaken by your office thus far that incorporate consideration of actions relative to operations at the West Point project have acknowledged the responsibility of USACE Mobile to comply with E.O.12898. What we question is the magnitude of study, and the management of the project in such a manner that would assure a minimal impact on populations as a result of decisions made by USACE Mobile.

West Point Lake is a prime recreational fish and fishery resource for all segments of the population surrounding the reservoir. However, due to its proximity and use of access, the lake provides substantial and in most cases the only opportunity for outdoor recreation such as picnicking, swimming, fishing, hiking and camping to the segment of the society surrounding West Point Lake that falls within a definition of minority and low income populations. You are also aware that West Point Lake was assigned a cost allocation of 44.3% of its allocated investment to recreation and sport fishing and wildlife development. This represents the highest cost allocated to any of the Congressional purposes authorized for the lake. But at the same time, the Corps of Engineers has consistently utilized West Point Lake "as it's workhorse" to provide for other demands throughout the river basin, while ignoring the original authorized purpose of recreation, and the needs and expectations of minority and lower income households in west Georgia and east Alabama area.

Our non-profit has a lease on 31 acres with a one an one/half mile of shoreline on Lake West Point with anticipation of providing camping, day and night retreat activities for our inner city youth to achieve our mission. Although, we are still in the planning stage, our potential is hampered by the uncertainty of lake level.

The Corps of Engineers is required to identify disproportionately high and adverse human health and environmental affects on minority and low income populations, to coordinate research and data collection, to conduct public meetings, and to develop inter-agency model projects with regards to the matter of environmental justice.

We ask that the Corps reconsider and more fully address the impacts that have resulted thus far under the Interim Operating Plan (IOP) established for the ACF basin that has so detrimentally impacted water elevations especially during late summer (2006 and 2007) on West Point Lake. We further ask that the project be managed in such a way to assure a viable and usable winter and summer pool elevation that more closely approximates and assures use of the lake at the initial recreational impact level of 632.5 MSL.

Col. Byron Jorns, Commanding
June 2, 2008

As your office begins its processes associated with conducting in a new Environment Impact Statement for the new Water Control Plan for the ACF basin, we respectfully request that your office engage far more intensely and with a great deal more thoroughness in addressing Environmental Justice issues at West Point Lake than it has in the past. We further ask that this letter be incorporated in the all subsequent environmental review processes that may be undertaken by your office that may have an impact on the West Point Project and that this letter be retained as part of the Environmental Record for the ACF basin Water Control Plan EIS.

We stand ready to work with you as you pursue the matter of environmental justice and improvements to West Point Lake project elevations and operations. Please don't hesitate to contact us in regards to this matter.

Sincerely,

Carl Von Epps

Carl Von Epps
Founding President
100 Black Men
West Georgia Chapter

cc: Lynn Westmoreland, Representative, U. S. Congress
Senator Johnny Isakson, U. S. Senate
Senator Saxby Chambliss, U. S. Senate
Randy Nix, Georgia House of Representatives
Mayor and City Council, City of LaGrange
Troup County Board of Commissioners
Brian Zettle, Inland Environmental Team, USACE, Mobile
Jeff Brown, West Point Lake Advisory Committee, LaGrange Chamber of Commerce
Dick Timmerberg, West Point Lake Coalition
Joe Maltese, Assistant to City Manager, City of LaGrange
Sally Bethea, Upper Chattahoochee River Keeper
Gil Rogers, Southeast Environmental Law Center

US Army Corps of Engineers®
Mobile District

ACF Water Control Manual Update

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- o *Nongovernmental Organization*
- o *Academic Institution*
- o *Local Gov't Agency*
- o *State Gov't Agency*
- o *Federal Gov't Agency*
- o *Other* _____

Please Check a Comment Area:

- o *ACF Basin*
- o *Blackshear Dam and Lake*
- o *Flint River Dam and Lake*

Water Control Manual Update

- o *Lake Sidney Lanier/Buford Dam*
- o *Morgan Falls Dam*
- o *West Point Lake and Dam*
- o *Goat Rock Dam*
- o *Oliver Dam*
- o *North Highlands Dam*
- o *Bartlett's Ferry Dam & Harding Lake*
- o *Walter F. George Lake & Dam*
- o *George W. Andrews Lake & Dam*
- o *Lake Seminole/Jim Woodruff Dam*

Environmental Resources

- o *Biological Resources*
- o *Air Quality*
- o *Cultural Resources*

Water Management for Multiple Federal Project Purposes

- o *Action Zones*
- o *Drought Operations Management*
- o *Hydropower*
- o *Navigation*
- o *Recreation*
- o *Flood Damage Reduction*
- o *Water Quality*
- o *Water Supply*

NEPA Process

- o *Alternatives*
- o *Baseline*
- o *Impacts Analysis*
- o *Public Involvement*

- o ***Shoreline Management***
- o ***Revised Interim Operations Plan***
- o ***Socioeconomics***
- o ***Recommended Modeling Tools and Data Source***
- o ***Other*** _____

Comments

_____
_____
_____
_____
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_____

www.acf-wcm.com

Scoping comments will be collected by Tetra Tech for the U.S. Army Corps of Engineers, Mobile District through November 21, 2008.

CHATTAHOOCHEE HEALTH RESOURCES

November 19, 2008

RECEIVED 11/20/08

US Army Corps of Engineers, Mobile District
107 Saint Francis Street, Suite 1403
Mobile, Alabama 36602-9986

RE: Apalachicola-Chattahoochee-Flint River Basin (ACF) Water Control Manual (WCM) Update – Lake Sidney Lanier Buford Dam

To Whom It May Concern:

Over the July 4th, 2008 weekend, four individuals drowned in Lake Lanier directly due to the extremely low water. Others have drowned since then. There are a large number of individuals who use the Lake who have asked the question, *'How many individuals must drown each year due to Lake Lanier being drained below a level of 1060 to 1065 feet above mean sea level for the sole purpose of allowing Florida to have enough water for real estate developments, their fishing industry and mussel population protection?'*

Not only are lives being lost on the most utilized Corps of Engineers Lake in the country, but the $5.5 billion economy surrounding the Lake is suffering more than the economy of any other region in the Apalachicola-Chattahoochee-Flint River Basin (ACF). To save lives, which are being needlessly lost, and to approve the quantity and quality of water in Lake Lanier, the Corps should accomplish the following:

1. Develop an economic study on the impact of various water levels on each region of the ACF within the next eighteen (18) months.

2. During the rainy season, have Lake Lanier reach full pool no later than June 1st each year.

3. Since Lake Lanier is the primary water storage reservoir for the ACF, a process must be developed that would enable Lake Lanier to refill to normal pool at the same time or before the other lakes in the River Basin.

4. No official written documentation exists that targets Lake Lanier as a source of water for the protection of mussels and other endangered species in the ACF; therefore, do not even consider drawing Lake Lanier down for this purpose.

4775 FOWLER DRIVE
CUMMING, GEORGIA 30041
(770) 844-7574 FAX: (770) 844-7556
EMAIL: PAULMFLOOD@YAHOO.COM

5. The Corps of Engineers should develop guidelines and put into place management 'triggers' for Lake Lanier withdrawals during times of drought which insures that the economy and water levels of the Lake Lanier area are not more adversely impacted than other areas within the ACF.

6. Raise Lake Lanier's full pool level from 1071 feet to 1073 feet above sea level as soon as natural rainfall is sufficient to do so, which will add an additional 26 billion gallons of water to the Lake. I understand that this is more water than Lake Apalachicola has at full pool! Since Lake Lanier has been as high as 1077 feet in the past (without any long-term adverse effects), the Lake should be filled to 1073 feet as soon as possible. The proposed Corps study can be completed when the Corps has time to finish it, and the conclusions can be implemented at that time after the Lake has been filled.

7. Over the next ten to twenty years, the Southeastern United States will continue to grow economically and in population; particularly in Georgia, Florida and Alabama. Greater Atlanta alone is projected to grow from 5.5 million to over 7.5 million within the next ten to fifteen years. This is an increase of over 35%! There is a simple solution to insure that the water needs of all regions of the ACF are met. This includes Atlanta, the agricultural interests in South Georgia and Alabama, the real estate and fishing industries in Florida, as well as a the economic development of North Georgia. ***Keep Lake Lanier full at all times!***

The solution? There are trillions of gallons of water within the boundaries of the State of Georgia. This water is better known as the Atlantic Ocean! The concept is simple – run a water pipe from Savannah to Gainesville and Lake Lanier along the right-of-way of Interstate 20 and Interstate 85. Build a nuclear power plant near Savannah to desalinate the sea water, and then pump the desalinated water from the Atlantic to Lake Lanier to keep it full at all times.

The Corps could sponsor a feasibility study to determine construction and annual operating costs of such a system. The City of Tampa, Florida could assist in determining the cost of a conventional desalinization plant, and the Southern Company could provide input into a nuclear-powered energy/desalinization plant. Colonial Pipeline could aid in determining the cost of constructing and maintaining the pipeline, as they have built oil and gas pipelines from Texas and Oklahoma to New England.

The development and construction costs may be $2 billion to $10 billion dollars. However, this one-time cost may be relatively inexpensive compared to the annual cost of not doing it; particularly if one considers that the lack of an

adequate water supply could hinder Atlanta growth by a whopping 50% in the next ten to fifteen years or longer! Based upon projections of an increase of **two million people** in the relative near future, this equates to lost growth of **one million people**.

The economic impact on the Gross Domestic Product (GDP) of Atlanta could be almost totally disastrous, if you consider that 50% of the potential one-million people lost in population growth contributes to the working population of Atlanta; the others are spouses and children. The one-half million workers moving to the Atlanta would be coming here to take advantage of the many high-tech, research and development, marketing and manufacturing opportunities. These jobs could pay $60,000 or more per year, resulting in annual labor costs of $30 billion (500,000 X $60,000 per year). **If labor costs are fifty percent of the goods and services produced, the annual Atlanta GDP lost is *$60 billion each year!***

As previously indicated, the economic consequences of not having a full and clean Lake Lanier can be disastrous on Atlanta, North Georgia and the Southeastern United States. Therefore, it is vitally important the Corps of Engineers coordinate, develop and implement a plan in the immediate future to keep Lake Lanier full and clean on a year-round basis.

I am a Board member of the Lake Lanier Association and Chairman of the Strategic Planning Committee. Although I am not speaking for the Association in this letter, I know that LLA is more than happy to work with the Corps on this important endeavor.

Respectfully submitted,

Paul M. Flood, CHC, CMC
Chairman

cc: Brigadier General Joseph Schroedel, Commander and Division Engineer
US Army Corps of Engineers, South Atlantic Division
Colonel Bryon G. Jorns, District Commander
US Army Corps of Engineers, Mobile District
Jackie Joseph, President, Lake Lanier Association
Val Perry, Executive Vice President, Lake Lanier Association

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230 E.E. Butler Parkway
Post Office Box 374
Gainesville, Georgia 30503

October 28, 2008

Colonel Byron G. Jorns, District Commander
Department of the Army
Mobile District, U.S. Army Corps of Engineers
ATTN: CESAM-DE
Post Office Box 2288
Mobile, Alabama 36628-0001

Dear Colonel Jorns:

The Greater Hall Chamber of Commerce and its 3000 business and citizen members are very concerned about the present condition of Lake Sidney Lanier....and the health and viability of Lake Lanier in the future.

Gainesville / Hall County, Georgia, USA...has been fortunate to have Lake Lanier in its "back yard" for over 50 years....over 400 miles of its shoreline border this county. We are proud to have Lake Lanier as a recreational resource, water resource, power generator....plus a beautiful home setting. Lake Lanier is by far the most important economic engine for this county and this region. Of course, it is also important to the entire State of Georgia and our neighboring states. We certainly understand that we must share Lake Lanier's waters.

The U.S. Army Corps of Engineers must update the water control manuals for the ACF Basin .....including studies of science, technology and economic impacts.... with the most up-to-date factual information examining new and different ways of operating Lake Lanier and the other Corps projects in the ACF Basin. We must bring the operations of our water resources to the twenty-first century.

Yes, we are still experiencing a drought. Yes, the local, state and national economy is suffering. Yes, we are seeing extreme fuel price fluctuation. These reasons stated are putting added pressure on Lake Lanier and its economic importance to this county and region. Today, Lake Lanier is more than

770.532.6206
Fax 770.535.8419

www.greaterhallchamber.com
www.siliconlakelanier.com

"From Islands to Highlands...
We've Got It All!"

Colonel Byron G. Jorns, District Commander
October 29, 2008
Page 2.

18 feet below full pool and dropping at a rapid rate. Businesses and citizens are suffering because Lake Lanier's waters are at record low levels. A large part of Lake Lanier is unsafe for use. The visitors to Lake Lanier are down over 1,000,000 from 2007. We are seeing other states use Lake Lanier's low levels as a tool to recruit businesses from the state of Georgia.

The U.S. Army Corps of Engineers can help.....by better management of Lake Lanier and the ACF, particularly during drought times.

Thank you and the Corps for partnering with the Gainesville / Hall County community in protecting and enhancing Lake Lanier.

Sincerely,

R.K. Whitehead
Whitehead Die Casting
Chairman of the Board

Emily Bagwell
Whelchel, Dunlap, Jarrard & Walker
Chair Elect

Denise Deal
Executive Director
VISION 2030

Kathryn L. Dunlap
President & CEO

October 28, 2008

Colonel Byron G. Jorns, District Commander
Department of the Army
Mobile District, U.S. Army Corps of Engineers
ATTN: CESAM-DE
Post Office Box 2288
Mobile, Alabama 36628-0001

Dear Colonel Jorns:

Thank you for the opportunity to provide comments on this crucial step of updating the Corps' water control manuals for the ACF Basin. The health and sustainability of Lake Lanier as a water supply source for over three million people is extremely important. We hope that the Corps will take this opportunity to truly update the water control manuals used to operate each of the Corps projects in the ACF and not just replicate the existing operations that have caused concern over the sustainability of Lake Lanier. The Corps must consider alternative operating plans to balance water supply needs and economic impact with downstream needs before adopting a new Water Control Plan. These alternative operating plans should be developed to manage the ACF Basin much more effectively and should be based on facts and sound science.

As a part of this project the Corps should consider the water supply needs of the region as identified in the Metropolitan North Georgia Water Planning District's long range plans. Water use in the metropolitan area is reasonable by any measure. The net amount of water withdrawn for water supply from Lake Lanier and the river downstream of the dam accounts for 1% of the flows at the Florida line in normal years, 2% in drought years. We believe there is enough water in the ACF Basin to meet all reasonable needs if the reservoirs are managed properly.

Lake Lanier's recreational value should also be an important consideration for the Corps during this update process. Lake Lanier receives approximately eight million visits per year resulting in an economic impact of $5.5 billion annually.

Thank you again for allowing me to submit comments. Please do not hesitate to call if you have any questions or if I can be of assistance to you in any way.

Sincerely,

Kathryn L. Dunlap
Chair, Metropolitan North Georgia Water Planning District

40 Courtland Street, NE ♦ Atlanta, Georgia 30303-2538
Telephone: (404) 463-3100 ♦ Facsimile (404) 463-3254

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TOM OLIVER
CHAIRMAN

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STEVE GAILEY, DISTRICT 3
DEBORAH K. MACK, DISTRICT 4

November 19, 2008

U.S. Army Corp of Engineers, Mobile District
107 St. Frances Street, Suite 1403
Mobile, Alabama 36602-9986

RE: ACF Water Control Manual Update & Environmental Impact Statement-Chattahoochee-Flint River Basin

To Whom it May Concern:

The Hall County, Georgia Board of Commissioners is keenly interested in the outcome of the Army Corp of Engineers work to revise their ACF Water Control Manual. We understand that this manual will have a significant effect on the Chattahoochee River Basin and Lake Lanier in Georgia. Listed below are a few points that the Hall County Commission would like for the Corp of Engineers to consider as they revise the Water Control Manual:

1. During the rainy season we would recommend the Corps of Engineers allow Lake Lanier to reach full pool no later than June 1st of each year;

2. Lake Lanier should not be drawn down for the protection of rare mussels or other endangered species in the Apalachicola River; it is disingenuous of those promoting this rationale for drawing down lake levels in Georgia to hide behind the Endangered Species Act. A single dry season is highly unlikely to wipe out species which have survived many hundreds of thousands of years without the benefit of flood control dams along the Apalachicola, Chattahoochee and Flint River Basins. It leads one to believe that the real issue is the economic value of the Florida oyster harvest;

3. Management triggers should be in place for Lake Lanier withdrawal during times of drought. The Corps should limit withdrawals during a drought from Lake Lanier to be no greater than a release which is necessary to provide a flow of 750 cubic feet per second past the sewage discharge from the city of Atlanta into the Chattahoochee River;

4. We recommend that the Corp of Engineers seriously study and consider the effects of raising Lake Lanier's full pool level from 1,071 feet above sea level to 1,073 feet above sea level thereby adding an additional 26 billion gallons of water to Lake Lanier.

If needed we would be happy to provide additional comments or participate in any discussion that the Corp is willing to entertain on the protection of Lake Lanier.

Sincerely,

Tom Oliver
Chairman, Hall County Commission

Cc: Hall County Board of Commissioners
Charley Nix, County Administrator
Jonathan Davis, Army Corp of Engineers

November 13, 2008

US Army Corps of Engineers:

Respectfully submitted are suggestions contributed by Florida State University's River Basin Management class to the updated Water Management Plan manual. The intent of this letter is to constructively contribute to the process. Our effort is aggregate and represents the interests of all the students.

The River Basin Management course provides extensive training in river basin management and planning through providing a foundation of understanding of river basins as a system from a biological, hydrological and geopolitical basis. A special emphasis of this course is focused on the Apalachicola-Chattahoochee-Flint basin. We are knowledgeable of the technical tools and concepts used to understand and manage river basins from a system wide context including negotiation and math simulation tools. It is our understanding that the balance between human use and ecosystem protection is difficult to achieve, but this must be of primary consideration.

The River Basin Management course of Florida State University submits the following:

We recommend that the following suggestions are incorporated into the manual:

1) Define the parameters of successful reservoir management.

*If this includes the use of a baseline, the Corps must define and justify the baseline chosen. Baseline should be protective of the ecological integrity of the Apalachicola River and estuary.

2) Prioritize reservoir purposes during extreme drought events.

*The Reservoir Management document states: "The principal purposes for which the Federal projects in the ACF basin are operated include: fish and wildlife management, flood control, hydropower, commercial-navigation, reservoir-based recreation, water supply and water quality."

*The protection of the wildlife must be of most importance during extreme droughts. Recreation and navigation may be suspended; environmental impacts and harm to endangered species may be irreversible.

*Only allow for special releases/retentions and specific accommodations for recreation once it has been determined that all other higher priority functions will not suffer or be affected under those specific flow circumstances

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3) Evaluate the reservoir zone levels consistent with current and future conditions and modify if necessary (conservation pool, zone 1, 2, etc.).

4) Revise the reservoir release trigger.

*The manual needs to deal with the issue of increasing withdrawals in the upper basin and how they affect downstream interests. The current trigger is based on net basin inflow and does not account for affects of increased consumptive withdrawals on downstream interests. The trigger should consider both net inflow and water lost to consumption. The plan should be revised so that increased consumption translates into lower reservoir levels instead of lower releases.

5) The Corps should incorporate the SOP and the IOP/EOP in the new Water Control Manual to ensure consistency in management in the absence of a specific allocation formula.

6) Include research and experimentation to encourage species habitat connectivity. Acknowledge that reservoirs fragment the basin by blocking passage for anadromous fish.

7) Address the potential impact of increased municipal and agricultural withdrawals for the future management of the reservoirs.

8) The "balancing" of the reservoirs in the ACF Basin needs to be defined and should be equitable.

We recommend that the following suggestions are used to guide the process of creating and updating the manual:

1) Incorporate stakeholder participation.

*Initially, hold a joint meeting with all stakeholders to discuss findings of scoping process. All interests should be represented.

*At public meetings involve third party mediator

2) Incorporate adaptive management.

*Regularly review the Water Control Plan. (every 2 years?)

*Incorporate ongoing court decisions and state negotiations into the Manual.

*Monitor and study the basin. Use research to evaluate whether the plan is meeting the metrics of what is acceptable.

*Issue periodic reports on how well the Corps is meeting the intent of the process.

*If the Manual does not meet its intended purpose, the Corps should assess why and report to the public.

3) The Water Control Plan must be viewed as a set of guidelines to help clarify the day-to-day regulation of the ACF river basin.

Public participation is a necessary component of responsible basin management, and we are grateful for the opportunity to have our voices heard. Please advise if additional explanation or participation is appropriate.

Sincerely,

Students of River Basin Management
The Department of Urban and Regional Planning
Florida State University

EJF05C@FSU.EDU

Steve Leitman
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November 20, 2008

Colonel Byron Jorns
District Engineer
U.S. Army Corps of Engineers, Mobile District:

Colonel Jorns,

I would like to commend the Corps of Engineers for dealing with the ongoing problem of updating the Apalachicola-Chattahoochee-Flint (ACF) basin's reservoir system management guidelines in the midst of the ongoing, long-term political/legal storm which has characterized this basin for too many years. Solving this part of the problem might narrow the differences among the three States and the Federal government. In submitting these comments it is my understanding that the comments being solicited at this time are solely for the scope of the Manual update process, not for the conclusions of such an evaluation, nor for problems in the basin which are outside the scope of the management of the federal storage reservoirs. I also appreciate that the Water Control Manuals that are ultimately developed through this process should not overly constrain the Corps of Engineers and that water managers need some degree of flexibility to react to the conditions in the basin.

Since the focus is on process at this time, I would like to state that it is important for the Corps of Engineers to develop a rational and understandable process for this update of the Water Control Plan. The Corps needs to clearly define exactly what criteria will be used to distinguish between an acceptable alternative approach and an unacceptable alternative and what metrics will be used to measure these criteria. And, these criteria and metrics need to be transparent, understood and accepted by the public. At a minimum, the safe yield for various reaches of the basin needs to be defined. Examples of other criteria could include defining the rule curve and top of flood pool for each of the storage reservoirs and management policies regarding storing water in the flood pool. Similarly, the Manual should define what are acceptable flows in the Apalachicola River not only in terms of magnitude of flow, but also duration of low flow events, frequency of low flow events, rates of change of flow and time of year of flow events. Defining the criteria for evaluating alternative approaches and the metrics to measure these criteria should be one of the first steps taken by the Corps in developing the Manual.

An important part of defining the criteria for the Water Control Manual will be defining the environmentally sustainable flows for the Apalachicola River. There must be a link between acceptable flows and the ecological health of Apalachicola River and its estuary. Unfortunately, this number cannot be defined simply by looking it up in a book or using the recommendation of an individual expert. I would suggest instituting a process similar to what was done on the Savannah River and to work with the Nature Conservancy's environmentally sustainable flows program.

I recognize that my comments should focus on what is within the Corps' authority to control. However, the issue of depletions from consumptive withdrawals raises an interesting paradox. Although the Corps does not necessarily have authority over water consumption in the basin, water depletions do affect the management of the ACF reservoir system. The current Revised Interim Operating Procedure uses "local inflow" as a trigger to define reservoir releases during extreme low flow events. The local inflow trigger is a net local inflow trigger, not gross. My concern with this approach is that net local inflow not only accounts for streamflow into the reservoir, but also includes consumptive depletions and evaporation from the reservoirs. Consequently, if consumptive demands and/or evaporation increase substantially in the future, this will decrease the local inflow and the response of RIOP is to lower releases when certain prescribed thresholds are exceeded. Therefore, the RIOP operational guidelines provide no incentive for upstream interests to conserve water or constrain their consumptive demands. If additional water supply reservoirs are built and this results in increased evaporative losses, the decline in local inflow will lead to the reduction in downstream flow. To develop equitable water management practices for all water users, the use of local inflows as a trigger for reservoir releases should be changed to a methodology that more accurately reflects depletions from the system and provides a mechanism for management actions that address reductions throughout the basin. Downstream interests should not be required to totally shoulder the burden of increased depletions by upstream interests. Quite simply, this is not equitable.

I have heard it stated by the District Engineer that the Corps of Engineers allocates storage space, not water in the storage space. Although I understand the subtle differences between space and water I have several questions relating to this distinction that I hope you can clarify for me in the process of updating the Water Control Manuals:

1) To begin, it is my understanding that space is allocated on a vertical plane, not on a horizontal plane, or in other words, the space is allocated so that a certain percentage of the conservation pool is available at all elevations in the storage pool. For example, if 15% of the conservation pool space at Lake Lanier is allocated to water supply then this allocation extends from the top of the pool at 1070/1071 NGVD to the bottom of the pool at 1035 NGVD. Is this correct? If not, how is storage space allocated?

2) How does the Corps of Engineers monitor compliance with allocated space for a given use? For example, how is it decided how much of the storage space for water supply has been allocated and when this allocation has reached its limit?

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3) Next, what happens once this limit is reached? Does the Corps of Engineers refuse further allocations of the storage pool for this purpose? Does this mean that if a community intended to make withdrawals which would exceed the storage space available for water supply that the Corps of Engineers would reject the request?

4) Finally, assuming that my understanding of how space is allocated is correct, why are municipalities allowed to install water intake structures which are above the bottom of the conservation pool?

Another important task which should be included in the Water Control Manual update is an assessment of required federal flow commitments under current statues and regulations. For some reason this was never done as part of the ACF Compact and Allocation Formula discussions and studies.

In addition some questions which should be examined during the update process concerning the reservoirs include:

- What are the tradeoffs of revising the rule curve at any of the storage projects between increasing the volume of the storage pool and increasing the flood risk and would such changes be advisable?
- Are the current zone elevations at the reservoirs optimal or should they be revised? Current zone elevations should not be considered sacrosanct, but should be evaluated.
- What metrics should be used to define various stages of entering into and out of drought and flood periods and how should release rules change during these hydrologically distinctive periods.
- How will the three principal storage reservoirs be balanced?
- Multiple levels of channel availability for the federal navigation project should be considered. Historically, the project has been approached on all-or-nothing basis. Either we have full channel availability or no channel at all. The examination of releases to support a seasonal navigation project which would have very little or no dredging should be investigated as part of the Water Control Manual update.

It is my expectation that alternative approaches in the Water Control Manual updates will be evaluated using existing water modeling platforms such as HEC-RESSIM. In running such water management models I would suggest a careful revisiting and scrutinizing of input data used in these models. Specifically I am speaking to the demand data set. For example, there are multiple sets of agricultural demands effects on streamflow in the Flint River ranging from the demand set developed during the Comprehensive Study and the development of the unimpaired flow data set to more recently developed data sets for the USGS groundwater modeling effort. There has also been considerable work done in

defining the acreage and use rates for agricultural irrigation. Effort must be expended to assure that the most accurate and current data is used in modeling associated with the Water Control Manual updates rather than assuming than past data is accurate or that the accurate data can be obtained simply by asking the three states for data sets.

Finally, considering the contentiousness of the water management situation in the ACF basin I would suggest that the Corps involve an outside technical peer review group to assure that the best data, information and approach are fed into the process and that an aura of objectivity is cast over the process. I would recommend consideration of using the National Research Council in this role.

I appreciate this opportunity to comment on the scope and look forward to working with the Corps on the updating of the ACF Water Control Manuals. This action is long overdue.

Steve Leitman

Steve

United States Department of the Interior

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November 21, 2008

Col. Byron Jorns, District Engineer
U.S. Army Engineer District, Mobile
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Col. Jorns:

The U.S. Fish and Wildlife Service (Service) is responding to your September 19, 2008, notice (73 FR 54391) soliciting scoping comments about updating the Master Water Control Manual (WCM) for the Corps' reservoir projects in the Apalachicola-Chattahoochee-Flint (ACF) River Basin of Alabama, Florida, and Georgia. We submit the following comments to assist you in identifying the resources and framing the operational alternatives that you will consider in the draft Environmental Impact Statement (EIS) for this action. These comments represent input from our Alabama, Florida, and Georgia Ecological Services Field Offices. Our authority to comment on this action derives from the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq).

It is our understanding that the WCM will specify the storage and release schedules for all five projects in the ACF system of federal dams and reservoirs: Buford Dam/Lake Lanier, West Point Dam/West Point Lake, Walter F. George Dam/Lake Eufaula, George W. Andrews Lock and Dam, and Jim Woodruff Lock and Dam/Lake Seminole. The WCM serves as the primary policy and guidance document for the Corps' water management decisions in the basin, including decisions necessitated during times of flood and drought.

We have reviewed the notice announcing the intent to prepare an EIS (73 FR 9780), the notice announcing the public scoping meetings (73 FR 54391), and the various materials pertaining to the update that are posted on the Mobile District's website. Several Service personnel attended the public scoping meetings. The proposed action is consistently labeled as an "update" of the WCM, but the nature of the update, i.e., how it may depart from current operating rules, is not yet specified. During a conference call with federal agencies on October 9, 2008, the Corps' EIS contractor said that the update would not consider changes in operations that would require changes in Congressional authorizations for the projects or a re-allocation of reservoir storage. While this statement defines a general boundary in principle for the scope of the update, it does

not reveal which water management variables are subject to change and to what degree. The relationship between current operating rules and Congressional authorizations is not documented in the materials that have been made publicly available for this scoping process.

Therefore, our first scoping comment is to request a summary of the current operating rules for each project, an explanation of their basis in Congressionally authorized purposes, and a description of how much discretion the Corps has to change the rules. We recommend posting such a summary on the District's website for use by other agencies and the public early in the WCM update work schedule. At minimum, the summary should list storage amounts, if any, that are allocated to, and releases that are designated for, the various authorized purposes at each project with appropriate documentation and narrative explanation. For example, the current rule curve for West Point implies an amount of storage available for flood control for several months a year. For other project purposes, the Corps operates the system using the multiple zone rule curves and makes discretionary releases for purposes of navigation, hydropower, water quality, infrastructure, and protected species. The balancing of the discretionary releases is not always clear to the outsider. Compiling information on storage allocations and discretionary uses of storage allows the public to consider whether any other way of operating for the flood control purpose would be consistent with the Congressional authorization. Without such information, the logic of the current operating rules is not apparent to the public, which makes meaningful participation in the scoping process more difficult. We believe that disseminating such information will also serve to diffuse the controversy that has so frequently visited ACF water management issues in recent years.

We make this very general request because we suspect that considerable enhancements are possible for fish and wildlife resources, in both the river and reservoir environments. Such enhancements may be possible with modest changes in storage and release rules throughout the basin and not be inconsistent with project authorizations. The Service encourages the Corps to facilitate a comprehensive process for determining how ecological and social benefits could be increased by modifying the operations of the ACF federal dams. We recommend folding into the WCM update a thorough evaluation of project-related flow regime alterations and the potential benefits of restoring features of the pre-project flow regimes. The approach described by Richter and Thomas (2007) would be very useful for this WCM update.

The remainder of our comments are organized in two sections. The first identifies resources, and the second identifies alternatives, that we recommend to the Corps for special consideration in the process of updating the WCM.

Resources

Threatened and Endangered Species -- The ACF projects affect a large swath of aquatic habitat of fish and wildlife from the Blue Ridge to the Gulf of Mexico, a swath that supports one of the richest aquatic fauna in North America. The Corps is aware of the species and habitats protected under the ESA that are affected by ACF project operations. These species were the focus of our recent consultation for the Woodruff Dam Revised Interim Operating Plan (RIOP). The Corps should address the same ESA-protected resources for the WCM update as for the RIOP: the Gulf sturgeon (*Acipenser oxyrinchus desotoi*), Fat threeridge (*Amblema neislerii*), Chipola slabshell

(*Elliptio chipolaensis*), and Purple bankclimber mussel (*Elliptoideus sloatianus*), all of which have designated critical habitat within the action area. At this time, no species or critical habitats are proposed for protection under the ESA that occur within the action area. Since the WCM update process will span several years, we remind the Corps of the action agency's responsibility under the ESA Section 7 regulations to determine the effects of its proposed action on all listed, proposed, and candidate species and critical habitats that may be present in the action area. The Corps will need to revisit the list of threatened and endangered species periodically during the planning process and must verify the accuracy of its species/habitats list when the agency begins preparing a biological assessment. We encourage the Corps to visit our websites for current species lists and other information:

http://www.fws.gov/panamacity/
http://www.fws.gov/athens/
http://www.fws.gov/daphne/

We recommend that you include within the EIS a Biological Assessment of effects on these species and their designated critical habitats as required by the implementing regulations (50 CFR §402.12) for section 7 of the ESA. From our previous consultations with you on the releases from Woodruff Dam, your staff is already aware of the sources of information about listed species and their habitats in the action area, and also of the kinds of assessment methods that we consider most useful in evaluating potential changes in flows. Nevertheless, our staff biologists are available to assist you with developing appropriate content for the assessment. Likewise, we will coordinate with you a schedule for completing section 7 consultation in advance of your Record of Decision.

In addition, each of the three states maintains databases of rare and imperiled species that may receive protection under state laws. We encourage the Corps to contact the states directly and obtain current lists of resources of concern to the state fish and wildlife agencies that could be affected by project operations. Web addresses that provide contacts and resources information are:

Alabama:	http://www.outdooralabama.com/research-mgmt/6/
Florida:	http://myfwc.com/imperiledspecies/ http://www.fnai.org/
Georgia:	http://www.georgiawildlife.com/rareorendangeredspecies_conservation.aspx

Finally, because populations of several federally listed species were fragmented due to reservoir development, we encourage the Corps to participate with the Service and other federal and State agencies in efforts to locate and monitor extant populations in the remaining unimpounded portions of the Chattahoochee River and its tributaries. Historically, the purple bankclimber, shiny-rayed pocketbook (*Hamiota [Lampsilis] subangulata*), Gulf moccasinshell (*Medionidus penicillatus*), and oval pigtoe (*Pleurobema pyriforme*) were all found in the Chattahoochee River. Except for a single live bankclimber found in Goat Rock Reservoir, all are now extirpated from the mainstem, and isolated populations are known to persist in only three tributaries: Uchee Creek, Sawhatchee Creek, and Kirkland Creek.

National Wildlife Refuges -- A principal resource of interest to the Service is the Eufaula National Wildlife Refuge, which is associated with the W.F. George project. The refuge is managed for migrating and wintering waterfowl, nesting wood ducks, colonial nesting birds, neotropical migrant birds, and wood storks. Recently, the refuge has hosted some of the whooping cranes that belong to the newly established eastern flock, which migrates between nesting areas in Michigan and wintering areas in Florida. Many of the shorebirds and waterfowl species rely upon the mudflats, shallows, and backwater areas of the reservoir that are within the refuge; therefore, the manner in which reservoir levels are controlled is highly relevant to wildlife habitat conditions at this refuge. In addition, the refuge pumps water from the reservoir in the fall to flood croplands located in several off-reservoir impoundments. These impoundments may attract up to 75 percent of all waterfowl on the refuge, which number about 10,000-15,000 birds in most years. Filling these impoundments is dependent on a reservoir level greater than about 185 ft above mean sea level, which is the case in mid to late October in most, but not all years.

St. Vincent National Wildlife Refuge is an island among the chain of barrier islands that forms Apalachicola Bay. Although ACF project operations influence the bay by regulating fresh water inflow coming from the Alabama and Georgia portions of the basin, the resources of principal management concern on the refuge are not directly affected by this inflow. At this time, we have no specific resources associated with St. Vincent NWR that we request the Corps to consider in the WCM update or EIS.

Reservoir Fisheries -- Sport fisheries are important recreational and economic resources in all of the federal ACF reservoirs. Important sport fish in all five reservoirs are the largemouth bass and crappie, but each reservoir supports a mix of several additional species, including walleye (Lake Lanier only), striped bass, bluegill, spotted bass, redear sunfish, and others. Based on interviews of fisheries managers and researchers in the basin, Ryder et al. (1995) identified the species considered critical in an evaluation of operating alternatives and the relative acceptability of reservoir levels for these species. The Service cooperated with the Corps for the 1998 draft EIS for ACF water allocation to develop a reservoir fisheries performance measure using the findings of Ryder et al. (1995). We recommend that the Corps update this performance measure in light of any new information developed in the past 10 years, and use it to evaluate the relative impacts on reservoir sport fisheries of alternative operating plans.

Fish Passage – The Corps' ACF dams have impeded the migration of several migratory fish species for several decades, including the striped bass, Alabama shad, American eel, and Gulf sturgeon. It is possible that the Corps might operate the lock at Woodruff Dam in a manner that would facilitate fish passage at this downstream-most barrier in the basin. We recommend that the Corps continue to support and facilitate research on fish passage at Woodruff Dam, and other ACF federal dams as appropriate, with a goal of identifying and implementing operations that would allow riverine species to travel their historic migratory pathways. Such procedures should be incorporated in the WCM, as appropriate.

Water Quality -- We urge the Corps to closely examine the effects of reservoir operations on water quality in the WCM update, including ongoing and potential future effects to dissolved oxygen (DO), temperature, pH, conductivity, nutrient and organic material dynamics, and

various industrial and municipal discharges. In general terms, the Service is most concerned about low DO in project tailwaters and restoring a pattern of flow magnitude that over time emulates the seasonality, magnitude, frequency, duration, and rate of change of natural flows.

Low DO levels have been recorded by the Corps downstream of West Point Dam. According to monitoring data collected downstream of West Point Dam from 1999 through 2001, DO did not always exceed state standards during the monitoring periods. DO exceeded the Georgia State standard of 4 mg/L (instantaneous) for only about 35 percent of the monitoring period in 1999 (monitoring from 6/15-9/14), 30 percent of the monitoring period in 2000 (monitoring from 7/25-9/30), and 4 percent of the monitoring period in 2001 (monitoring from 6/8-10/5) (Georgia Power Company 2002). Low DO levels have been associated with minor fish and mussel kills downstream of W.F. George Dam as well (personal communication, Rob Weller, GA DNR, 11/14/2008). We recommend that the Corps make a concerted effort through this WCM update to determine how to ensure that its releases from all five ACF dams meet or exceed DO and other applicable water quality standards.

Invasive Aquatic Plants – Noxious growths of various exotic species, such as hydrilla and Eurasian milfoil, have become a constant management concern at the ACF federal reservoirs, especially at Lake Seminole and Lake Eufaula. We encourage the Corps to investigate the feasibility of occasional draw downs for controlling aquatic plants as part of this WCM update.

Floodplain Habitats – Floodplain habitats are vital to the health of the riverine and estuarine communities of the ACF Basin. Darst and Light (2008) found that floodplain forests of the Apalachicola had shorter flood durations, were drier in composition, and had 17 percent fewer trees in 2004 than in 1976. The Corps should evaluate the effects of past and proposed project operations on flood durations and floodplain habitats.

Apalachicola Bay Habitats and Fisheries – The biological organization of Apalachicola Bay is controlled largely by riverine influences on its salinity, turbidity, and sedimentation rates (Livingston 1991). We encourage the Corps to apply a spatially-explicit hydrodynamic model of the bay to assess the effects of alternative operations on salinity regimes, and in turn, on the relative distribution of salt marshes, submerged grass beds, and oyster bars in the bay.

Alternatives

Minimum Releases -- A fundamental operating rule for all of the Corps ACF dams is the minimum release that will occur at any given time. Whether expressed as single year-round discharge or more variably as a function of season, reservoir inflow, storage levels, and/or other factors, a minimum release rule establishes a limit on the extent to which a reservoir may deplete river flows by rising storage levels and may be required to augment flows by dropping storage levels. We encourage the Corps to use this WCM update to comprehensively evaluate storage options in the context of the impacts of altered flow regimes at the ACF dams and the benefits of restoring more natural patterns to the monthly, daily, and instantaneous releases from the ACF dams.

The practice of hydropower "peaking" at Buford, West Point, and W.F. George dams, and to a lesser degree at Woodruff Dam, may raise and lower the river by several feet over the course of a few hours. This practice may severely limit the populations of many species by limiting the availability of specific microhabitats to very brief periods, periods too brief for the completion of essential life history functions. Although eliminating peaking altogether would best serve the habitat needs of riverine fish and wildlife, we recognize the important role that these projects play in providing electric power. Therefore, we ask the Corps to consider how providing windows of more stable flows during critical periods might increase the abundance and diversity of native fishes and other aquatic resources in project tailwaters.

Winter Drawdown -- After the localized impact of hydropower peaking on project tailwaters, probably the most significant hydrologic alteration induced by ACF reservoir operations is the annual autumn drawdown and spring refill for flood control purposes. This practice vacates about 288,000 acre feet of combined storage in Lanier, West Point, and George starting October 1 and completed by mid December causing a significant rise in river flows. Refilling this storage from mid February through May 31 to meet summer recreational demand causes a daily average depletion of about 1,400 cfs per day to the flows that would otherwise issue from W.F. George Dam. The spring refill period extends into the principal spawning season for many native fish species, including most sport fishes, and because many of these rely upon floodplain habitats for spawning and rearing, less flow in the spring means less habitat. To reduce the hydrologic alteration caused by flood control operations, we urge the Corps to consider the potential risks and benefits of reducing the magnitude of the autumn drawdown and/or of beginning the spring refill earlier, especially during dry climatic periods. Also, other alternatives to achieving flood protection should be considered.

Climate Change -- We recommend that the Corps consider how climate change may affect ACF flow regimes and how to best adapt reservoir operations to the most likely foreseeable changes. The effects of a given set of operating rules will vary depending on whether the basin's climate becomes drier, wetter, more variable, or less variable. In particular, it is vitally important to adapt the level set as the top of conservation (TOC) pool to the long-term hydrology of the basin and the essential purposes the projects serve. In a scenario with greater variability between annual high flows and low flows, for example, it may not be feasible for these projects to simultaneously serve their existing levels of flood control protection and minimum flow support without adapting TOC levels to prevailing weather conditions. The Corps already practices this concept with occasional variances from the rule curves to store water above the TOC elevation during dry periods. We recommend that the Corps explicitly address climate-based operational flexibility in the WCM update and in the analyses of the EIS.

Consumptive Water Demands -- Similarly, the Corps should consider the impacts of increasing consumptive water demands in the basin. This is not an alternative, per se, but is a variable that an analysis of operational alternatives should incorporate along with climate-driven hydrologic variability. The EIS should quantify the relationship between increasing consumptive demands in the ACF Basin and the benefits from various project purposes. For example, what is the highest sustainable minimum release from Woodruff Dam if consumptive demands increase by 25, 50 or 100 percent? To consolidate and report important data about the basin, the EIS should document the volume of storage that has been either contracted for water supply or has been

proposed in each project and any limitations due to hydrologic conditions of meeting the contracts.

Navigation -- Navigation is an authorized project purpose and the Corps has used reservoir storage in the past to support navigation. In recent years, though, lacking water quality certification to maintain the channel in Florida, we have seen only occasional flow management for the navigation purpose. How will the WCM update address navigation? Current physical channel conditions dictate the flows that will provide the authorized channel dimensions. Short of providing flows to meet channel depth authorizations maintaining channel conditions by dredging would be indicated. Dredging has significant adverse effects to fish and wildlife. If flows for navigation are included in the WCM update, the Corps should also outline dredging needs, if any, and evaluate the effects of the channel maintenance activities that would be necessary under the conditions specified for navigation flow support. If flows for navigation are not included in the WCM update, the Corps should consider if the current policy of a four-zone operational scheme could be improved and/or simplified.

Fisheries Management -- The Corps has been following a draft Standard Operating Procedure (SOP) for "Lake Regulations and Coordination For Fish Management Purposes" for several years. The "fish spawn" SOP establishes a general goal of managing for generally stable or rising reservoir levels and for generally stable or gradually declining river levels for about 4 to 6 weeks in the spring months. We would like to cooperate with the Corps and the wildlife agencies of the three states in the coming months to explore ways to incorporate this draft SOP into the mix of alternatives that are evaluated in the WCM update.

National Wildlife Refuges -- The Service has previously recommended to the Corps a seasonal pattern of reservoir levels at W.F. George Reservoir/Lake Eufaula that would best accommodate the needs of Eufaula National Wildlife Refuge. The principal concerns of the refuge relative to reservoir management are for water levels that provide seasonal habitat for a large number of migratory bird species, for control the spread of undesirable aquatic vegetation, and to allow the manipulation of off-reservoir impoundments for waterfowl. These recommendations, which we reiterated in our draft Fish and Wildlife Coordination Act report for the Corps' 1998 draft EIS on ACF water allocation, are to manage the reservoir so that it behaves more like a river. We recommended an annual pattern cycling between the highest levels (190 ft) in the late winter and early spring to the lowest levels (185 ft) in the late summer. These recommendations are still valid, and we request the Corps to consider how the benefits and impacts of such a scheme compare with the existing operating regime and other alternatives.

The scoping process is an opportunity to inform the formulation and analysis of alternatives that could result in a new and improved set of rules and policies for operating the ACF federal projects. We strongly support the idea of organizing interagency technical workgroups that would assist the Corps in compiling the information that is necessary to craft a balanced set of alternatives and to analyze their effects on resources. The Service is willing to participate in such workgroups relative to fish and wildlife resources affected by river flows and reservoir levels. Our Panama City Field Office will have the lead for the Service's participation in the WCM update and in the EIS.

We thank you for the opportunity to comment.

Sincerely,

Gail A. Carmody
Field Supervisor

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November 21, 2008

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To Whom It May Concern:

Southeastern Power Administration (Southeastern) is pleased to have the opportunity to provide comments to the U.S. Army Corps of Engineers, Mobile District, on the planned update of the Water Control Manual for the Apalachicola-Chattahoochee-Flint (ACF) River Basin.

Southeastern is the Federal Power Marketing Administration that has the responsibility to market the electric power generated at Buford, West Point, Walter F. George, and Jim Woodruff projects in the ACF basin. Generation from Buford, West Point, and Walter F. George are marketed as part of the Georgia-Alabama-South Carolina (GA-AL-SC) System, and Woodruff is marketed as a single-project system. The overall operation of the river basin is an integral part of power marketing in terms of the effect on power production and availability of generation to meet customers' schedules. Any operational changes to the river basin could dramatically affect peaking power production at the projects, and result in a loss of revenue for the Government and/or an increase in the federal power rates that the preference customers must pay in future rate adjustments.

It is Southeastern's responsibility to ensure that the costs allocated to the hydropower purpose are repaid to the United States Treasury. Project repayment costs were developed and assigned based on authorized purposes receiving certain benefits from the projects. Such costs are to be repaid by the purpose in the utilization of project features, such as available storage. Typically, the costs allocated to hydropower account for a very high percentage of the reservoir project costs.

In the Mobile District's update of the Water Control Manual for the ACF basin, Southeastern would be concerned with any changes which adversely impact the operation of a project with respect to the production of hydropower. Any changes in the plan which creates operational restrictions, or redistributes project benefits, should be accompanied by a reallocation of project costs and compensation to the impacted purpose. It is neither fair nor equitable to expect an authorized purpose to be responsible for costs which do not correspond to the level of benefits received. Any reduction in the availability of power is an impact to Southeastern's preference customers. The municipalities and cooperatives which benefit from project generation are

heavily dependent on their government allocation of capacity and energy to meet their peak loads. Many of them have been preference customers for 50 years. They have designed their electrical systems considering the government generation as an important part of their systems' peaking resource. Any reductions in the level of benefits available to them should be accompanied by an appropriate level of compensation.

Southeastern understands the complex task which has been undertaken by the Mobile District and looks forward to working closely with the District on this process, and in arriving at a plan which balances the needs of the basin.

Sincerely,

Herbert R. Nadler
Acting Assistant Administrator for
Power Resources

Response sent via e-mail to:
comments@acf.wcm.com

Southern Nuclear
Operating Company, Inc.
42 Inverness Center Parkway
Birmingham, Alabama 35242

SOUTHERN COMPANY
Energy to Serve Your World

November 21, 2008

VIA E-MAIL TO COMMENTS@ACF-WCM.COM

Col. Byron Jorns, District Engineer
Mobile District, U.S. Army Corps of Engineers
107 Saint Francis Street, Suite 1403
Mobile, Alabama 36602-9986

Re: Scoping Comments – Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin

Dear Colonel Jorns:

The U.S. Army Corps of Engineers ("Corps") has solicited public comments regarding the scope of issues to consider as the Corps updates its water control manual for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin. 73 Fed. Reg. 54,391 (Sept. 19, 2008). This letter provides the comments of the Southern Nuclear Operating Company ("Southern Nuclear").

Southern Nuclear operates the Farley Nuclear Plant ("Plant Farley"), located on the Chattahoochee River near Dothan, Alabama, which provides 19% of the total electricity generation for Alabama Power Company. Plant Farley relies on adequate elevations and flows in the Chattahoochee River for cooling water and discharge assimilation. From time to time, it is necessary to transport oversized equipment to and from Plant Farley by barge. Accordingly, Southern Nuclear has a significant interest in the Corps' management of its reservoirs in the ACF River Basin.

As the Corps revises its ACF water control manual, it is the position of Southern Nuclear that the Corps must ensure: (1) minimum flows of 2,000 cubic feet per second ("cfs") in the Chattahoochee River at Columbia, Alabama; (2) support of navigation on the Apalachicola and Chattahoochee Rivers; and (3) operation of the Corps' ACF reservoirs for their Congressionally authorized purposes. Each of these issues is explained more fully below.

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The Corps must provide 2,000 cfs minimum flow at Columbia, Alabama.

Southern Nuclear defines a flow of 2,000 cfs and river elevation of 74.5 feet mean sea level ("ft MSL") as the minimum conditions necessary for long-term operation of Plant Farley. While Plant Farley can operate for short periods (a few days) with flow below 2,000 cfs, extended operation at lower flow would require detailed evaluation to determine the potential environmental and operational impacts. Generally, Plant Farley operates with a river elevation between 76 and 78 ft MSL. Operation below 74.5 ft MSL also would require detailed evaluation to determine the potential environmental and operational impacts. Other industrial facilities on the Chattahoochee River, including those of MeadWestvaco and Georgia Pacific, also require the same conditions to meet their applicable water quality standards.

Plant Farley's discharge is limited by a National Pollutant Discharge Elimination System Permit issued by the Alabama Department of Environmental Management. That permit contains limits and requirements to ensure the thermal discharge and chemical constituents in the effluent meet applicable water quality standards. At 2,000 cfs flowing past Plant Farley (*i.e.*, going through Andrews Lock and Dam), there are no significant adverse thermal or chemical impacts resulting from Plant Farley's discharge. Plant Farley also discharges small quantities of radioactive waste through the discharge line in strict compliance with regulations of the Nuclear Regulatory Commission ("NRC"). When flows are reduced below 2,000 cfs for extended periods, an evaluation of the impacts of that discharge is required by Southern Nuclear, state environmental agencies, and, potentially, the NRC.

The Final Environmental Impact Statement ("FEIS") of the Atomic Energy Commission for construction of Plant Farley at that site discussed the fact that the Corps would generally maintain an elevation of 76 ft MSL and flow of 2,000 cfs. FEIS Related to Construction of Joseph M. Farley Nuclear Plant Units 1 & 2, Alabama Power Company, II - 20 (June 1972). Thus, regulatory approval of the Plant Farley site was based on an assumption that the Corps would continue to maintain those parameters.

The States of Alabama, Florida, and Georgia considered Plant Farley's requirements and those of other facilities on the Chattahoochee River during the interstate compact negotiations concerning a proposed Allocation Formula for the ACF River Basin. The three states signed a Memorandum of Agreement providing for a minimum daily flow of 2,000 cfs below George W. Andrews Lock and Dam, just above Plant Farley.

The Corps has also recognized the need for flow of 2,000 cfs at Columbia, Alabama. For example, the Walter F. George Reservoir Regulation Manual specifically recognizes that Plant Farley and other industries require adequate flows and elevations for their operations and downstream water quality as follows:

> Among the industrial users are two paper company facilities and one nuclear power plant. Mead Paper Company, at the headwaters of W.F. George Lake, and the Georgia Pacific Corporation, in the headwaters of Lake Seminole, withdraw water for processes used in the manufacturing of wood products. These companies must also meet special water quality requirements for discharge that are based on a combination of dissolved oxygen and flow in the river. The Alabama Power Company's Farley Nuclear Power Plant is located on the Chattahoochee River downstream from Columbia, Alabama. The plant has an intake structure that provides cooling water for its nuclear fuel, and is dependent upon a river-stage above 76 feet MSL for safe operation.

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Apalachicola River Basin Reservoir Regulation Manual, Appendix C, Walter F. George Dam at C-13 (Feb. 1993).

Plant Farley and the other industrial facilities in the region make a major contribution to the regional economy of southeastern Alabama and southwestern Georgia. Flows of 2,000 cfs at Columbia, Alabama, are critical for the continued safe and reliable operation of those facilities. Therefore, Southern Nuclear urges the Corps to ensure its manual revisions clearly provide for the continuation of flows at that level.

The Corps must support navigation on the Apalachicola and Chattahoochee Rivers.

In addition to flow assumptions, another primary factor in the siting of Plant Farley was proximity to a federally authorized and maintained navigable river. Most of the large equipment for the original plant construction was delivered by barge. In 2000 and again in January of 2006, barge transportation to and from the plant was necessary for vital equipment replacement and maintenance activities. No other mode of transportation to Farley was adequate for those purposes. Inadequate provision for reliable navigation will increase costs for Plant Farley and limit the potential for future expansion.

Navigation is one of the principal authorized purposes of the ACF River Basin reservoir system as authorized by Congress. Each of the Corps' ACF reservoirs plays a critical role in maintaining navigation in the ACF River Basin. For example, the current reservoir regulation manual for Jim Woodruff Reservoir describes Woodruff as "a multi-purpose project created primarily to aid navigation in the Apalachicola River below the dam and in the Chattahoochee and Flint Rivers above the dam and to generate electric power." Apalachicola River Basin Reservoir Regulation Manual, Appendix A, Jim Woodruff Reservoir at A-10 (1972 & Rev. July 1985). To this end, the Corps is directed to maintain Woodruff at an elevation of approximately 77 ft MSL while continuously releasing inflows to the Apalachicola River in order to support a nine foot deep navigation channel. *Id.* at A-16, A-17. Continuous navigation operations are to be curtailed only during unusual low-flow events, consistent with static head limitations. *Id.* at A-18.

Upstream, the George W. Andrews Reservoir is described in its Reservoir Regulation Manual as "a single purpose project designed to aid navigation by providing a 9-foot

navigation channel and by maintaining a more uniform downstream flow." Apalachicola River Basin Reservoir Regulation Manual, Appendix D, George W. Andrews Reservoir at D-5 (Rev. Feb. 1978). Andrews, like Woodruff, is a run-of-river project, and it aids navigation primarily by passing inflows released from upstream projects. All efforts are to be made to ensure Andrew's tailwater does not drop below 77 ft MSL—the minimum needed to maintain a nine foot navigation channel. *See id.* at D-26. When Andrews can no longer support this tailwater elevation, "arrangements may have to be made for limited operation of the Walter F. George power plant, or for equivalent spillway discharges." *Id.* Indeed, all three of the upstream reservoirs are required to support navigation from Columbus, Georgia, to the Gulf of Mexico. As the Corps' 1989 Draft Water Control Plan recognizes, "all three of the major storage projects will be utilized to provide the designated level of support" for navigation "for as long as possible and, of course, preferably year-round." ACF Basin Water Control Plan at 17-18 (Draft Oct. 1989).

As explained above, Plant Farley was designed and built on the assumption that the Corps would ensure a minimum elevation of 76 ft MSL between Andrews and Woodruff for as much of the year as possible. When the ACF reservoirs are operated to meet the elevation and flow targets specified in the Woodruff and Andrews Reservoir Regulation Manuals, Plant Farley's operational requirements are met.

Recently, the Corps has not maintained the Apalachicola River to provide for safe and reliable navigation, largely due to the State of Florida's denial of authorization pursuant to Clean Water Act ("CWA") Section 401, the Coastal Zone Management Act ("CZMA"), and various state statutes and regulations. As a result, commercial barge traffic from Alabama and Georgia to the Gulf of Mexico has all but ceased. Nevertheless, the Corps is responsible for maintaining navigation in the ACF River Basin notwithstanding Florida's decision. CWA Sections 404(t) and 511(a) provide sufficient authority for the Corps to proceed with navigation maintenance despite Florida's denial of a Section 401 permit. Additionally, Florida's coastal management program does not provide an independent basis to block navigation maintenance on the Apalachicola River. Under CZMA Section 307(e), the consistency review program may not be construed as diminishing, superseding, or modifying existing federal responsibilities over navigable waters. The Corps cannot use its failure to maintain the navigation channel and the subsequent reduction in barge traffic as a basis for not operating the reservoirs for navigation.

The Corps must operate the ACF reservoirs for their authorized purposes.

The Corps' method of developing its Interim Operations Plan ("IOP") and Revised Interim Operations Plan ("RIOP") raises concerns about how the Corps defines its statutory authority with respect to ACF River Basin operations. The IOP and RIOP are almost exclusively driven by fish and wildlife concerns. However, only one ACF reservoir—West Point—was expressly authorized by Congress for any fish and wildlife purpose, and that West Point authorization was for fish and wildlife *recreation*. There is no recreational purpose associated with the mussel and sturgeon species which were the

subject of the IOP and RIOP. The Corps has no independent authority to create an IOP or RIOP designed to benefit threatened and endangered species to the detriment of the authorized purposes of the ACF reservoir system.

The Endangered Species Act ("ESA") does not authorize federal actions independent of federal agencies' other statutory authorities. Rather, a federal agency may undertake an action for the conservation of a threatened or endangered species only if its authorizing statutes allow it to do so. The Eighth Circuit Court of Appeals, in an opinion addressing the Corps' Missouri River operations, noted that if "ESA compliance would force the Corps to abandon the dominant [Flood Control Act] purposes of flood control or downstream navigation, *the ESA would not apply.*" *In re Operation of the Missouri River System Litigation*, 421 F.3d 618, 631 n.9 (8th Cir. 2005) (emphasis added). The Eighth Circuit's opinion largely upheld a decision by Judge Paul Magnuson, who now presides over the ACF litigation in the Middle District of Florida. Likewise, the Supreme Court has recently held that ESA Section 7 governs only *discretionary* federal action; it does not mandate any result beyond or contrary to an agency's discretionary authority. *Nat'l Ass'n of Home Builders v. Defenders of Wildlife*, 127 S. Ct. 2518, 2536 (2007).

Under the applicable provisions of the ESA and the regulations of the Fish and Wildlife Service, the Corps should have presented its method of operating the ACF reservoirs as the subject of the Section 7 consultation. Because the Corps failed to do so, there was never any determination whether the Corps' pre-IOP operations potentially "jeopardize[d] the continued existence" of the Gulf sturgeon or the Apalachicola mussels or "destroy[ed] or adversely modif[ied]" those species' critical habitats. Rather, the IOP itself was made the subject of Section 7 consultation—even though the Corps lacks independent statutory authority to develop the IOP or RIOP.

Support of navigation is among the primary Congressionally authorized purposes of the ACF reservoirs. Accordingly, the Corps has no discretion to abandon navigation support, nor may the Corps operate the ACF reservoirs for conservation of a species listed under the ESA if doing so results in operations which fail to provide for navigation and the other Congressionally authorized purposes of the ACF reservoirs. *See* 421 F.3d at 629 n.7 ("[I]f faced in the future with the unhappy choice of abandoning flood control or navigation on the one hand or recreation, fish and wildlife on the other, the priorities established by the [statutes authorizing the Missouri River projects] would forbid the abandonment of flood control or navigation."). Providing additional flows for fish and wildlife are appropriate <u>only</u> after the primary purposes of the ACF reservoir system, including navigation, are met.

Thank you for your consideration of these comments. Should you have any questions or if you wish to receive additional information, please contact me at (205) 992-6387 or jgodfrey@southernco.com .

Sincerely,

Mike Godfrey
Environmental Affairs Manager

JMG/ahl

ES File: E.01.51

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GEORGIA POWER
A SOUTHERN COMPANY

November 20, 2008
Electronic Filing (Comments@acf-wcm.com)

U. S. Army Corps of Engineers
Mobile District
Attn: ACF-WCM Comments
107 Saint Francis Street, Suite 1403
Mobile, AL 36602-9986

APALACHICOLA CHATTAHOOCHEE FLINT BASIN, WATER CONTROL MANUAL UPDATE AND ENVIRONMENTAL IMPACT STATEMENT
Comments Submitted by Georgia Power Company

Dear Sir or Madam:

Georgia Power is providing these comments on the Water Control Manual (WCM) update for the U. S. Army Corps of Engineers (COE) operations of its facilities within the Apalachicola Chattahoochee Flint (ACF) River Basin. We appreciate the opportunity to comment and provide assistance in developing the scope of issues to be assessed in the development of the updated ACF WCM.

Georgia Power operates a number of fossil fuel fired steam electric generating and hydroelectric facilities within the ACF River Basin and holds contracts with Southern Power for a total generation of approximately 7100 megawatts of electricity. These facilities are critical components of our generation fleet which provides electricity to the citizens of this region of the country. Accordingly, updating the WCM and its various Water Control Plans should include assessment of the water use needs necessary to maintain generation at these Georgia Power facilities as part of the baseline conditions, in accordance with Council on Environmental Quality regulations at 40 C. F. R. Part 1500. A robust direct and indirect effects analysis should also consider the overall effects on the environment, including human, natural and socioeconomic effects resulting from any subsequent COE actions. Finally, Georgia Power must plan for future generation of electricity to meet growing demand throughout the state and region. In updating the ACF WCM, we respectfully request that the COE contemplate these future needs.

Thank you for the opportunity to comment on this important issue. If we can provide additional information, please do not hesitate to contact me at tdblaloc@southernco.com or (404) 506-7026.

Sincerely,

Tanya Blalock
Environmental Affairs Manager
Water Programs

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ASST. DIRECTOR

The mission of the Wildlife and Freshwater Fisheries Division is to manage, protect, conserve, and enhance the wildlife and aquatic resources of Alabama for the sustainable benefit of the people of Alabama.

November 20, 2008

Mr. Lewis Sumner
ACF EIS Project Manager
U.S. Army Corps of Engineers
Inland Environmental Section
P.O. Box 2288
Mobile, Alabama 36628

RE: Apalachicola-Chattahoochee-Flint River Basin
Water Control Manuel Update Process

Dear Mr. Sumner:

The Fisheries Section of Alabama's Department of Conservation and Natural Resources (ADCNR) appreciates the opportunity to provide comments on the Apalachicola-Chattahoochee-Flint (ACF) River Basin Water Control Manuel Update Process. The ACF Basin extends from northeast Georgia to the Florida gulf coast, with 5 major dams and 8 smaller dams located in the basin. The 5 major dams are owned by the Corps of Engineers (COE). The projects were built for flood control, river navigation, hydroelectric power and recreation, with other purposes including water supply, water quality, and fish and wildlife enhancement. Through the construction and operation of these dams, the main-stem river systems have become regulated waters following guidelines established by the Water Control Manual of 1951.

Aquatic wildlife biologists have learned a great deal since 1951 concerning responses of aquatic ecosystems to habitat alteration in regulated systems. The water management policies of the past have often resulted in a degradation of the ecological integrity of a river ecosystem, which in the case of wildlife has lead to a decrease in biodiversity and species sustainability. To protect ecological integrity, we need to mimic components of natural flow variability, taking into consideration the magnitude, frequency, timing duration, rate of change and predictability of flow, and sequencing of such conditions. There are five riverine components to consider: hydrology, geomorphology, biology, water quality and connectivity. The solution will include a balanced approach to river corridor management.

People value rivers for flood control, drinking water, navigation, municipal and industrial use, irrigation, hydroelectric power, sewage treatment, recreation, esthetics, fish and wildlife, and preservation for future generations. Securing appropriate flows for protection of fisheries, wildlife, cultural and societal resources requires the implementation of study plans that are guided by a balanced approach.

The Department of Conservation and Natural Resources does not discriminate on the basis of race, color, religion, age, gender, national origin or disability in its hiring or employment practices nor in admission to, access to, or operation of its programs, services, or activities.

The comments provided below are submitted for the protection and enhancement of aquatic wildlife resources for the people of Alabama. The public has a vested interest in natural resource management because they are the ones for whom natural resources are held in trust.

Project Releases

Presently, Buford Dam has an instantaneous minimum flow requirement of 750 cfs. The flow for Buford Dam is measured at Peach Creek approximately 30 miles below the dam. West Point Dam has an instantaneous minimum flow requirement of 675 cfs. Both of these values were based on flow requirements needed to meet water quality standards. Jim Woodruff Dam has an average daily minimum flow requirement of 5000 cfs, based on historic low flow data and the requirements of downstream industries. Walter F. George and George W. Andrews dams do not have minimum flow requirements in place at this time.

Many studies have shown that inadequate minimum flows are a barrier to maintaining healthy riverine fish, mussel, snail and crayfish populations. Pulses of water flows without continuous flows during non-generation periods exacerbate impacts to aquatic wildlife. The goal of the COE should be to ensure that sufficient quality and quantity of water is provided in such a manner as to resemble the natural riverine flow regime. This flow regime shall provide aquatic habitat conditions that support a diversity of endemic aquatic species (including fish, plants, mussels and other invertebrates) and their life cycle requirements. As a function of the natural flow regime, both intra- and inter-annual variations of flows shall be implemented to sustain biological diversity and a balanced community of organisms.

Recommendation: ADCNR recommends that the COE review existing data and conducts monitoring studies to determine the present state of aquatic wildlife in river reaches below projects. Using an adaptive process, the COE should evaluate various modeled flows for COE projects to mimic a natural flow regime throughout the ACF. The biological response produced by the environmental flows would be evaluated, and if deemed necessary, adjusted to meet the objective of maintaining ecological integrity.

Recreation

Recreation on impoundments and rivers in the ACF is greatly influenced by water management. Sport fishing in Alabama in a 2006 survey was estimated to exceed $1,400,000,000 and provide over 14,600 jobs. Commercial anglers targeting fish and shellfish are extremely important for providing food and supporting local and State

economic wellbeing. There are more than 630,000 licensed boat operators in Alabama, which is an indication of the level of motorized recreational boating. The ability of these user groups to access both impounded and riverine waters is directly related to launching facilities being fully functional at low water conditions.

Recommendation: ADCNR recommends that the COE (1) monitor boating access sites and strive to maintain water levels for recreational boating access; (2) regularly clean silt and debris from access sites; (3) maintain water levels in rivers and impoundments that support recreation navigation; (4) monitor and manage nuisance aquatic vegetation that limits access to public waters; and (5) maintain channels to backwater coves to provide angler access to these productive fishing areas, and to maintain a water connection between the main-stem river and backwater coves. These backwater areas are important nursery areas for rearing stages of many fish and invertebrate species.

Fish Passage

Dams, in most cases, block the movement of catadromous, anadromous, and riverine fish species. This has resulted in fragmentation of native fish ranges which will disrupt life cycles of fish that depend on movement to specific locations to spawn, overwinter or oversummer. Long term river fragmentation will result in reducing the size of the gene pool and restricting genetic diversity. Mussel populations will also be impacted by fish movement restrictions since fish are necessary to complete their life cycle.

Recommendation: ADCNR recommends that the COE establish a goal to develop a fish passage plan for all COE locks and dams in the ACF. A fish passage plan should identify key species which need upstream and downstream movement. With those species in mind, evaluate viable fish passage methods. A lock passage program similar to the one currently employed by the COE at Woodruff Lock and Dam would be a good starting point. This would greatly benefit adult migratory fish such as striped bass, Alabama shad, American eel, Gulf sturgeon, and many other fish species.

Water Quality

COE are well aware of the importance of maintaining good water quality standards to benefit wildlife, as well as all water users. There are many reasons as to why water quality parameters might fall below State standards. It is a fact that water quantity (flow) and water quality have an important relationship. By establishing a continuous flowing system within the ACF, there will be a positive response in many water quality parameters.

Mr. Sumner
Page 4
November 20, 2008

Recommendation: ADCNR recommends regardless of the water management plan for the ACF, the COE should maintain water quantity stations above and below all dams, and support flow stations below each lock and dam. COE should meet all State water quality standards for at least "Fish and Wildlife" classified waters.

Species of Greatest Conservation Need (GCN)

Congress through the Wildlife Conservation and Restoration Program (WCRP) and the State Wildlife Grants (SWG) Program required each state fish and wildlife agency to design and implement a comprehensive approach to the conservation of America's resources by October 1, 2005. Alabama has completed the "Comprehensive Wildlife Conservation Strategy" (CWCS), and the plan is in the implementation phase. Altogether, 314 aquatic and terrestrial wildlife species were identified as in greatest conservation need. These GCN fauna include 24 mammals, 26 reptiles, 14 amphibians, 28 birds, 57 fish, 93 mussels, 34 aquatic snails and 28 crayfishes. GCN species are associated with 15 key habitats and 15 river basins. Threats and conservation actions have been identified for each GCN species.

Recommendation: ADCNR recommends the development of a new water control manual for the ACF which should reflect wildlife conservation actions identified in Alabama's CWCS where appropriate.

Sincerely,

WILDLIFE & FRESHWATER FISHERIES

Stanley F. Cook

Stanley F. Cook
Chief of Fisheries

ARC
ATLANTA REGIONAL COMMISSION

PLANNING • LEADERSHIP • RESULTS

BY ELECTRONIC MAIL

Tetra Tech, Inc.
107 St. Francis Street
Suite 1403
Mobile, AL 36602-9986

November 21, 2008

Re: Scoping Process for Update of ACF Water Control Manual

To Whom It May Concern:

I offer the following comments on the scoping process for the update of the Water Control Manual for the federal reservoirs in the Apalachicola-Chattahoochee-Flint ("ACF") River Basin on behalf of the Atlanta Regional Commission.

1. The Corps Has Not Adequately Defined the Proposed Action or Alternatives

ARC has long supported the Corps' efforts to update the water control manuals for the ACF River Basin. We have done so because we need a creative and comprehensive new water control plan based on facts, sound science, and real input from all basin stakeholders. We also believe that this process presents a unique opportunity for the development of an operating plan that stakeholders throughout the ACF River Basin can not only accept, but also embrace.

Unfortunately, the scoping process the Corps has implemented to date is not calculated to achieve this result. Contrary to basic scoping guidelines that require the Corps to present the public with a coherent proposal and a suggested initial list of environmental issues and alternatives, the Corps has not defined either the proposed action or any potential alternatives. As a result, ARC and other stakeholders have not been provided with sufficient information to understand and evaluate what is being proposed or to develop potential alternatives. This is legally inadequate and denies ARC and other stakeholders the opportunity to participate meaningfully in the process. It is also certain to lead to a water control plan that fosters division, rather than consensus and progress.

At a minimum, the Corps should employ the procedures it has used to update water control manuals in other contested basins. In the Missouri River Basin, for example, the Corps engaged in a thorough process designed to educate, build consensus, and solicit meaningful consensus alternatives from basin stakeholders. There, the Corps began by publishing what the Corps called a "preliminary revised draft environmental impact statement" setting out alternatives

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designed to illustrate the implications of different operational plans. This document was never intended to serve as the final proposal; rather, it was designed to provide a basis for the development of meaningful stakeholder input. The Corps then held numerous educational workshops and meetings throughout the basin to clarify the alternatives, and eventually received consensus proposals from different basin interests suggesting additional alternatives to be considered. The Corps then evaluated those consensus proposals against its original alternatives in developing a water control manual for the basin.

The process described above stands in stark contrast to the process employed here, and we urge the Corps to better define the proposed action and alternatives before proceeding further. Nevertheless, ARC will submit general comments at this time. We will supplement these comments once we have a better understanding of the alternatives the Corps intends to consider.

2. The Corps Must Consider All Reasonable Alternatives

Although the Corps has never formally announced the alternative operating plans it is considering, we are extremely concerned by reports that the Corps merely intends to update its existing manuals to reflect existing operations. It would be truly disappointing if the update process were to devolve in this manner into a paper exercise that will have no lasting effect on conditions in the basin going forward. Such a pre-ordained and limited process would do a great disservice to all those who rely upon the Corps and its management of the water resources of the ACF River Basin, and would fall far short of meeting the Corps' obligations under NEPA.

The new water control plan must *not* simply replicate existing operations. Operations under the RIOP and its predecessor plans drained Lake Lanier in a futile attempt to drought-proof the entire basin using a large, headwaters reservoir with limited refill capacity. This not only placed Metro Atlanta's principal source of water supply in jeopardy and resulted in tremendous economic harm to North Georgia, but also wasted critical reservoir storage that could have been used to support all of the various project purposes through this extended drought.

Alternative operating plans must be developed that will manage our water resources much more effectively. There is enough water in the ACF River Basin to meet reasonable needs in the metropolitan area without adversely affecting the downstream users or the environment, provided the reservoirs are managed in a balanced fashion.

Current operations under the RIOP and conditions for *all* stakeholders can be improved. We know this is possible because we have developed one alternative, the Sustainable Release Rule that performs at least as well or better than the RIOP for all stakeholders. A copy of this approach was previously submitted to the Corps on January 10, 2007and is attached as Exhibit A. We have updated this plan and will submit additional information concerning this proposal in the coming weeks.

We urge the Corps to study this alternative and others as it updates reservoir operations. We note that many stakeholders, including environmental organizations, have expressed strong interest in this proposal. We also note that when this alternative operating plan was initially proposed in 2007, the Corps declined to consider it on grounds that did not contain any analysis of

hydropower impacts and that implementation of the plan would require an update to the water control manuals. With respect to the first point, the submission did in fact consider hydropower impacts. *See* Section 6.3.3 Hydropower. We will nevertheless expand upon this analysis and explanation in the upcoming submission. As to the second point, the Corps is now in the process of updating its water control manuals, and this proposal deserves serious consideration.

2.1 The New Water Control Plan Must Be Based on Facts and Sound Science

One major obstacle to progress in the basin has been the lack of sound science. Important decisions—most notably the original, snap decision to adopt the Interim Operations Plan in March 2006—have been made without sufficient study or analysis, and without proper procedure. In many cases, these decisions have been made to protect interests that are only poorly understood. Such decision-making is detrimental to all basin interests.

What is more, the dispute between the States over the water resources of ACF River Basin has all too often been dominated by unfounded and politically expedient rhetoric concerning the impact of Metro Atlanta's water use on downstream States and the Apalachicola River and Bay. The facts, however, demonstrate that Metro Atlanta's use of water in the ACF River Basin is reasonable by any measure. Currently metro Atlanta uses only 1 to 2% of the water in the ACF Basin as measured by the flow at the Florida line. The impact of this use, if any, on downstream interests and the Apalachicola River and Bay is imperceptible. The new water control plan should accommodate this reasonable use.

In short, better decisions could be made if we had better information. We therefore urge the Corps to take full advantage of this opportunity to study fully the ecology and water needs up and down the entire ACF River Basin, and to disseminate that information to the public. This will be critical to the Corps' development of a sound, fact-based management plan that meets the needs of all stakeholders. It would also foster understanding among the many stakeholders in the ACF River Basin that are willing to look objectively at the facts and come together in support of a balanced management plan.

2.2 Historical Operations Are Not Realistic or Reasonable Alternatives

Instead of considering realistic alternatives to the RIOP, however, we understand the Corps is planning to study "alternatives" based only on historical operations. We understand that one "alternative" for example, will be the year 1975, that another might be 1989, and that another might be 2006. We presume this means the Corps will study, as an alternative, a proposal to turn the clock on reservoir operations back to these dates. If our understanding of this proposal is correct—and we would be delighted to learn that it is not—we would urge the Corps simply to call a halt to this process.

Considering only historical operations as alternatives cannot satisfy the Corps' obligations under NEPA. Conditions in the basin have changed dramatically over time, and a return to the operating plans of decades-ago is neither reasonable nor feasible. As such, consideration of such "alternatives" fails to meet the Corps' obligation to take a "hard look" at effects of its actions on

the human environment. The Corps must therefore consider all reasonable and feasible alternatives as this process moves forward.

2.3 Alternatives Must Include Water Supply for Metro Atlanta

Any reasonable and feasible alternative should consider the continued reasonable use of Lake Lanier as Metro Atlanta's primary drinking water source and those withdrawals from the Chattahoochee River Basin permitted by the State of Georgia.

2.3.1 Metro Atlanta Relies on Lake Lanier and There Are No Alternative Sources

The City of Atlanta, ARC, and others have a long history of working in partnership with the Corps to meet Metro Atlanta's reasonable water supply needs. As a result of this long-term partnership, which extends back to the initial conception of Lake Lanier itself, millions of people in Metro Atlanta now rely on Lake Lanier and the Chattahoochee River as their principal source of water supply.

There are good reasons for this reliance. First, as the Corps has repeatedly recognized through years of study, supplying water from Lake Lanier to meet the reasonable needs of Metro Atlanta is the highest and best use of the resource. It is for that reason that the Corps has repeatedly recommended that storage in Lake Lanier be reallocated to provide water supply for Metro Atlanta. Given that Metro Atlanta is the economic engine of the entire Southeast Region, unreasonable prohibitions on the use of Lake Lanier for Metro Atlanta's water supply would not only endanger the health and safety of millions of people, but also result in significant losses to the regional and national economies.

Second, Metro Atlanta lacks any viable alternative source of water supply. As a result of its geographic location, the geology underlying the region, environmental considerations, and legal prohibitions on large-scale interbasin transfers, Metro Atlanta must rely almost exclusively on surface water to meet its reasonable needs. These withdrawals come primarily from Lake Lanier and the Chattahoochee River. Thus, while water supplies and storage within other river basins can help support Metro Atlanta's needs and will continue to do so into the future, they are not substitutes for Lake Lanier. Lake Lanier is simply the only alternative that will meet the reasonable needs of Metro Atlanta in a manner that is safe, reliable, economical, and that does not result in a significant environmental impacts.

These realities are embodied in the current Water Supply and Conservation Plan developed by the Metropolitan North Georgia Water Planning District, the planning authority responsible for water supply planning for Metro Atlanta. This plan, which was developed under authority granted by the State of Georgia, depends upon Lake Lanier's continued availability as a water supply source and should be considered by the Corps in the development of any new water control plan.

2.4 Alternatives Should Not be Constrained by Perceived Limits on Corps Authority

We also understand that the decision to limit the scope of the water control plan update was justified, in part, by a decision to limit the process to existing legal authorities. This is a serious mistake. "Existing legal authorities" is simply too narrow a standard to achieve what needs to be done, as this would appear to preclude any major structural or operational changes such as are clearly needed to bring the existing plan, from 1959, up to date. The Corps' objective, in the first instance, should be to study developments in the basin and to determine how reservoir operations can be adjusted to achieve the greatest benefit and the best balance for all stakeholders. If the proposed operations resulting from this study require additional Congressional authorization, then the Corps should seek such authorization.

3. Flow Requirements Should Be Optimized, Flexible, and Tied to Actual Needs

The Corps should consider alternative operating plans, like the Sustainable Release Rule, that set minimum release requirements from Woodruff Dam based upon the actual needs of protected species in the Apalachicola River as established by sound science and based upon the best available data. As explained in ARC's comments on the RIOP, which are attached as Exhibit B, operating plans that fix releases based upon artificial constructs such as Basin Inflow are inefficient and may even be counterproductive in that they mandate excess releases and prevent the accumulation of system storage that could be utilized during drier parts of the year. Alternatives should therefore seek to maximize and optimize reservoir operations by balancing the releases necessary to meet demonstrated needs and the need to conserve storage whenever possible.

4. Operating Plans Should Recognize Lake Lanier's Unique Character

In prior comments on revisions to the various iterations of the IOP, ARC has also discussed in detail the unique considerations that should govern Lake Lanier. As explained there, Lake Lanier is a large headwaters reservoir with limited refill capacity. It cannot be used to "drought proof" the Apalachicola River, as releases from Lake Lanier cannot maintain artificially high downstream flows in the Apalachicola River for any appreciable period of time during drought. And in contrast to the lower federal reservoirs, once drained, Lake Lanier can take years to refill.

Low levels at Lake Lanier not only threaten Metro Atlanta's water supply security, but also have profound negative impacts on the economy of North Georgia. ARC therefore urges the Corps to consider alternatives that appropriately manage Lake Lanier given its unique characteristics. This would include alternatives that eliminate reservoir balancing, maximize refill opportunities, and avoid the dramatic and futile attempts to maintain artificial and unnaturally high flows in the Apalachicola River for any appreciable period of time. These considerations are discussed in detail in Exhibit B.

5. Rule Curve Changes

The Corps should consider and analyze potential rule curve changes to maximize the available storage and optimize operations for all purposes. Consistent with the Corps' flood control

responsibilities, possible changes that should be considered include raising the top of conservation at Lake Lanier, reducing the winter draw-down at the lower federal reservoirs, and adjusting the rate of the winter draw-down or the spring re-fill at each of the federal projects in the ACF River Basin.

6. Head Limits at Woodruff Dam

The Corps frequently cites head limits as the controlling reason for excess releases from Woodruff Dam. Rampdown restrictions compound this problem by requiring releases from storage to slow artificially the Apalachicola River's rate of fall following these excess releases. Combined these factors often result in over-releases greater than 1,000 cfs, which is more than Georgia's entire average consumptive water use in the ACF Basin.

Conservation storage in the ACF system is too valuable to be compromised by structural deficiencies and other limitations that could be remedied. Accordingly, the Corps should investigate, analyze, and design structural repairs or other measures to mitigate this problem. We believe this should include an evaluation of the structural stability of Woodruff Dam and the development of measures to improve stability, if warranted.

7. Hydropower Scheduling

The Corps should also consider alternative mechanisms for developing hydropower generation schedules. Currently, the Corps employs relatively rigid firm power generation schedules that assume a certain number of hours of generation when a project is in a certain zone. By incorporating into its operating plans more flexible, forecast-based mechanisms that anticipate energy spot market prices, the Corps can maximize the value of the hydropower produced and while making storage available to serve other project purposes. This approach has had great success in other projects and is employed in the Sustainable Release Rule. It should be considered by the Corps.

8. Sikes Cut

Many stakeholders in the ACF River Basin are concerned about salinity in Apalachicola Bay. These stakeholders have previously called for dramatic releases from storage to increase freshwater flow into the bay.

Reducing refill opportunities or releasing large quantities of water from storage from this purpose is not sustainable during extended drought periods. Thus, the Corps should consider alternatives that mitigate the salinity increases in other ways. For example, the Corps should consider alternatives that reduce or eliminate saltwater inflow through Sikes Cut, a major contributor to Apalachicola Bay salinity.

9. Channel Degradation

Similarly, to the extent the Corps is concerned about the areal extent of flooding or the inundation and connectivity of certain habitat, it must acknowledge that real causes of these problems have more to do with channel degradation than with the quantity of flow in the river.

This has significant implications for reservoir operations. As a result of the lowering of the channel, it now takes much more water to achieve any given river stage. For example, at the principal spawning ground for the sturgeon, USGS has determined that an additional 10,000 cfs is required to raise the river to its former stage. The Corps should therefore consider alternatives that include structural and engineering solutions to mitigate this degradation and restore channel elevation.

10. Forecasting Techniques Should Be Used to Improve Reservoir Operations

A large body of literature has been developed on the subject of hydrological forecasting. As discussed in Exhibit B, the USGS has been using and relying on these methods for decades. The Corps should consider alternative operating plans that utilize these tools, with appropriate margins of error, to optimize reservoir operations.

11. Conclusion

In conclusion, I urge you to consider these comments careful consideration. Please do not hesitate to call if you have any questions about these comments or if we can assist in any way.

Sincerely,

Charles Krautler
Director

EXHIBIT A

PROPOSED REVISION
TO THE INTERIM OPERATIONS PLAN FOR JIM WOODRUFF LOCK AND DAM
FOR THE IMPLMENTATION OF "REASONABLE AND PRUDENT MEASURE #3"

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Prepared for
the Atlanta Regional Commission
the City of Atlanta, Georgia
Fulton County, Georgia
Atlanta-Fulton County Water Resources Commission
Cobb County-Marietta Water Authority
DeKalb County, Georgia
Gwinnett County, Georgia and
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ATTACHMENTS

1. Daniel P. Sheer, *Analyzing the Risk of Drought: The Occoquan Experience*, 72 Journal of the American Water Works Association 246-253 (May 1980).

2. Robert M. Hirsch, *Stochastic Hydrologic Model for Drought Management*, 107 Journal of the Water Resources and Management Division, ASCE 303-313 (October 1981).

3. CD Containing Input and Output files for MSRR Model Results.

1. EXECUTIVE SUMMARY

The Atlanta Regional Commission is pleased to propose the following revision to the Interim Operations Plan ("IOP") for Jim Woodruff Lock and Dam ("JWLD") for implementation of Reasonable and Prudent Measure #3 ("RPM3") in accordance with the Biological Opinion issued by the Fish and Wildlife Service ("USFWS") on September 5, 2006.

The basic concept of the proposed revision is to provide the Maximum Sustainable Release that can be supported by JWLD, up to 10,000 cfs. The Maximum Sustainable Release is calculated each week as a function of the total available storage using forecasting techniques established by USGS. A release is deemed to be "sustainable" if the storage is available to support it without comprising the long-term performance of the system, including ability of the system to refill by June 1 each year. Calculations necessary to implement the proposed alternative are easily made using a spreadsheet and real-time data maintained by USGS.

As is shown in greater detail below, the proposed alternative is superior or equal to other alternatives for the implementation of RMP3 for almost every operational objective. This alternative substantially improves the performance of the IOP on the key biological performance measures evaluated by USFWS in the Biological Opinion. In some cases there are trade-offs, but the costs are generally marginal and the benefits are high. Overall the proposed alternative would have a substantial beneficial impact on protected species. At the same time, by keeping significantly more water in storage, the proposed alternative would provide substantial benefits to other project purposes. The proposed alternative would not have any adverse impact on flood plain connectivity, hydropower generation, flood control, or, to our knowledge, any other operating objective.

Although the proposed alternative substantially improves the IOP on every important operational objective, the IOP can be improved still further. Therefore the IOP should *still* be considered an "interim" plan, even after it is revised by adopting the Maximum Sustained Release Rule as per RPM3. Additional modifications to the revised IOP will need to be made, in particular, to accommodate long-term water supply demands. For now, however, the proposed revision should be adopted.

2. BACKGROUND

This proposal is submitted in response to a Biological Opinion issued by USFWS on September 5, 2006 to review the Interim Operations Plan for Jim Woodruff Lock and Dam ("JWLD"). The Biological Opinion (BiOp) studies the effect of the Interim Operations Plan ("IOP") for JWLD on certain threatened and endangered species present in the Apalachicola River — the threatened Gulf sturgeon and three species of threatened or endangered mussels.

As is explained further below, the Biological Opinion concludes that reservoir operations under the IOP are generally acceptable. The BiOp also recommends, however, that the IOP be revised to provide minimize instances when discharge at the Chattahoochee gage (below JWLD) is less than 10,000 cfs.

2.1 Legal Framework

The Endangered Species Act protects threatened and endangered species in two ways — by prohibiting "takings" and by prohibiting federal agencies from supporting or taking action that would "adversely impact" critical habitat.

The prohibition on "takings" is contained in Section 9. 7 U.S.C. § 1538. The act defines "take" to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" it. 16 U.S.C. § 1532(19). Although "takings" "may include significant habitat modification or degradation," that is true only if the action "actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." *See* 50 C.F.R. § 17.3. *See also Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687 (1995). The prohibition against takings applies to all persons.

The second set of protections, applicable only to federal agencies, are contained in Section 7. *See*16 U.S.C. § 1536. Section 7 requires federal agencies to consult with the Fish and Wildlife Service ("USFWS") (or, for marine species, with the National Oceanic and Atmospheric Administration Fisheries Service (formerly known as the National Marine Fisheries Service), to ensure that their actions do not "jeopardize the continued existence" of any protected species or result in the "destruction or adverse modification" of "critical habitat." *Id.*

The result of formal consultation under Section 7 is a Biological Opinion indicating whether the proposed activity is likely to jeopardize the continued existence of listed species and/or result in the destruction or adverse modification of critical habitat. When USFWS issues a no-jeopardy opinion but concludes that "takings" of individual animals are nonetheless likely, USFWS is required to include an Incidental Take Statement (ITS) as part of the Biological Opinion. *See* 7 U.S.C. § 1536(b)(4). The ITS authorizes "takings" that would otherwise be prohibited by Section 9 of the ESA. *See* 7 U.S.C. § 1536(o)(2) ("any taking that is in compliance with the terms and conditions specified in [an ITS] shall not be considered to be a prohibited taking of the species concerned.").

2.2 Threatened and Endangered Species Potentially Affected by Reservoir Operations

The Corps initiated formal consultation with USFWS on March 7, 2006 to study the effects of reservoir operations on the Gulf sturgeon and the three mussel species. Detailed information concerning these species is provided in the Biological Opinion.

2.2.1 Gulf sturgeon

The Gulf sturgeon was listed as a "threatened" species in 1991. The Apalachicola River was designated critical habitat for the sturgeon in 2003. The Apalachicola River Critical Habitat Unit constitutes approximately 10% of the total river miles included within the designation.

According to USFWS reservoir operations have the potential to affect Gulf sturgeon habitat by reducing the flow of the river at times when flows are stored (i.e., when cumulative storage is increased) and by increasing flows in the river when reservoir storage is released (i.e., when stored water is released to augment the flow of the river). BiOp at 107. Such operations could potentially affect "flow regime" and "water quality" elements of the Gulf sturgeon critical habitat. The primary concern is for spawning habitat during the spring spawning season.

USFWS has identified 117 acres of potentially suitable spawning habitat, including about 30 acres at two sites where sturgeon eggs have been collected. BiOp at 69. Two sites are known to support sturgeon spawning within the action area. BiOp at 69. The most important spawning site is a rough limestone outcrop at RM 105. *Id.* The other known site is a smooth consolidated clay outcrop at RM 99. USFWS has also identified eight other sites that contain hard-bottom substrate potentially suitable for spawning. *Id.*

2.2.2 Mussels

The other species of concern are two species mussels — the endangered fat threeridge and the threatened purple bankclimber.[1] The main concern for the mussel species is to provide them with flowing water at all times.

USFWS has also indicated that "floodplain connectivity" may be important for the host fishes that support the larval stages of these animals. The Biological Opinion nonetheless concludes that reservoir operations are not likely to have a substantial effect on floodplain connectivity.

2.3 The IOP

The Interim Operations Plan for Jim Woodruff Lock and Dam ("IOP") was included as an attachment to the letter initiating formal consultation. The IOP was developed to ensure that operations at JWLD will not adversely affect Gulf sturgeon spawning grounds or critical habitat for listed mussels. The IOP sets flow levels for the spring spawning season based on a

[1] The Biological Opinion also addresses one other species — the Chipola slabshell — but notes that only one individual of this species has ever been documented within the action area. Therefore USFWS concluded that the probability of adverse impacts to this species resulting from reservoir operations was negligible. BiOp at 67.

percentage of "basin inflow." The plan also establishes certain minimum flow levels for the protected mussels.

The Corps adopted the Interim Operations Plan ("IOP") for Jim Woodruff Lock & Dam (JWLD) on March 7, 2006. A revised plan was adopted on June 12, 2006. The IOP was revised again on September 5, 2006 in accordance with the Biological Opinion issued on that date by USFWS.

2.3.1 Flow requirements in the IOP

Flow requirements under the IOP are computed in relation to Basin Inflow ("BI"). Basin inflow is the total inflow into the ACF Basin above Jim Woodruff Dam, less any water lost through evaporation or water withdrawals.

Specific flow requirements in the IOP, as amended through September 5, 2006, are as follows:

Time period	**Basin inflow (BI) (cfs)**	**Minimum Release (cfs)**
March – May	37,400 ≤ BI	Not less than 37,400
	20,400 ≤ BI < 37,400	≥ 70% of BI Not less than 20,400
	BI < 20,400	≥ BI, but not less than 5,000
June - February	23,000 ≤ BI	Not less than 16,000
	10,000 ≤ BI < 23,000	≥ 70% of BI, but not less than 10,000
	BI < 10,000	≥ BI, but not less than 5,000

2.3.2 Ramp-down requirements in the IOP

The IOP also imposes certain "ramp-down" requirements to ensure that river levels do not fall too rapidly all at once. The "ramp-down" is the speed with which river levels are allowed to fall after periods of high flow. Ramp-down requirements are prevent animals from getting stranded on the margins of a stream when the water recedes.

The ramp-down restrictions in the IOP are as follows:

Release range	**Maximum fall rate (ft / day) measured at Chattahoochee gage**
Flows greater than 30,000 cfs	No ramping restriction
Flows greater than 20,000 cfs but <= 30,000 cfs	1.0 to 2.0 ft / day
Exceeds powerhouse capacity (16,000 cfs) but <= 20,000 cfs	0.5 to 1.0 ft /day
Within powerhouse capacity and > 8,000 cfs	0.25 to 0.5 ft /day
Release within powerhouse capacity, but less than 8,000 cfs:	0.25day / less

2.3.3 Drought Operations

The IOP does not specify how the reservoirs will be operated in the event that there is insufficient storage to meet the 5,000 cfs minimum flow requirement.

2.4 The Biological Opinion

USFWS issued the Biological Opinion on September 5, 2006. The Biological Opinion is a "no jeopardy opinion" -- USFWS concluded that operations under the IOP will not threaten the survival of any listed species or adversely affected critical habitat. The Biological Opinion does, however, conclude that "takings" of individual mussels species "may occur" when flows fall below 10,000 cfs. BiOp at 140.

A more detailed overview of the "effects analysis" for each species is provided below.

2.4.1 Gulf sturgeon

For the Gulf sturgeon, the Biological Opinion concludes that the IOP will have a "small beneficial effect relative to the baseline on habitat availability at known spawning sites downstream of JWLD. BiOp at 137.

The Biological Opinion is primarily concerned with effects of the IOP on the flow regime for spawning habitat during the spring spawning season. The primary analysis employed to evaluate these effects was to quantify the amount of habitat at known and potential spawning sites inundated during the spawning season to depths appropriate for spawning. BiOp at 111. Based on egg collections during 2005 and 2006, USFWS considers habitat to be "available" if

the habitat is inundated to depths between 8.5 feet and17.8 feet. BiOp at 70-72 (text) & 103-04 (figures). Channel configuration dictates that habitat availability is not necessarily proportional to flow, as intermediate flows can make some areas too deep while newly inundated areas are not deep enough for expected spawning.

Operations under the IOP provide slightly more water to the potential spawning grounds at the appropriate depths than historical or "run-of-river" operations. Therefore USFWS concluded that the IOP will result in a small benefit to the Gulf sturgeon.

2.4.2 Fat threeridge and purple bankclimber

For the fat threeridge and the purple bankclimber, the Biological Opinion concludes the IOP will have a "small, but not appreciable additional impact on the survival and recovery" of the species. Although the BiOp concludes that the IOP "will not appreciably diminish the ability of proposed critical habitat to function for the conservation of" either species, BiOp at 123, USFWS concluded that "takings" — in the form of "habitat modification" — "may occur" when flows are less than 10,000 cfs. BiOp at 123.

Of the five constituent elements of purple bankclimber and fat threeridge habitat, the BiOp concludes that the IOP is likely to adversely affect only the "flowing water" element. BiOp at 121. USFWS developed low-flow measures to assess this impact.

a) Low flow effects

The Biological Opinion is primarily concerned with the potential for mussels to be exposed during periods of low flow. Although mussels move in response to changing water levels, they sometimes are caught in areas too far from the receding shoreline or areas in which down-slope movement does not lead to adequately deep water. BiOp at 78. This risk of stranding is greatest when high flows are followed by low flows because mussels that move to higher ground during the high flow period may be stranded when the water level falls. Therefore, to evaluate the effect of reservoir operations, USFWS is primarily concerned with (1) rate of flow change and (2) the frequency and duration of low flows.

To study the potential impact of reservoir operations, USFWS considered the location of known mussel beds and determined whether and how often these areas would be exposed during low flows. Because the purple bankclimber prefers deeper portions of the channel, this animal is not as vulnerable to low-flow impacts as the fat threeridge. BiOp at 139. According to the Biological Opinion, fat threeridge mussels have been found in locations that are exposed at discharges as high as 10,000 cfs.

The BiOp acknowledges that flows less than 10,000 cfs occur "in almost all years" on the Apalachicola River — and hence that most mussel beds are located in areas that would not require flows of this magnitude to remain inundated. BiOp at 140. Nonetheless, USFWS speculates that, "during a series of wet years with few or no low-flow events, a fraction of the population may naturally occur at relatively high on the stream bed." BiOp at 140. USFWS also notes that "mussels may be deposited at higher elevations during flood events." *Id.* The BiOp concludes that "adverse effects will occur when low flows follow an extended period without

low flows or follow a flood event that reshapes mussel habitat and/or redistributes mussels." BiOp at 141.

b) Host fish

USFWS also noted a concern for host fish necessary to support the larval stages of the protected mussels. Although host fish for the purple bankclimber are not known, the Biological Opinion indicates that the fat threeridge is a host fish "generalist" that may infect at least three different fish families, including certain species that utilize floodplain habitat. BiOp at 120. USFWS studied "floodplain spawning habitat availability" as the principal measure of effects to potential host species. BiOp at 121.

2.4.3 Reasonable and Prudent Measures

As a condition of the ITS, USFWS is required to impose mandatory "reasonable and prudent measures" ("RPMs") to minimize the take that will occur.

The third RPM is the subject of this proposal. RPM3 provides as follows:

> **RPM3. Drought provisions**. Develop modifications to the IOP that provide a higher minimum flow to the Apalachicola River when reservoir storage and hydrologic conditions permit.
>
> As proposed, the IOP uses reservoir storage to support a 5,000 cfs minimum flow. The available data indicates that higher flows can be supportable during normal and wet hydrologic periods, and during dry periods when the reservoirs are relatively full. Conversely, during extended drier than normal conditions, it may be prudent to store more water than allowed under the IOP during certain times of the year to insure (sic) minimum water availability later.

3. CONCEPTS PRESENTED BY THE CORPS TO IMPLEMENT RPM3

At a technical workshop on December 12, 2006, the Corps presented four "concepts" in response to RPM3. For each concept, the Corps has provided detailed modeling results; these output files were used to prepare the comparative graphs in the evaluation of alternatives in Section 4.

The Corps has described the four concepts under consideration as follows:

3.1.1 Concept #1

The first concept presented was to determine the maximum low-flow the system can support. As a modeling exercise, the Corps increased the 5,000 cfs minimum flow in the IOP to higher values — 6,000 cfs, 6,300 cfs, 6,600 cfs and 8,000 cfs. The Corps reported that the results were not acceptable for any of these increased minimum flows.

3.1.2 Concept #2

The second concept presented was to decrease spawning period high flows in connection with an increase in the low flow target. The 37,400 cfs high-flow target in the IOP was reduced to 25,000 cfs; the intermediate target of 20,400 cfs was reduced to 16,000 cfs; and the 5,000 cfs minimum flow was increased to 5,800 cfs (variation 1), 6,500 cfs (variation 2) and 7,000 cfs (variation 3). Again, the Corps reported that the results were not acceptable for any of these variations.

3.1.3 Concept #3

The third concept presented was to use "system composite storage" as a drought trigger for "desired flow" of 6,500 cfs and the "required flow" of 5,000. Under this concept, the drought trigger is activated when "system composite storage" is in Zone 3. The drought trigger would be deactivated when the system composite storage recovers to Zone 1. The Corps reported that het results for this concept appeared to be promising.

3.1.4 Concept #4

The fourth concept was to increase the percentage of flows that can be stored when Basin Inflow is greater than 10,000 cfs from 30% to 50%. This concept was modeled as an "add-on" to Concept #3. The Corps stated that this concept appeared to produce few benefits in addition to Concept #3.

4. PROPOSED ALTERNATIVE CONCEPT FOR THE IMPLEMENTATION OF RPM3

The proposed alternative for RPM3 is superior or equal to Concept #3 for almost every operational objective. This alternative, which will be called the Maximum Sustainable Release Rule ("MSRR"), substantially improves the performance of the IOP on the key biological performance measures evaluated by USFWS in the Biological Opinion. In some cases there are trade-offs, but the costs are generally marginal and the benefits are high. Overall the proposed alternative would have a substantial beneficial impact on protected species. At the same time, by keeping significantly more water in storage, the proposed alternative would provide substantial benefits to other project purposes. The proposed alternative would not have any adverse impact on flood plain connectivity, hydropower generation, flood control, or, to our knowledge, any other operating objective.

4.1 Overview

The basic concept of the MSRR is to provide the maximum sustainable release from Jim Woodruff Dam, up to 10,000 cfs, that can be maintained while also allowing the reservoirs upstream in the Chattahoochee Basin to refill by the following June 1. The maximum sustainable release is calculated based on the current storage in the reservoirs and a forecast of future inflows. The forecast is made using probabilistic streamflow forecasting techniques developed and published by the USGS.

Although the MSRR does not utilize reservoir storage to provide flows in excess of 10,000 cfs, such flows occur from Flint River flow and when the reservoirs are full. Because the MSRR allows the reservoirs to refill early and often, flows in excess of 10,000 cfs are provided in a pattern that is at least as beneficial (and often more beneficial) for the protection and enhancement of threatened and endangered species than the flows provided by the IOP, as demonstrated in the evaluation below.

The MSRR increases the minimum flow whenever sufficient water is available to meet the increased minimum, provide for the long-term support of all uses, and still refill the reservoirs by the following June 1. The calculation of the water available includes a conservative forecast of expected inflows (inflows expected to be exceeded 90% of the time) based on basin conditions. The forecast is done using a USGS developed technique that relies only on antecedent inflows, and not on weather forecasts. Documentation of this technique is available from the USGS, and is attached.

As stated above, the refilling of the reservoirs is crucial to the improved performance of the MSRR relative to the IOP for the protection of endangered and threatened species. Because the reservoirs fill early and often in the spring, crucial spawning flows are most often maintained at levels equal to the full basin inflow. Moreover, because the reservoirs do not often empty, there is usually sufficient water to maintain minimum flows well in excess of 5000 cfs, as envisioned in RPM3.

The MSRR stores the water necessary to meet the increased minimum whenever the inflow between Lake Eufala and Lake Seminole, including the Flint River inflow, rises above the maximum sustainable release. A new maximum sustainable release is computed each week so that as storage improves, the maximum sustainable release also rises. In addition, the MSRR restricts releases to 5000 cfs whenever there is not enough water in the system to sustain that flow over a repeat of the worst historical drought and still have a margin of safety. This ensures enough water will remain in the system to "insure minimum water availability later."

As will be shown below, the rules contained in the MSRR implement RPM3 in a manner that substantially improves the IOP in its protection threatened and endangered species and many other performance measures.

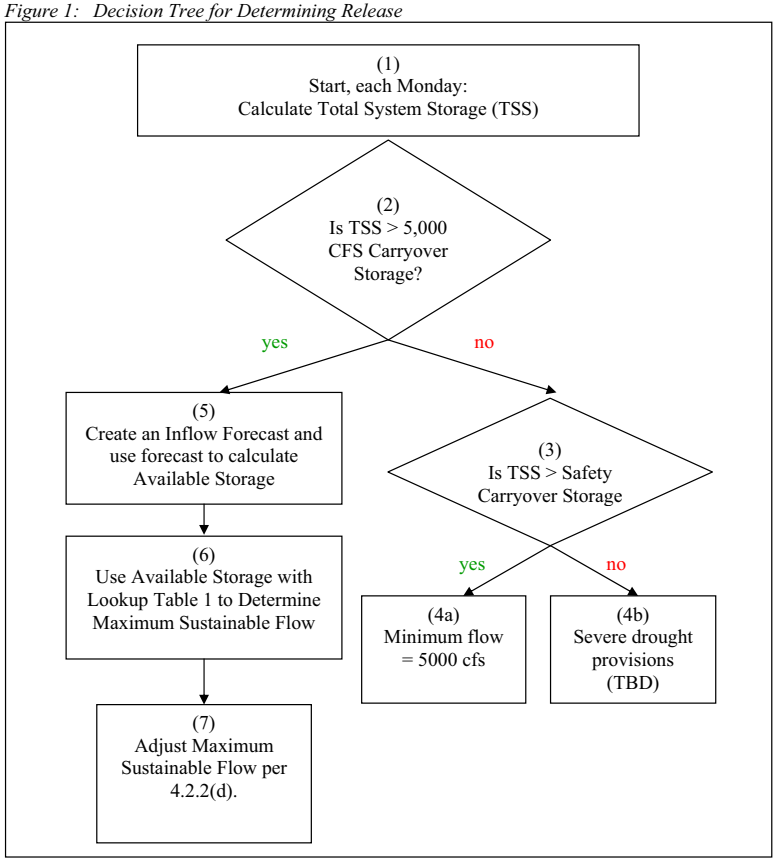
4.2 The Maximum Sustainable Release Rule (MSRR)

The basic concept of the proposed revision is to provide the Maximum Sustainable Release that can be supported by JWLD, up to 10,000 cfs. The Maximum Sustainable Release is calculated each week as a function of the total Available Storage using forecasting techniques established by USGS. A release is deemed to be "sustainable" if the storage is available to support it without comprising the long-term performance of the system, including ability of the system to refill by June 1 each year. Calculations necessary to implement the proposed alternative are easily made using a spreadsheet and real-time data maintained by USGS.

A decision tree is provided below (Figure 1) to show how to determine the Maximum Sustainable Flow on a weekly basis. The right side of the decision tree — dealing with "Carryover Storages" — is discussed in Section 4.2.1 below. The left side — calculation of the

Maximum Sustained Release when Total System Storage exceeds Carryover Storages — is discussed in Section 4.2.2.

Figure 1: Decision Tree for Determining Release



4.2.1 Carryover Storages

The primary goal of the MSRR is to provide the maximum sustainable flow at Woodruff as requested by RPM 3. Carryover Storages are storages that need to be preserved to meet critical needs over the long term. These storages are used to determine when flows must be

curtailed to meet such needs. Two critical needs are given top priority: the protection of public health and safety and protection of endangered species. The amount of "Carryover Storage" necessary to support each of these needs throughout a critical drought has been calculated and is shown in Figure 3.

a) Public Health and Safety

Losing the ability to provide drinking water and fire protection to the citizens of Alabama, Georgia, and Florida would be devastating to the region. Therefore the volume of water needed to protect public health and safety through a multi-year drought, called the Public Health and Safety Carryover Storage (or Safety Storage), should be maintained in storage at all times. In the MSRR, this volume was determined by running a simulation with 2030 demands and minimum flow requirements at Atlanta and Columbus only. The maximum drawdown in the four major reservoirs over the historic record is designated as the Public Health and Safety Storage — this is the volume of water that would have been needed to get through the worst drought on record.

b) 5,000 CFS Carryover Storage

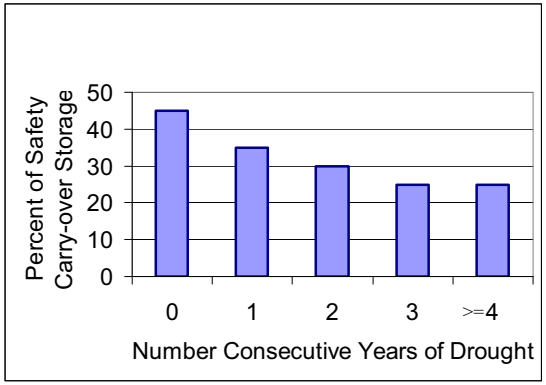
In addition to public health and safety, endangered species must be protected throughout a critical drought. Therefore the amount of storage needed to support threatened and endangered species must be preserved in system storage at all times. The storage set-aside to meet these needs is called the 5,000 CFS Carryover Storage.

In the MSRR, the 5,000 CFS Carryover Storage is set-aside to meet the 5,000 cfs minimum flow requirement and also to meet the ramping rates specified in the IOP. Larger minimum flows are supported when possible, but these are the minimum requirements. The amount of 5,000 CFS Carryover storage was determined using the same method as for the Public Health and Safety Carryover Storage: simulations were done with demands, minimum flow requirements at Atlanta and Columbus, and the releases at Woodruff listed above. The maximum drawdown in the four major reservoirs over the historic record is the volume of water that would have been needed to sustain the 5,000 cfs minimum flow and IOP ramping rates throughout the worst historical drought.

c) Margin of Safety

Because future droughts may be worse than the historical drought of record, a margin of safety is added to both Carryover Storages. The margin of safety decreases each year of an ongoing drought to balance the impacts of lower flows on the environment and water-use restrictions on public health and welfare against the risk that the drought will continue. The margins of safety used in the demonstration run are shown in Figure 2; these percentages are multiplied by the Public Health and Safety Carryover Storage to set-aside an additional volume of water. Although calculated as a percentage of the Public Health and Safety Carryover Storage, the Margin of Safety is divided evenly between the two Carryover Storages.

Figure 2: Margin of Safety



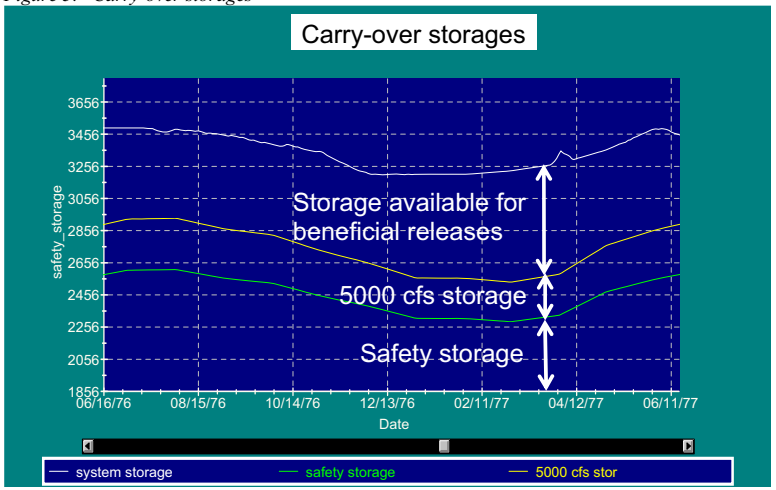
It is important to note that the MSRR manages storage in such a way that available storage will not reach or approach levels below those needed to maintain public health and safety during a repeat of any historical drought period. The provision of a margin of safety adds an additional measure of security, ensuring that the system can adapt to future droughts worse than those in the historical record. Further, it is important to understand that the performance of the MSRR will not be enhanced by reducing Carryover Storage or the Margin of Safety. The success of the MSRR is based on its strategy of allowing the reservoirs to refill early and often. Thus, providing a margin of safety would not conflict with achieving environmental objectives during a repeat of any historical drought. Also note that a similar margin of safety is provided for meeting critical instream flow needs below Woodruff Dam, as detailed below.

Figure 3 illustrates the Carryover Storages in relation to Total System Storage. The Carryover Storages vary seasonally following the drawdown pattern of the tops of conservation pools. A representative year, 1976, is shown in the figure; the seasonal pattern is the same in all other years. The margin of safety varies from year to year depending on the number of consecutive drought years. In 1976, there was no drought, so there is a 45% margin of safety added to the Carryover Storage. During prolonged droughts, this can drop to as low as 25%. The margin of safety was divided evenly between the Public Health and Safety Storage and the 5,000 CFS Carryover Storage. Therefore, the green line in Figure 3 shows the Public Health and Safety Carryover Storage — the maximum historical drawdown to meet public health and safety needs plus 22.5%. The distance between the yellow and green lines is the 5,000 CFS Carryover Storage—the maximum historical drawdown to support at least 5000 cfs at Woodruff and the ramping rates defined in the IOP plus 1/2 of the Margin of Safety.

The white line in Figure 3 shows the Total System Storage in 1976. System storage is defined as the sum of the storages in Lanier, West Point, and WF George. Whenever Total System Storage is less than the amount required for 5,000 CFS Carryover Storage, releases are curtailed unless necessary to meet the 5,000 cfs minimum and the IOP ramping rates. *This only*

happens once during the entire period of record in the MSRR, for about three months in 2000. If Total System Storage were ever to fall below the amount required for Safety Storage, extreme drought provisions would be triggered and the 5,000 cfs minimum might need to be relaxed by necessity. This *never* happens in the historical simulation of the MSRR. The system storage remains above the Carryover Storages in large part because releases to benefit protected species are made so as to be sustainable. The process used to determined beneficial releases is described in the next section.

Figure 3: Carry-over storages



d) Operations During Extreme Drought: Release Decisions Based on Carryover Storage Levels

As stated above, the Carryover Storages are established to indicate when releases must be curtailed to preserve the ability of the system to meet critical needs over the long term. If Total System Storage is less than Instream Flow Carryover Storage, releases are restricted to the amount necessary to meet the 5,000 cfs minimum flow and IOP ramp-down provisions. If Total System Storage is less than the Safety Carryover Storage, the MSRR does not specify any definite minimum flow.

The IOP does not specify what emergency measures would be taken if a more severe than historical drought were to occur, either. Thus, the only way to compare the MSRR and the IOP with regard to extreme droughts is to look at the storage levels likely to occur when operators realize that the potential for such a drought exists and begin to take emergency measures. The more storage available at that time, the more flexibility the operators will have to deal with the situation.

By setting aside Carryover Storages based on the most severe drought on record plus a sufficient margin of safety, the MSRR is designed to minimize or eliminate the likelihood that such provisions will ever be triggered. Minimum system storage under the MSRR is considerably higher than the minimum storage that would have occurred using the IOP. This indicates that the MSRR provides a considerably higher level of reliability in the face of extreme drought than does the IOP.

4.2.2 Determining the Maximum Sustainable Flow When Total System Storage Exceeds Carryover Storages

The steps used to determine the Maximum Sustainable Flow when Total System Storage exceeds the Carryover Storages are discussed below. The logic of the rule is to increase the minimum flow whenever (1) Total System Storage exceeds the Carryover Storages, and (2) sufficient water is available in storage to allow the reservoirs to refill by the following June 1; and (3) such releases can be made without compromising the ability of the system to meet critical needs. The calculation of available storage includes a conservative forecast of expected inflows (inflows expected to be exceeded 90% of the time) based on basin conditions. This rule provides a rational, sustainable basis for determining how much water to release in excess of the minimum requirements. Enhancement releases are determined such that system storage will refill each year with a high level of certainty.

a) Create an Inflow Forecast

The first step is to create an Inflow Forecast to provide expected amounts of inflows corresponding to different levels of probability. This information is used to determine the maximum flow that can be maintained at Woodruff while still allowing the system to refill each year with a high level of certainty.

While future rainfall cannot be accurately predicted, there are two sources of information to guide operational decision-making: historical statistics and forecasts of inflow. Forecasting methods make use of the correlation between current and future conditions: if inflows have been low, they tend to stay low, and vice versa. This is essentially because when conditions are dry, there is more evaporation and infiltration and hence less runoff, and vice versa.

Within about four month's time, the inflows forecast by conditional forecast methods converge to the inflows that would be forecast using historical statistics. In other words, although streamflow conditions are strongly autocorrelated from one month to another, the correlation weakens as the forecast period is lengthened, and the correlation is essentially zero by the time the forecast period is extended to four months. At this point, historical statistics provide the best available forecast.

There are a number of forecasting techniques, all of which give a shift in mean and variance based on antecedent inflows. A technique has been developed by Robert Hirsch of the USGS, and that program has been adapted for ease of use and integration with HECDSS by HydroLogics Inc. Documentation of this technique from the USGS is attached. The USGS technique is easy to implement. The adaptations made by Hydrologics do not affect the underlying methodology, and the forecast program can be made available to the USACE free of

charge. Alternatively, the USACE could obtain the original program from the USGS. In practice, running the forecast program requires that antecedent inflow data be kept current and formatted to suit the program. The data is already kept current and formatting can be easily automated. Running the forecast program takes less than one second.

Hydrologics has used the program to re-create the forecasts that would have been made each week in the hydrologic record. These "historical" forecasts were used to show how the MSRR would have performed in the past, using the forecasts. The results prove that the combination of the forecasting technique and the MSRR is effective given the existing accuracy and precision of the USGS forecasting technique. Producing and using forecasts in the manner incorporated in the MSRR is eminently practical. Such forecasts are currently being used operationally by a number of agencies, including the North Carolina Department of Natural Resources.

b) Calculate Available Storage — Storage in Excess of the Amount Necessary to Allow the System to Refill by June 1

The next step is to calculate "Available Storage" based on the Inflow Forecast at the 90% probability level (such that inflow has a 90% probability of exceeding the forecasted value). Available Storage is the amount of storage on hand in excess of the amount necessary to allow the system to refill by June 1.

Available Storage is calculated as the forecasted 90% inflow less (1) water supply (expected demand for all users above and including Whitesburg); (2) minimum flow requirements at Atlanta (number of days till June 1 times 750 cfs); (3) evaporation (average between now and June 1); and (4) void (volume in Lake Lanier between current storage and top of conservation pool on June 1[2]). The resulting volume — Available Storage — is roughly the amount of water that can be released from Lake Lanier while maintaining a 90% chance of refill by the following June 1.

c) Calculate the Maximum Sustainable Release

The Maximum Sustainable Release is determined as a function of Available Storage. This determination is made each Monday in the simulation. The Maximum Sustainable Release is given as a function of Available Storage in the lookup table provided in Table 1.

[2] For this calculation, Lake Lanier is used as a surrogate for system storage — it is assumed that the entire system will be full if Lake Lanier is full. Lake Lanier is a reasonable surrogate for the entire system because Lake Lanier takes much longer to refill than any of the other reservoirs.

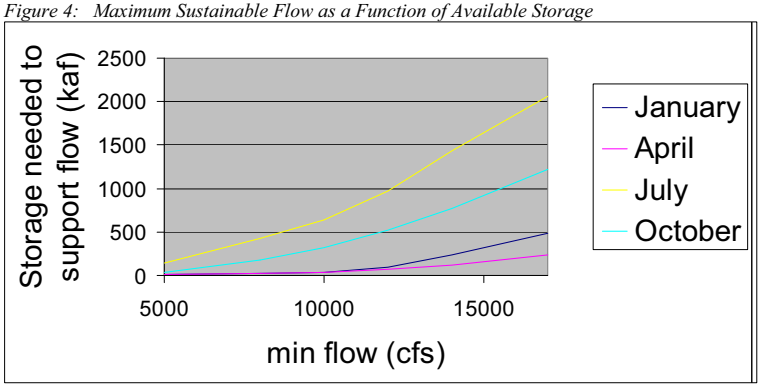
Table 1: Maximum Sustainable Release from Woodruff (cfs)

Available Storage (af)	1/1	2/1	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1
0	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
7000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
14000	5000	6432	6544	6544	6546	5000	5000	5000	5000	5000	5000	5546
21000	5571	9700	9700	9704	9707	5000	5000	5000	5000	5000	5522	6155
28000	6243	10000	10000	10000	10000	5000	5000	5000	5000	5000	5720	6672
42000	9106	10000	10000	10000	10000	5000	5000	5000	5000	5088	6184	9238
49000	9753	10000	10000	10000	10000	5000	5000	5000	5000	5213	6391	10000
56000	10000	10000	10000	10000	10000	5000	5000	5000	5000	5313	8683	10000
63000	10000	10000	10000	10000	10000	5000	5000	5000	5000	5432	8922	10000
77000	10000	10000	10000	10000	10000	5000	5000	5000	5046	5853	9345	10000
84000	10000	10000	10000	10000	10000	5000	5000	5000	5302	5942	9369	10000
98000	10000	10000	10000	10000	10000	5000	5000	5000	5470	6171	10000	10000
105000	10000	10000	10000	10000	10000	5000	5000	5000	5554	6282	10000	10000
112000	10000	10000	10000	10000	10000	5000	5000	5000	5607	6597	10000	10000
126000	10000	10000	10000	10000	10000	5000	5000	5043	5985	6817	10000	10000
133000	10000	10000	10000	10000	10000	5000	5000	5128	6068	6924	10000	10000
140000	10000	10000	10000	10000	10000	5094	5000	5307	6118	6990	10000	10000
154000	10000	10000	10000	10000	10000	5359	5084	5476	6280	8988	10000	10000
161000	10000	10000	10000	10000	10000	5501	5148	5557	6360	9111	10000	10000
168000	10000	10000	10000	10000	10000	5315	5282	5616	6635	9175	10000	10000
182000	10000	10000	10000	10000	10000	5577	5409	5932	6795	9407	10000	10000
189000	10000	10000	10000	10000	10000	5717	5471	6009	6874	9519	10000	10000
196000	10000	10000	10000	10000	10000	5932	5517	6058	6920	9867	10000	10000
210000	10000	10000	10000	10000	10000	5777	5747	6203	8780	10000	10000	10000
217000	10000	10000	10000	10000	10000	5916	5807	6272	8874	10000	10000	10000
231000	10000	10000	10000	10000	10000	6286	5904	6592	9017	10000	10000	10000
238000	10000	10000	10000	10000	10000	6450	5960	6660	9109	10000	10000	10000
245000	10000	10000	10000	10000	10000	6097	6097	6725	9506	10000	10000	10000
259000	10000	10000	10000	10000	10000	6463	6245	8494	9633	10000	10000	10000
266000	10000	10000	10000	10000	10000	6623	6299	8569	9701	10000	10000	10000
273000	10000	10000	10000	10000	10000	6791	6352	8642	9769	10000	10000	10000
287000	10000	10000	10000	10000	10000	6625	6600	8733	10000	10000	10000	10000
294000	10000	10000	10000	10000	10000	6782	6651	8801	10000	10000	10000	10000
308000	10000	10000	10000	10000	10000	8655	6725	9251	10000	10000	10000	10000
315000	10000	10000	10000	10000	10000	8878	6773	9315	10000	10000	10000	10000
322000	10000	10000	10000	10000	10000	6927	6927	9377	10000	10000	10000	10000
336000	10000	10000	10000	10000	10000	8818	8498	9826	10000	10000	10000	10000
343000	10000	10000	10000	10000	10000	9034	8553	9875	10000	10000	10000	10000
357000	10000	10000	10000	10000	10000	9499	8660	9970	10000	10000	10000	10000
364000	10000	10000	10000	10000	10000	8966	8943	9960	10000	10000	10000	10000
378000	10000	10000	10000	10000	10000	9397	9045	10000	10000	10000	10000	10000
385000	10000	10000	10000	10000	10000	9624	9095	10000	10000	10000	10000	10000
399000	10000	10000	10000	10000	10000	9308	9308	10000	10000	10000	10000	10000
406000	10000	10000	10000	10000	10000	9521	9501	10000	10000	10000	10000	10000
420000	10000	10000	10000	10000	10000	10000	9547	10000	10000	10000	10000	10000

427000	10000	10000	10000	10000	10000	10000	9591	10000	10000	10000	10000	10000
430000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000

The flows in Table 1 were derived from a series of graphs similar to Figure 4. To determine the Maximum Sustainable Flow on July 1 from Figure 4, first determine the Available Storage. If Available Storage is 500 kaf, the Maximum Sustainable Flow is about 8500 cfs. This is the flow can be supported at Woodruff without compromising the ability of the reservoirs to refill by June 1. Note that the same amount of Available Storage in April could be used to support a much higher minimum flow.

Figure 4: Maximum Sustainable Flow as a Function of Available Storage



Curves similar to those shown in Figure 4 have been developed for each month of the year, as reflected in Table 1. These graphs were generated by calculating the difference between the desired flow and historical inflows each day to give the water needed from storage that day, if any. These daily values were then summed between present and June 1. To provide a high level of reliability, the 90th percentile of historic inflows were used, meaning that if all years in the historic record were ranked from wettest to driest, 10% of the years would be drier and 90% wetter than the inflows used in the analysis. 90th percentile inflows to the basin remain above 7000 cfs for much of the year, so the average of the driest three years was used in place of the 90th percentile below 7000 cfs and values were interpolated between these values and the 90th percentile at 9000 cfs.

In addition, when the value of Maximum Sustainable Flow obtained from the curves is greater than 7,000 cfs, it is adjusted upward by 20%. Trial and error has shown that the upwardly adjusted flows can be maintained without impact on other objectives. The boosted values are reflected in Table 1.

d) Adjust the Maximum Sustainable Flows

Finally, once the Maximum Sustainable Release is determined from Table 1, it is subject to three possible alterations developed by trial and error to enhance the performance of the operating rules: (1) a ramping rate restriction and (2) a limitation on maximum sustainable releases over 10,000 cfs. Again, all three of these alterations improved the performance of the MSRR on the performance measures shown in the previous section.

i *Ramping rate restriction.*

To avoid extreme jumps in the minimum flow requirement from week to week, a ramping rate restriction of 1,400 cfs / week is imposed. The daily change in releases from Woodruff, and thus impacts due to ramping on by endangered species in the Apalachicola, are controlled by the ramping rates used in the IOP.

ii *Limitation on Maximum Sustainable Releases Over 10,000 cfs.*

In the MSRR, flows above 10,000 cfs are not supported from storage. Imposing this limit resulted in significantly better flows for the mussels and caused little change in sturgeon spawning habitat or floodplain connectivity. Flows above 10,000 cfs are still common due to inflows from the Flint River and spill from the reservoirs — this is the reason the MSRR performs well on the sturgeon spawning performance measure.

4.2.3 Other Operational Criteria

a) Hydropower Releases

In the MSRR, releases equivalent to three hours of generation at capacity are made under the following conditions: (1) stages are above initial recreation impact level, (2) the day-ahead projected prices are above average, and (3) forecasted inflows for the year are above the 35th percentile. Otherwise, there is no provision for making hydropower releases, or even for reducing releases on weekends to increase the value of power generated during the week. In spite of this limited attention to hydropower, the MSRR produces slightly more power, and slightly more valuable power than does the IOP. In evaluating the value of hydropower, it is assumed that releases are made during peak hours whenever possible.

For this generation rule, the current stage at Lanier and forecasted inflows to Lanier were used to flag days when power releases should be made. For day-ahead projected prices the average daily day-ahead ERCOT prices from 2002-2005 were used; the first Mondays in January for each of these years were aligned to determine the average, and leap-day was accounted for.

b) Reservoir Balancing

The MSRR moves water from upstream reservoirs to downstream reservoirs to balance storage in zones, as does the IOP. The MSRR zones have been adjusted to provide a balance of recreation impact days between the three reservoirs. All three reservoirs are drawn down together insofar as possible to the level where initial recreational impacts begin to occur. Below

that level, the reservoirs are emptied by zones, from downstream to upstream. Details of the reservoir balancing scheme and its performance relative to the IOP are discussed below.

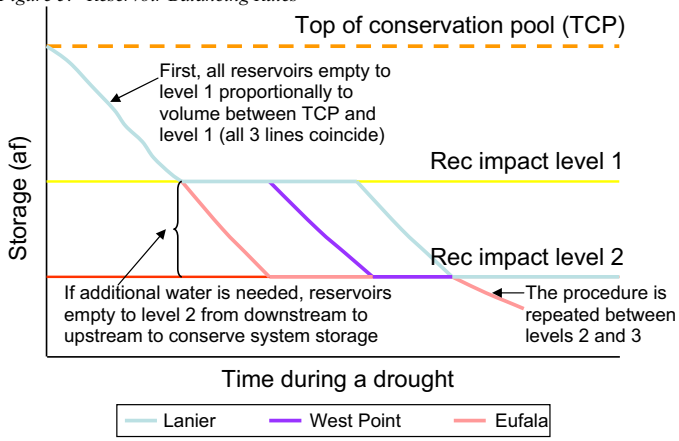
Recreation impact levels were taken from the USACE 1989 Draft Water Control Plan; the values are shown in Table 2. In the following discussion, initial recreation impact is referred to as level 1, recreation impact as level 2, and water restriction as level 3, as shown in columns A and B. Note that applying these impact levels at Eufala for reservoir balancing resulted in stages below historical, so the numbers were increased as shown in the table: Eufala was balanced according to the amended values (column F), while recreation impact was assed with the EIS values (column E).

Table 2: Corps Recreation Impact Levels

A	B	C	D	E	F
Recreation impact level	Terminology from EIS	Lanier (ft)	West Point (ft)	Eufala EIS (ft)	Eufala MSRR (ft)
Level 1	Initial impact	1066	632	187	187
Level 2	Impact	1063	628	185	186.5
Level 3	Water restriction	1060	627	184	185.5

When water is needed from storage, the Lanier, West Point, and Eufala stages are reduced together between their top of conservation pools and recreation Impact Level 1. Specifically, the percentage of the volume between Impact Level 1 and the top of conservation pool is kept the same for the three reservoirs. This is shown in Figure 5, which illustrates the reservoir balancing rules implemented in the MSRR. Note that the shape of these lines depends on the rate of storage emptied from the system. The recreation impact levels and top of conservation pool are in equivalent storages.

Figure 5: Reservoir Balancing Rules



Once the stages of the three reservoirs are at Impact Level 1, there is the real possibility that the system will not refill in the spring, so water is conserved upstream. Specifically, Lanier and West Point are kept at level 1, while Eufala's stage is reduced to Impact Level 2; then Lanier and Eufala are kept at levels 1 and 2 respectively as West Point is reduced to Impact Level 2; and finally Lanier is reduced to level 2, while West Point and Eufala stay at Impact Level 2 (see Figure 5). If more water is needed from storage, the procedure is repeated between recreation Impact Levels 2 and 3. In theory, the same procedure would be used between level 3 and dead storage, but the only time the reservoirs fall below level 3 in the MSRR period of record run is in the 2000 drought, and in this case, all three reservoirs empty below level 3 as they meet local flow requirements and consumptive demands.

One of the reasons reservoir levels do not drop further in the 2000 drought is that by preserving water upstream when the reservoirs fall below impact level 1, there is more system storage entering the drought (May 2000) in the MSRR that the IOP or historically. By preserving water upstream when necessary, all the reservoirs benefit in the following year, as evidenced by the dramatically better performance of the MSRR on the recreation performance measures.

In practice, the reservoir stages do not follow Figure 5 exactly. While this is the guiding principle, the reality is complicated by two issues: water cannot be moved from downstream to upstream and there are physical limitations on the rate at which water can be moved downstream. For example, water from Lanier must be used to meet all of the demands and instream flow requirements north of West Point. As a result, Lanier may be pulled down more rapidly to meet these needs, but the reservoirs are rebalanced when possible.

Recreation impact levels were not included in the EIS for Lake Seminole. In the MSRR, Seminole is kept at top of conservation pool until the stages of other three reservoirs reach level 1. Seminole is then brought down to bottom of conservation pool (76 feet) before Eufala is taken below level 1. Eufala drops below bottom of conservation pool in the 2000 drought only; in this case, the stage is kept above 75.5 feet at all times. Operations at Seminole can be further refined with appropriate recreation impact information.

The stages for top and bottom of conservation pool was taken from the IOP: the MSRR does not alter flood control rules.

4.3 Summary

The required releases from Woodruff are summarized in Table 3.

Table 3: Summary of Required Releases

Level of System Storage	Minimum Release from Woodruff
Total System Storage > full	100% of Basin Inflow
Total System Storage > Instream Flow Carryover Storage	Maximum Sustainable Release
System Storage > Public Health and Safety Carryover Storage	5000 cfs + IOP Ramping
System Storage < Public Health and Safety Carryover Storage	Severe Drought Provisions (TBD)

5. IMPLEMENTATION

5.1 Similarities and Differences Between MSRR and IOP / Concept #3

The MSRR is a refinement of Concept #3 in that both use a measure of available storage to determine whether flows higher than the 5,000 cfs minimum can be provided. The main difference between this plan and Concept #3 is (1) the use of a conditional forecasting technique to determine when flows *higher* than the "desired flow" of 6,500 cfs can be provided; and (2) the use of "available storage" to determine the *maximium* flow that can be sustained, instead of using "system composite storage" as an on-off "drought trigger" to toggle between "minimum flow" of 5,000 cfs and the "desired flow" of 6,500 cfs. This alternative also incorporates elements of concept #4, which was to increase the amount of basin inflow that can be stored when basin inflow exceeds 10,000 cfs. Under the MSRR, flows in excess of 10,000 cfs are stored to permit the reservoirs to refill.

Other provisions of the IOP (and/or "existing operations") are directly incorporated in the MSRR. These include:

1) Top of conservation pool rule curves and flood control operations,

2) Bottom of conservation pool assumptions,

3) Instream flow requirements upstream of Jim Woodruff dam,

4) Water supply requirements

5) Ramping rates

6) Minimum flow requirement of 5000 cfs at Jim Woodruff Dam

In addition, the MSRR is based on many concepts that are implemented in the IOP, although in a different form. These include the following:

1) In the IOP, release requirements at Jim Woodruff Dam are based on Basin Inflow and time of year. Concept #3 also includes consideration of system storage in determining releases. In the MSRR, releases below Woodruff are based on those factors, and on storage in the system as a whole and on forecasts. These changes are necessary to implement the requirement of RPM3 to base minimum releases on basin conditions.

2) Releases in both the IOP and the MSRR seek to maintain natural patterns of flows below Woodruff Dam. The IOP does this by specifying that the releases be a percentage of Basin Inflow. The MSRR achieves this objective more effectively by ensuring that the reservoirs fill early in most years. Once the reservoirs are full, they must pass 100% of Basin Inflow in order to maintain flood control storage. The result of this change in implementation strategy is better performance for all the biological performance measures used in the BiOP. The change in strategy is an implementation of the RPM3 directive to "store more water than allowed under the IOP during certain times of the year to insure minimum water availability later." The water stored by filling the reservoirs early is used to establish appropriate sustainable minimum flow (which ca be any value between 5000 and 1000 cfs). In most years that flow is substantially in excess of 5,000 cfs, per the directives in RPM3.

3) Both the IOP and the MSRR contain provisions for maintaining hydropower generation. The IOP requirements provide for setting a number of hours of weekday generation at individual reservoirs based on the storage in each reservoir. The MSRR bases this requirement for all reservoirs on a variety of conditions, including storage in Lake Lanier, forecast inflows, and historical day-ahead energy prices. All of this information should be readily available to operators in real time. The reason this is done is, again, to "store more water than allowed under the IOP during certain times of the year to insure minimum water availability later." The result of implementing this strategy is improved biological performance, slightly higher overall power generation, and slightly higher value of power generated. The changes in power benefits are not significant in our opinion.

4) Both the IOP and the MSRR contain provisions for balancing storage among reservoirs. In the MSRR this is designed to balance two objectives: (a) maintain the highest level of system storage over the long run, and (b) equalize the number of days of recreation impacts among the reservoir pools.

The balancing strategy employed by the MSRR effectively equalizes recreational impacts among the lakes without significantly affecting water supply reliability or environmental or any other purposes. Coupled with the strategy of storing water to ensure higher minimum flows, the balancing strategy results in a wholesale reduction in recreational impacts compared to the IOP and Concept #3.

5.2 Ease of Implementing the MSRR

The MSRR is an extremely practical operating rule. All the data needed to evaluate releases each day are available, the forecast technique is available, uses only up to date flow data, which is also available, and takes very, very little time and almost no training to run. Historical day-ahead energy prices are also available. The calculations necessary are easily implemented in a spreadsheet. We see no practical impediments to expeditiously implementing the MSRR.

That said, we recognize that USACE will need to validate the results presented below before implementing MSRR as RPM3. ARC and Hydrologics will make available to USACE any information, data or other resources necessary to validate the rule. Copies of the input and output files are attached.

Moreover, although the MSRR is superior in performance to the IOP and Concept #3, we are certain that operating rules superior to the MSRR can be developed. We stand ready to work with the USACE towards the development of better operating policies. However, we will firmly oppose the implementation of operating policies that are clearly inferior to the MSRR.

6. EVALUATION OF PROPOSED ALTERNATIVES FOR RPM3 BASED ON SPECIFIC OPERATIONAL OBJECTIVES

As is shown in greater detail below, the MSRR significantly out-performs the IOP on many objectives and does not perform significantly less well on any of the others. This alternative provides superior protection to threatened species while, at the same time, keeping significantly more water in storage and thus benefiting other project purposes. The proposed alternative would not have any adverse impact on flood plain connectivity, hydropower generation, flood control, or, to our knowledge, any other operating objective.

The parameters of an operating rule (e.g. the exact values in lookup tables relating available storage to releases, or the exact levels (rule curves) used for balancing storage among reservoirs) are derived by trial and error using simulation models (i.e. the parameters of the rule are "tuned" to achieve superior performance). This was done, at least to some degree, in developing the IOP. Lack of time has prevented us from extensive tuning of the parameters of the MSRR. Therefore, we are certain that the rule presented below can be tuned for even better performance. In addition, it is likely possible to invent alternative forms for operating rules. Such rules could be superior to the MSRR. We urge the USACE to work with stakeholders to develop better forms of operating rules, and we stand ready to assist.

The following sections compare the performance of the proposed implementation of the MSRR with historical operations and operations under the IOP.

6.1 Protection and Enhancement of Threatened and Endangered Species

The conclusions in the Biological Opinion are based on the "biologically relevant" characteristics of the flow regime for each species. USFWS developed graphs developed to plot these characteristics for the "baseline" (historical) and "run-of-river" scenarios against the IOP. USFWS then used following chart to determine whether the IOP would have an "adverse" or "beneficial" effect on the species.

Figure 6 (BiOp Figure 4.2.A): Evaluation of Effects

	Biologically Relevant Flow Regime Characteristic: Adverse ← Condition Gradient → Beneficial			Interpretation of IOP Alteration
1	Baseline	IOP	RoR	Beneficial, but not attributable to the IOP
2	Baseline	RoR	IOP	Beneficial
3	IOP	Baseline	RoR	Adverse
4	IOP	RoR	Baseline	Adverse
5	RoR	Baseline	IOP	Beneficial
6	RoR	IOP	Baseline	Adverse, but not attributable to the IOP

The same graphs, and the same chart, should be utilized to evaluate any proposed revision to implement RPM3. The actual graphs utilized by USFWS in the Biological Opinion are reproduced in Section 4, except that one line has been added to each graph to represent the Corps' "Concept #3" and another has been added to represent the revision proposed by ARC (the "Maximum Sustainable Release Rule").

Based on these performance measures, the proposed alternative out-performs the IOP and Concept #3 in the protection and enhancement of habitat for threatened and endangered species. The proposed alternative also performs better than or at least equal to the "baseline" and "run-of-river" alternatives for every performance measure evaluated by USFWS in the Biological Opinion.

6.2 Mussel Species

Figure 7 (BiOp Figure 4.2.2.A): Flow Frequency at the Chattahoochee Gage

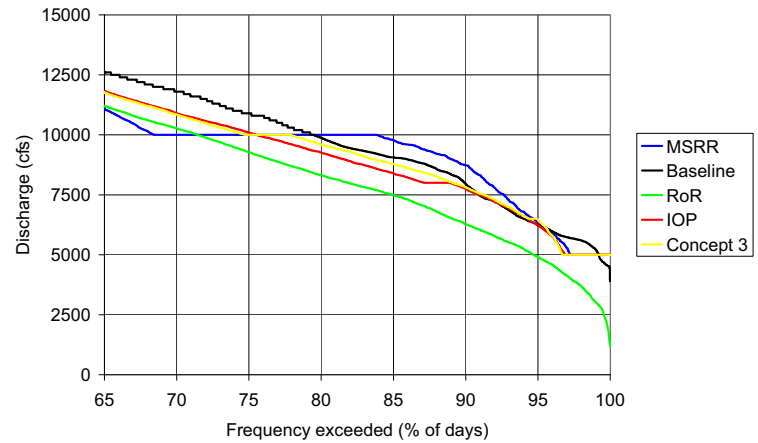


Figure 7 (BiOp Figure 4.2.2.A) shows the flow frequency at the Chatahoochee gage. Higher values are better According to the BiOp, fat threeridge mussels may occasionally be affected by flows below 10,000 cfs. The graph shows the distribution of such flows for each of the cases. The MSRR has significantly lower frequencies of flows from 10,000 cfs to approximately 6000 cfs, and approximately the same frequency of flows lower than 6000 cfs compared to the IOP and Concept 3. Therefore the MSRR is more desirable in terms of this performance measure.

Figure 8 (BiOp Figure 4.2.5.A): Inter-Annual Frequency of Discharge Events

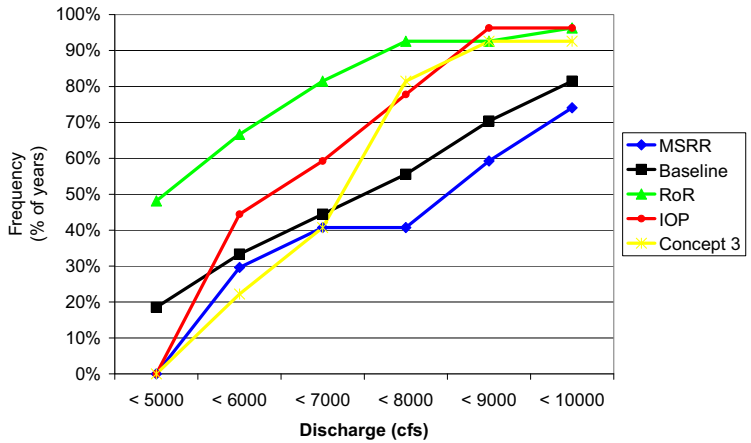


Figure 8 (BiOp Figure 4.2.5.A) shows the percent of years with flows below thresholds from 5,000 to 10,000 cfs in 1,000 cfs increments. Lower numbers are better. With the minor exception of Concept 3 at flows of 6,000 cfs, the MSRR performance is superior.

Figure 9 (BiOp Figure 4.2.5.B): Number of Low-Flow Days in the Worst Year

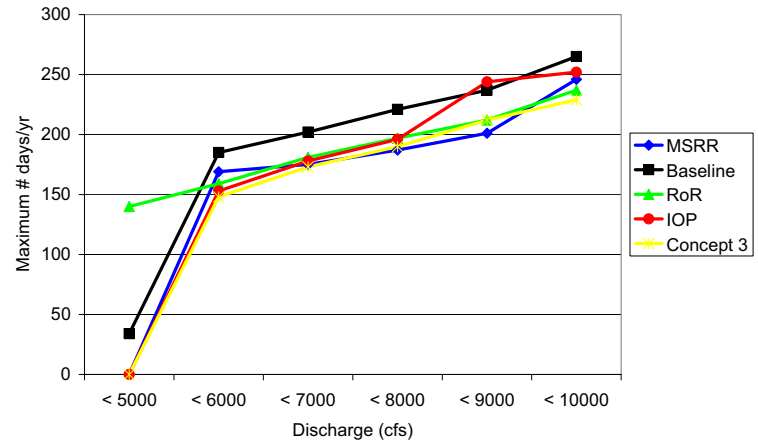


Figure 9 (BiOp Figure 4.2.5.B) shows the number of low flow days in the worst year to the record for the same thresholds as the previous figure. Fewer days are better. The performance of the MSRR is not significantly different in this performance measure than either of the other operating rules.

Figure 10 (BiOp Figure 4.2.5.C): Number of Consecutive Low-flow Days in Worst Year

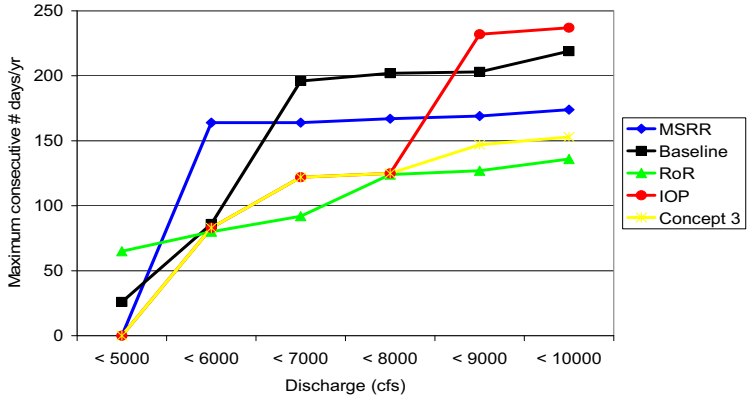


Figure 10 (BiOp Figure 4.2.5.C) shows the number of consecutive days of low flow in the worst year. Lower numbers are better. While the MSRR does not perform as well as the IOP or Concept 3 on this measure, the difference is not significant. This is especially true because the total number of days in the year is approximately the same, and mussels are impacted primarily when the flows fall. Arguably, for the same number of days of low flow, it is better for the mussels if the flows fall only once as opposed to several times. More days of consecutive low flow imply fewer rises. This is beneficial because those rises could induce mussels that have survived by moving to lower elevation habitats to move back to higher elevation habitats where they would again be vulnerable if flows fell again. In other words, at extreme low flows, it more important to provide stable flows than it is to provide higher flows that can be sustained for only a short period of time.

Figure 11 (BiOp Figure 4.2.5.D): Number of Low-flow Days in Median Year.

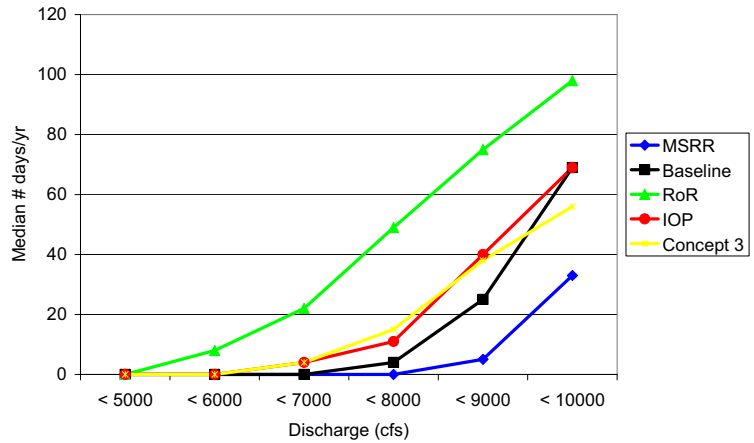


Figure 11 (BiOp Figure 4.2.5.D) shows the median number of days of flow below thresholds in a given year. Lower is better. The MSRR performance with regard to this criteria is clearly and substantially superior for mussels. The figure reflects the fact that more than half of the years have no days with less than 8000 cfs under the MSRR. The corresponding flow for the IOP and Concept 3 is 6000 cfs. Note that the MSRR is the only operating rule that outperforms historical flows for this performance measure.

Figure 12: Frequency of Sustained Low Flows 1975-2001

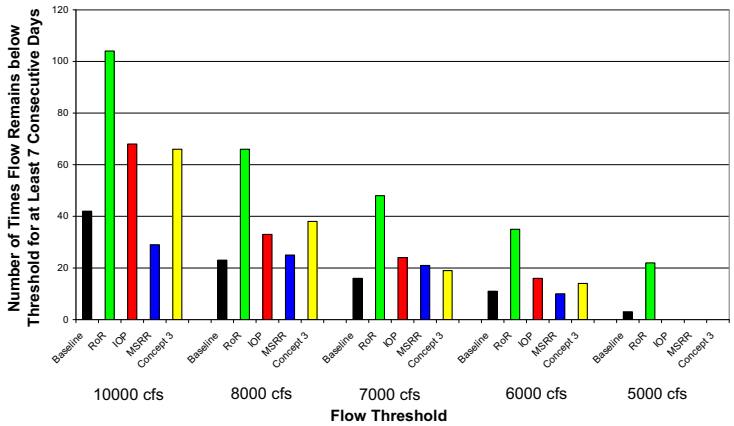


Figure 12 is not contained in the BiOp, but clearly shows the superior of performance of the MSRR with regard to benefits to endangered mussels. It shows the number of times in the simulated record that flows fall below thresholds for at least seven days. This is important because mussels can survive short periods of dewatering. The MSRR clearly outperforms the IOP and Concept 3 at the 10,000 8.000 and 6,000 cfs thresholds, and is equivalent to both rules at the 7,000 cfs threshold.

Figure 13: (BiOp Figure 4.2.4.A): Max Number of Consecutive Days per Year of Flow Less than 16,000 cfs

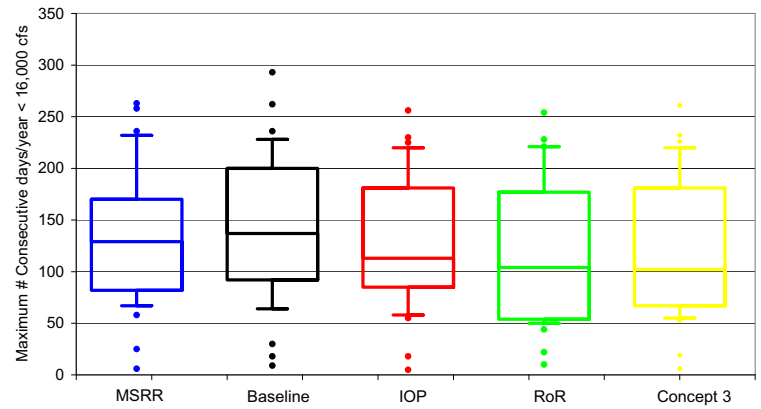


Figure 13 (BiOp Figure 4.2.4.A) shows the distribution of the number of days per year below 16,000 cfs for all cases. It is difficult to distinguish the performance of the alternatives based on this performance measure.

The mussels are also affected by the daily change in stages, which is why ramping rates on the reduction of flows at Woodruff is part of the IOP. The next two performance measures are designed to evaluate the rate of change of stage experienced by the mussels. The first of these, Figure 14 (BiOp Figure 4.2.5.F), shows the rate of stage change for flows under 10,000 cfs only. Based on the IOP ramping rates, all days should fall under the first two categories: rising or stable or <= 0.25 ft/day. The MSRR respects the ramping rate restrictions at these low flows much better than the IOP or Concept 3; however, this may be because OASIS is able to enforce the ramping rates more closely than HEC 5 rather than an actual difference in the operating policies.

This difference in the modeling tools also affects the next performance measure, Figure 15 (BiOp Figure 4.2.5.E). Given these differences it is difficult to evaluate these performance measures. They are included for completeness, nonetheless.

Figure 14 (BiOp Figure 4.2.5.F): Frequency of Daily Stage Changes When Releases from Woodruff are Less than 10,000 cfs

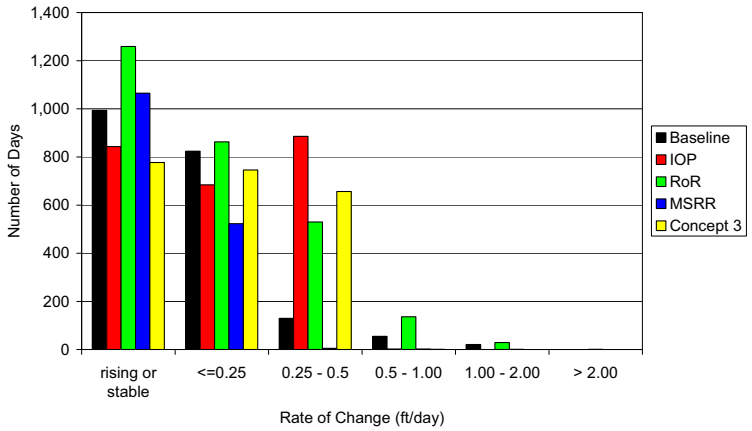
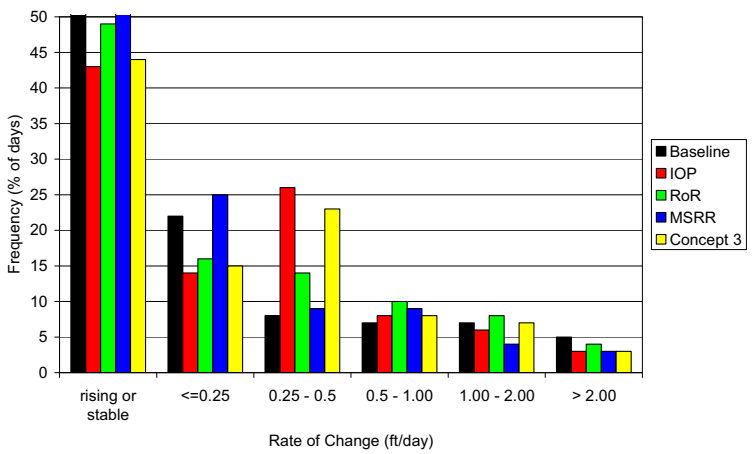


Figure 15 (BiOp Figure 4.2.5.E): Frequency of Daily Stage Changes



Floodplain connectivity is important for the lifecycle of the host fish that support the mussel species. The next two performance measures, Figures 16 and 17, quantify the number of floodplain acres connected to the main channel during growing season. Note that the relationship between acres of connected floodplain and flow was estimated from BiOp Figure 3.3.2.B, so the lines do not match those in the BiOp figures exactly.

Figure 16 (BiOp Figure 4.2.6.A) shows the percent of days in which amounts of habitat area are connected. Most of the runs follow the same trend, with the IOP higher for some habitat areas, lower for others.

Figure 16 (BiOp Figure 4.2.6.A): Frequency of Floodplain Connectivity to the Main Channel During Growing Season

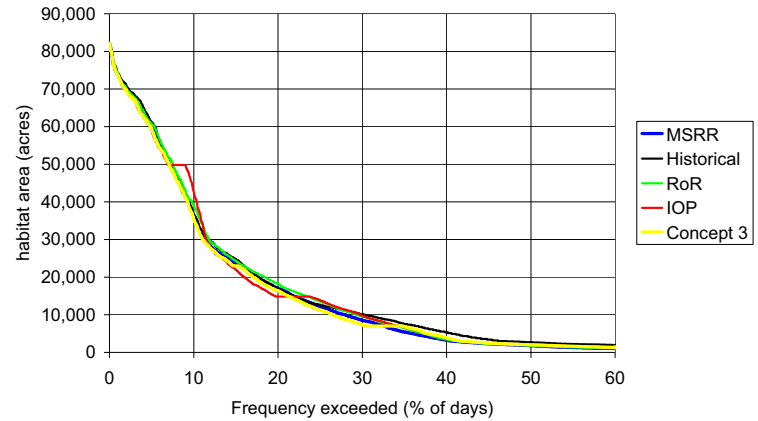
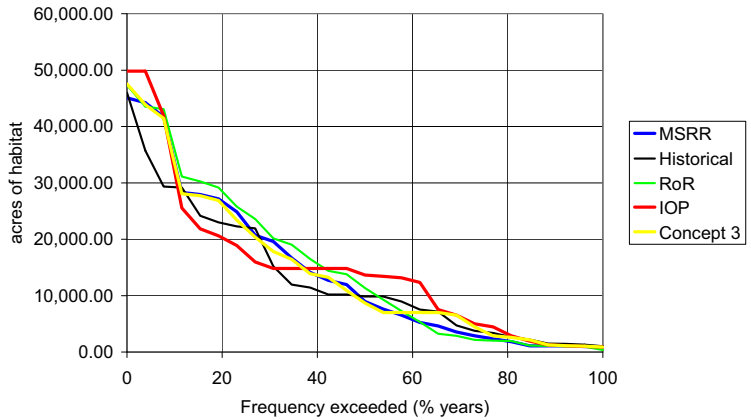


Figure 17 (BiOp Figure 4.2.6.B), the next performance measure, looks at the amount of habitat area connected for at least 30 days each year. The IOP is higher for some ranges, the MSRR for others. In general, the runs are comparable and do not appear to be inferior to historical. Note that storing more water in the spring under Concept 3 shifted the IOP trace closer to that of the MSRR. The MSRR more closely mimics run-of-river (ROR) than does the IOP. This may be desirable.

Figure 17 (BiOp Figure 4.2.6.B): Max Floodplain Habitat Connected to the Main Channel for at least 30 Days During Growing Season

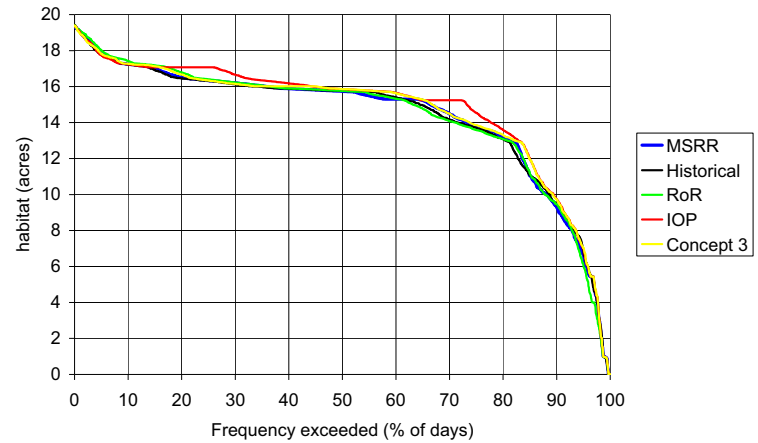


6.2.1 Gulf Sturgeon

As demonstrated in the previous section, the MSRR is clearly superior for the mussels overall. Based on the gulf sturgeon habitat measures from the BiOp, the MSRR is no worse for the sturgeon. We do recommend that these performance measures be refined for the reasons discussed below.

The first performance measure, Figure 18 (BiOp Figure 4.2.3.A), shows the frequency of days that different amounts of habitat are available during spawning season. The traces are not significantly different with the exception of the IOP, which provides spawning habitat around 15 acres and 17 acres more frequently than the other scenarios. Note that the increase in stored water in the spring under Concept 3 removes these features of the IOP trace, and Concept 3 follows the other traces more closely. The differences are small and do not appear to be significant.

Figure 18 (BiOp Figure 4.2.3.A): Frequency of Spawning Habitat Availability



The next performance measure, Figure 19 (BiOp Figure 4.2.3.B), shows the maximum amount of habitat sustained for at least 30 days during spawning season each year. The IOP performs somewhat better than the other traces on this measure. The increase in sustained habitat, however, is at most about 1.5 acres, which is not likely to significantly affect such a small population of spawning fish. Furthermore, the changes planned to the IOP by the USACE illustrated by Concept 3 reduce the advantage of the IOP on this measure. The MSRR provides more sustained habitat than the Baseline or RoR, signifying no impact to the sturgeon based on the BiOp criteria. Finally, the performance on this particular measure is greatly influenced by the bathymetry at RM 99.5, the location at which very few eggs have been collected compared to RM 105.

The relationship between flow and sturgeon habitat is shown in Figure 20 (BiOp Figure 3.6.1.4.C). Note that at flows greater than 50,000 cfs, the available habitat decreases down to zero at 150,000 cfs. In addition, habitat at RM 99.5 decreases dramatically at 23,000 cfs. Therefore, high flows do not necessarily correspond to higher availability of spawning habitat. Further, the decrease in habitat at RM 99.5 at flows above 23,000 cfs causes a dip in total habitat below 14 acres between 29,000 and 34,000 cfs. Avoiding flows in this particular range can have a significant impact on the sustained habitat performance measure. In 1979, for example, flows at the Chattahoochee gage fall in the range for the MSRR on May 3, causing the habitat to fall from about 15 to 13 acres. Flows in the IOP fall between May 6 and 10 as well, but they skip the habitat dip, dropping from 37,000 to 24,000 cfs in a single day. The flows and corresponding habitat are shown in Figure 21. Since these days in May fall within the 30-day maximum sustained habitat time frame, the value for the MSRR is about 13 acres for this year, while the

value for the IOP is about 15 acres. This reduction in sustained habitat for the MSRR happens again in 1980.

Figure 19 (BiOp Figure 4.2.3.B): Max Habitat Sustained for At Least 30 Days During Spawning

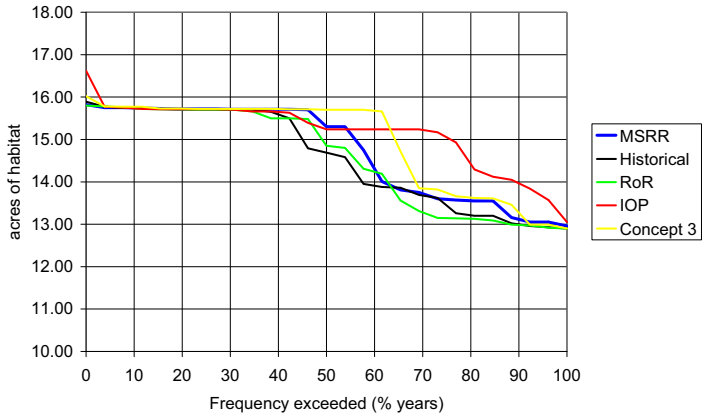


Figure 20 (BiOp Figure 3.6.1.4.C): Area of Gulf Sturgeon Spawning Habitat

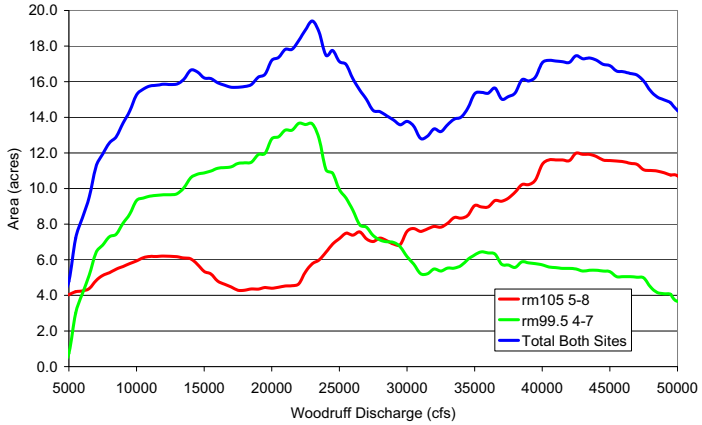
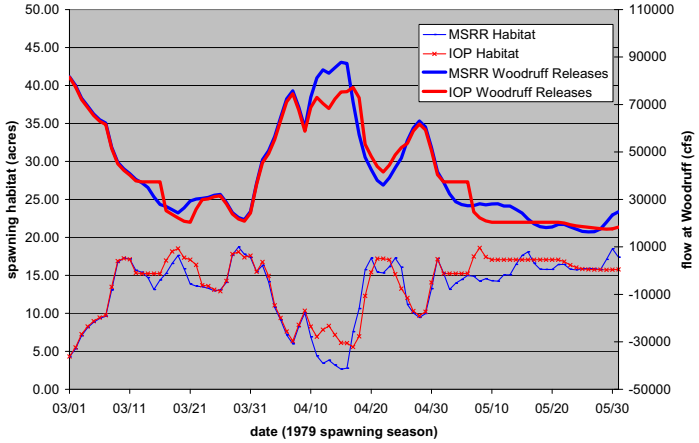


Figure 21 Spawning Habitat and Woodruff Releases in 1979



The MSRR could be tuned to avoid the problematic range of flows. We have not yet done so, however, for two reasons. First, the dip in habitat may or may not reflect an actual decline in usable habitat. Based on the "range of spawning depths observed" after the removal of the outliers, there will be some amount of habitat loss as flows increase simply as a matter of channel geometry. This is because at some point under increased flows, depths will increase to greater than 18.0 feet before other areas of the rock shoal are inundated with at least 8.5 feet of water. While the range of depths in the BiOp may be optimal based on this depth range rule, it is obvious from the 2005 and 2006 data that sturgeon will spawn at depths outside of this range. Habitat may not be lost as water depth increases in the main channel in response to flows that result in channel depths greater than 18 ft with shelf depths less than 8.5 ft. This casts doubt on differences in apparent available habitat among various management scenarios at intermediate flows.

In addition, the MSRR currently performs as well or better than the IOP at RM 105, the more important of the two spawning sites, as seen in Figures 22 and 23. Figure 22 shows that the MSRR has more days that fall below habitat in the 8 to 10 acre range, but less days that fall below habitat in the 4 to 6 acre range. Figure 23 shows that the MSRR supports more sustained habitat than does the IOP in the range of 5 to 7.5 acres, and equally as much as the IOP for all other values of habitat. We believe that the sustained habitat measure is the more critical of these two and so conclude that the performance of the MSRR with regard to sturgeon habitat is at least as good if not better than the performance of the IOP. The same holds true for the comparison of the MSRR and Concept #3. The performance of the MSRR is clearly no worse than the baseline or RoR, as well.

Figure 22 (BiOp Figure 4.2.3.A): Frequency of Spawning Habitat Availability at RM 105

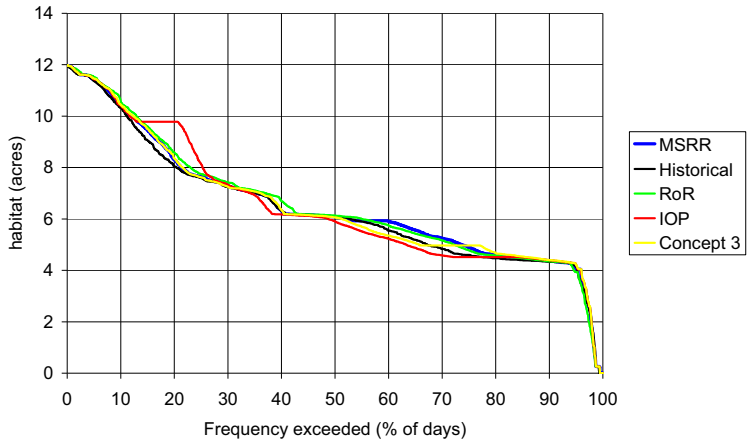
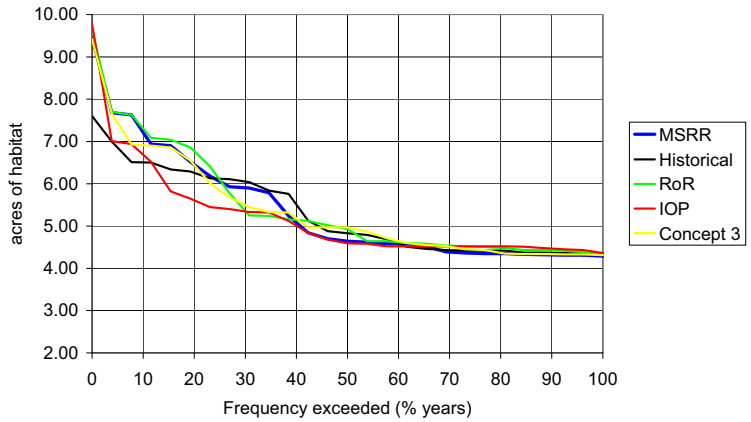


Figure 23 (BiOp 4.2.3.B): Max Habitat Sustained for At Least 30 Days During Spawning Season at RM 105



6.3 Other Operational Objectives

6.3.1 System Storage

Figure 24: System Storage 1940-2001

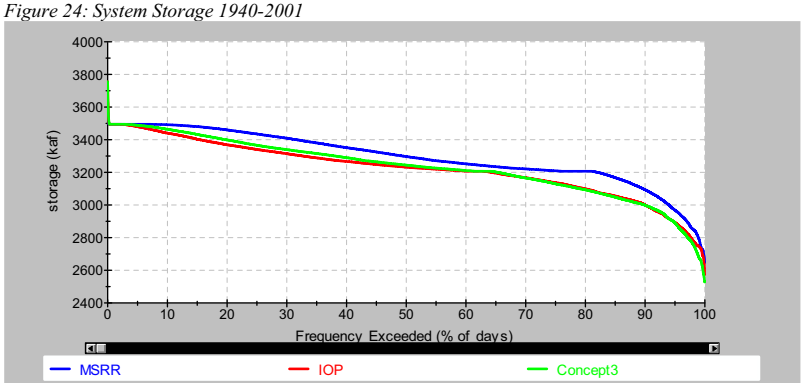


Figure 24 shows the cumulative distribution of system storage for all three operating rules. The graph indicates MSRR produces consistently higher values of storage under almost all operating conditions. This strongly suggests that the system will be better able to respond to drought events more extreme than historical droughts if operated using the MSRR.

6.3.2 Recreation Impacts

Figures 25, 26 and 27 show the benefits of implementing the MSRR relative to recreation impacts. Higher lines are better. The graph for Lanier (Figure 25) shows a wholesale reduction in impacts measured in recreation days at all impact levels.

The graph for West Point (Figure 26) is somewhat more complicated because operations for flood control lower the top of conservation pool, and thus reservoir storage, to the level 2 impact stage every year. The dotted orange line shows the recreational impact of maintaining the reservoir at the top of the seasonally-varying conservation pool at all times, with no other other lowering of the reservoir stage. The impact of operations for all other purposes is the difference between the orange line and the line corresponding to each operating rule. Again, the MSRR is substantially superior to either of the operating rules with regard to this performance measure for all levels of recreational impact.

The graph for Lake Eufala (W. F. George, Figure 27) shows that the MSRR produces more days of initial recreational impact at Eufala than the other two rules. The reservoir balancing scheme in the MSRR makes this happen because it tries to balance impacts among the three reservoirs while minimizing the total impact. The small additional drawdown in Lake Eufala allows that lake to capture water that would otherwise be spilled without significant

benefit to other operating objectives. The drawdown contributes significantly to the achievement of all other operating objectives by preserving system storage upstream. The additional drawdown is quite equitable, as shown in Figure 29-31, and is substantially superior to historical conditions. The same is true for Lake Seminole (Woodruff), as shown in Figure 28. We have no estimates of recreational impact levels for Lake Seminole.

Figures 29, 30 and 31 summarize the recreational impacts for Lake Lanier, West Point Lake and Lake Eufala at each of the impact levels. The overall recreational impacts of the MSRR are clearly less than those of the other two rules, and more equitably apportioned between the lakes.

Figure 25: Frequency of Stages at Lake Lanier

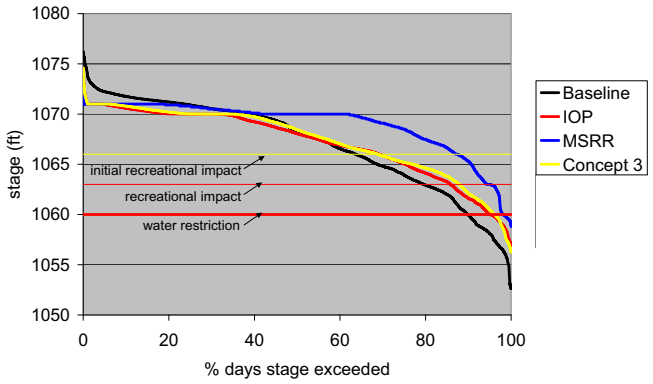
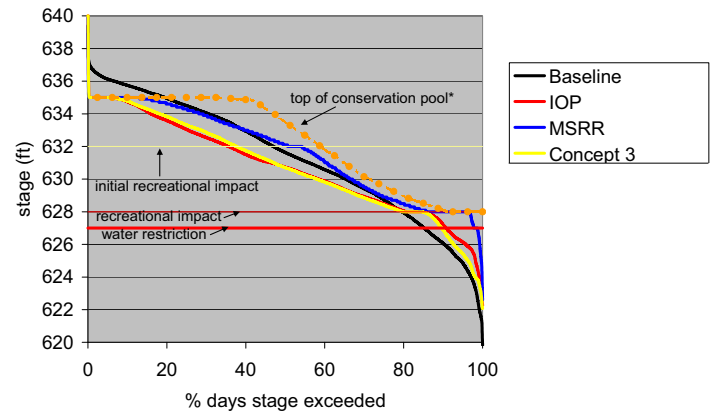


Figure 26: Frequency of Stages at West Point



**This line indicates reservoir levels when West Point is kept at the top of the seasonally-varying conservation pool every day.*

Figure 27: Frequency of Stages at Walter F. George

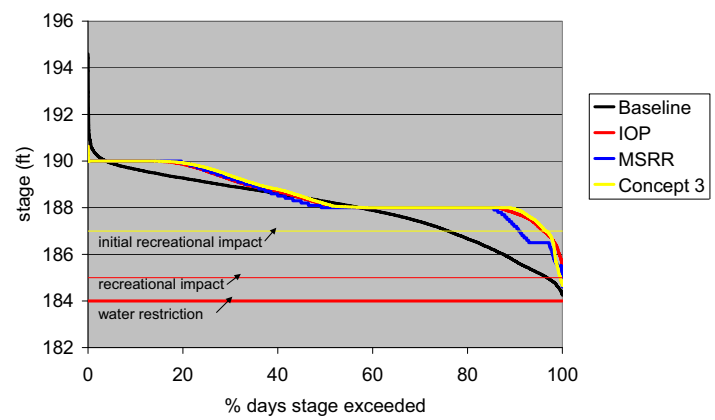


Figure 28: Frequency of Stages as Woodruff

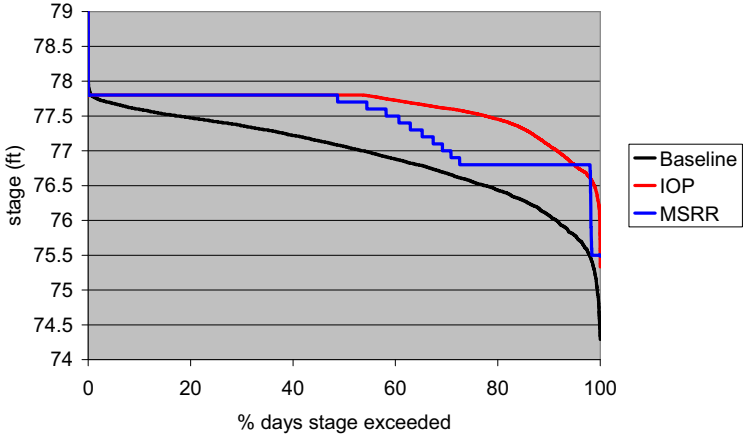


Figure 29: Recreation Impact (1975-2001) - Impact Level 1 (Initial Impact)

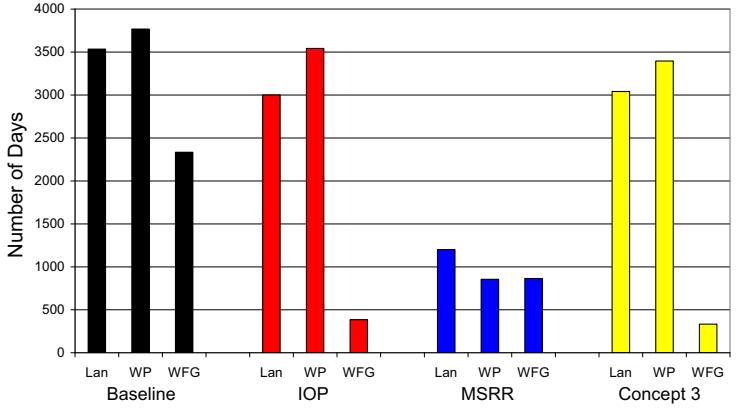


Figure 30: Recreation Impact (1975-2001 - Impact Level 2 (Recreation Impact)

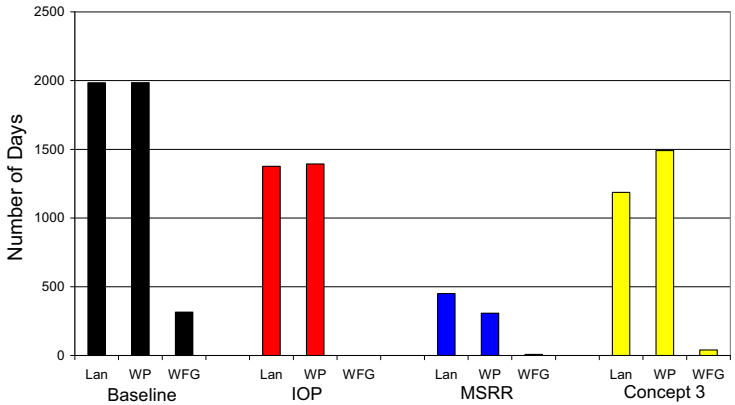
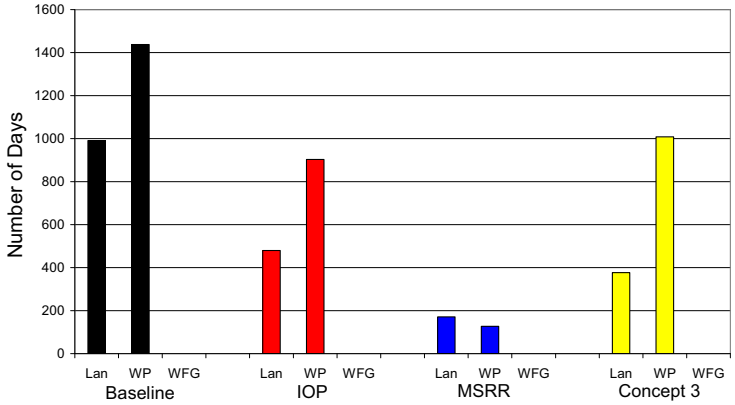


Figure 31: Recreation Impact (1975-2001) - Impact Level 3 (Water Restriction)



6.3.3 Hydropower

Figure 32 shows monthly hydropower generation for the IOP and for the MSRR, and the standard deviation for each month. The difference in total generation is insignificant, although the monthly distribution shows minor differences.

Figure 32: Average Monthly Energy Generated (1940-2001)

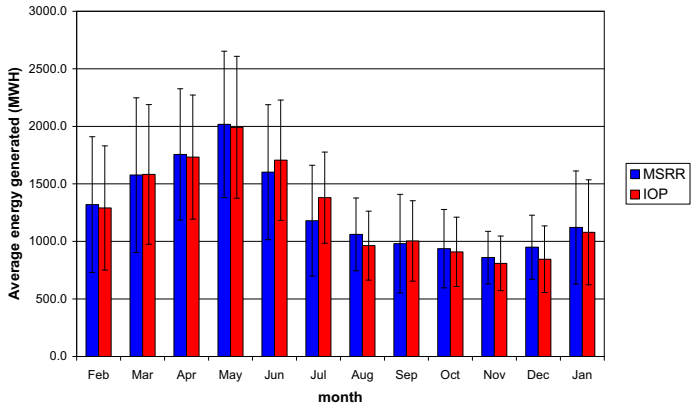
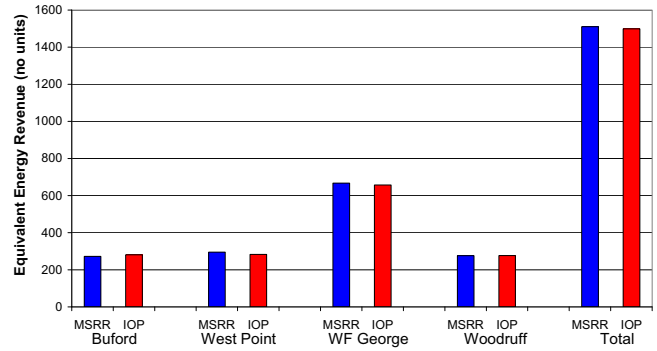


Figure 33 shows an estimate of the value of the power produced. This value is estimated using the average of 2001-2005 day-ahead peak power generation prices from the ERCOT hub. An individual price was generated for each day in the calendar year. The power generation for the day is divided by the generating capacity of the powerhouse for the day to give the number of hours of generation. At Buford, the capacity is a function of elevation, and at the other powerhouses it is constant. This is the same as the method used in HEC5. The first 3 hours of generation are priced at peak price levels, and the remaining hours at 1/3 of peak price levels to estimate the value of power generated for the day. We believe this is a reasonable first order estimate of value. The MSRR produces an insignificantly higher value for power produced even though it has minimal provisions for optimizing power generation.

It is important to note that the MSRR generates energy only when prices are high rather than everyday. As seen above, this not only increases the value of power generated, it also produces better biological performance.

Figure 33: Average Equivalent Energy Revenue



6.3.4 Flood Control

The proposed alternative does not include any requirements concerning flood control operations beyond those associated with the seasonal curve for specifying the top of conservation pool in each reservoir. Top of conservation rule assumptions are unchanged from current levels. Therefore, implementing the proposed alternative will not impact flood control performance.

7. CONCLUSION

The Maximum Sustainable Release Rule ("MSRR") is proposed as a revision to the IOP for the implementation of RPM3:

- The MSRR responds to RMP3 by increasing minimum flows below Woodruff to the maximum sustainable flow whenever basin conditions permit.
- The MSRR ensures that such releases will not compromise the ability of the system to meet critical needs over the long-term.
- The MSRR performs better in terms of many operating objectives, including but not limited to those relating to the protection of threatened and endangered species. MSRR does not perform significantly worse in terms of any operating objective.
- The MSRR provides improved ability to cope with droughts worse than the drought of record with regard to maintaining environmental flows and maintaining public health and safety.
- The MSRR is a practical rule that is easily implemented.
- We appreciate the Corps' consideration of this approach and will make available to any information, data or other resources necessary to validate the rule. We also stand ready to assist the Corps in any way possible.

ATTACHMENTS

1. CD Containing Input-output files for the MSSR.
2. Robert M. Hirsh, *Stochastic Hydrologic Model for Drought Management,* Journal of the Water Resources Planning and Management Division, ASCE, Vol. 107, No. WR2 , Proc. Paper 16558, October 1981, pp. 303-313.
3.

EXHIBIT B

ATLANTA REGIONAL COMMISSION

PLANNING • LEADERSHIP • RESULTS

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

May 29, 2008

Re: Proposed Modifications to Interim Operations Plan for ACF Reservoirs

Dear Mr. Flakes and Ms. Carmody:

I offer the following comments on the Corps' proposed modifications to the Interim Operations Plan ("MIOP") for its reservoirs in the Apalachicola-Chattahoochee-Flint ("ACF") River Basin on behalf of the Atlanta Regional Commission, the City of Atlanta, Georgia, Fulton County, DeKalb County, Cobb County-Marietta Water Authority, and the City of Gainesville, Georgia (collectively, the "Water Supply Providers"). Technical materials prepared by Megan Rivera, Ph.D. of Hydrologics, Inc. and George McMahon, Ph.D. of Arcadis are also attached.

First, let us begin by expressing our sincere appreciation to you and your respective agencies for your efforts to manage water resources in the ACF Basin. Although we strongly disagree with many of the decisions that have been made, and with the process used to make them, we do understand that you are using your best efforts in an extremely difficult situation.

The following comments are organized in two sections. The first section is directed at specific provisions of the MIOP. The second addresses a number of more fundamental considerations that need to be considered in the development of the new Water Control Plan for the ACF Basin.

To summarize our evaluation of the MIOP, we believe that, while it represents a slight improvement over the original IOP, it suffers from many of the same fundamental flaws. We have already shown that better alternatives exist. We urge you to give serious consideration to these alternatives rather than continuing to make incremental changes to a plan that should never have been adopted in the first place.

Indeed, we are extremely concerned that the MIOP will form the basis for the Water Control Plans that are currently in the process of being developed. We can and must do better. In other words, although we understand that we will likely have to live with the IOP/MIOP framework for some time to come, we believe this framework should be set aside at the first opportunity.

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1. Comments on Specific Provisions of the MIOP

1.1 Refill Opportunities Are Still Too Limited

As the events of the past year demonstrate, the IOP's minimum flow requirements and restrictions on the Corps' ability to store water are unsustainable during a prolonged drought. The MIOP alters these provisions in several ways, and in this respect, constitutes an improvement over the IOP. Indeed, the modifications allowing storage of all flows above 5,000 cfs from December to February and reducing the prohibition on storage to 50% of Basin Inflow are welcome changes.

However, these modifications do not go far enough. Refill opportunities are still severely restricted during the wet period from March to May and the 50% prohibition on storage is too restrictive. The MIOP ensures that reservoir levels are consistently lower than is beneficial to many users in the system. These provisions can and should be modified to allow greater opportunities to refill the reservoirs. This would substantially benefit the reservoir system, and all those who rely upon it, with little to no effect on downstream flows.

Florida would have the Corps believe otherwise. In its letter dated May 15, 2008, Florida complains that release requirements for certain periods have been reduced under the MIOP to 50% of Basin Inflow, as opposed to 70% of Basin Inflow under the original IOP. As a result of this change, Florida claims that "flows to the Apalachicola River will be reduced by up to 20% of basin inflow under the Modified IOP in comparison to the original IOP." This is simply not correct.

The reality is that only a small fraction of Basin Inflow can actually be captured in storage, regardless of what the MIOP might allow. The fraction of Basin Inflow that can be stored depends on the distribution of inflow in relation to storage. Of the 17,230 mi.^{2} drainage basin above Lake Seminole, 95% is below Lake Lanier, which represents 65% of total system storage; 80% is below West Point, which, together with Lake Lanier, represents 85% of total system storage; and 57% is below Walter F. George, which is the last storage project in the system. *See Figure 1*. In other words, run-off from 57% of the basin cannot be captured in any reservoir and 80% of the basin is controlled by the smallest storage project in the system, with only 244,000 acre-feet.

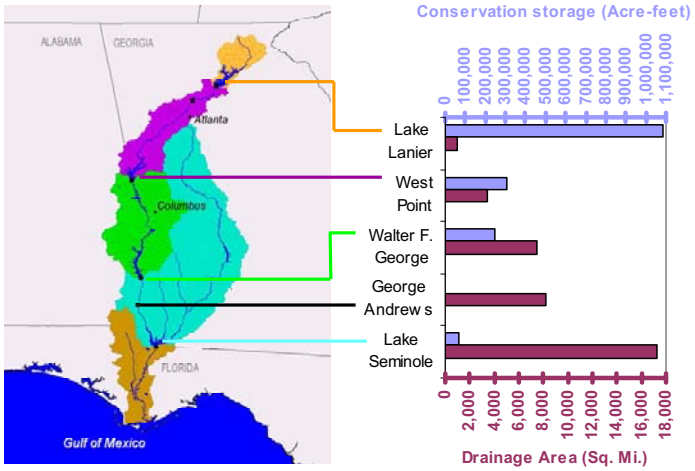

Figure 1. Conservation Storage and Drainage Basin for ACF Reservoirs.

The end result is that only a small fraction of Basin Inflow can actually be captured and stored in the federal reservoirs, because of their location in the basin, no matter what the rules theoretically allow. For example, for the period from January 2007 to present, the MIOP provision allowing storage of up to 50% of Basin Inflow would result in the actual storage of only 8% of Basin Inflow—the remaining 92% would pass downstream to Florida. Similarly, for the period from 2003 to 2004, the Corps would actually be able to store only 1% of Basin Inflow under the MIOP, whereas 99% would be passed downstream to Florida.

Because the Corps' ability to store water is so limited, the provision of the MIOP theoretically allowing storage of up to 50% of Basin Inflow cannot significantly impact flows in the Apalachicola River. Figure 2 through Figure 4 illustrate this point by comparing flows at the Chattahoochee gage under the IOP with those under the MIOP for three 2-year periods.[1] As these figures show, changes in storage limitations under the MIOP have virtually no effect on flows at the Florida line.

[1] All simulations discussed in this letter were prepared by Hydrologics, Inc. using the OASIS platform. Information concerning the validation of this model against HEC-5 is provided in Exhibit A. The models produce essentially the same results when the same assumptions are used. OASIS was used in preference to HEC-5. We would be happy to answer any questions that the Corps or Fish and Wildlife Service might have about these model runs.

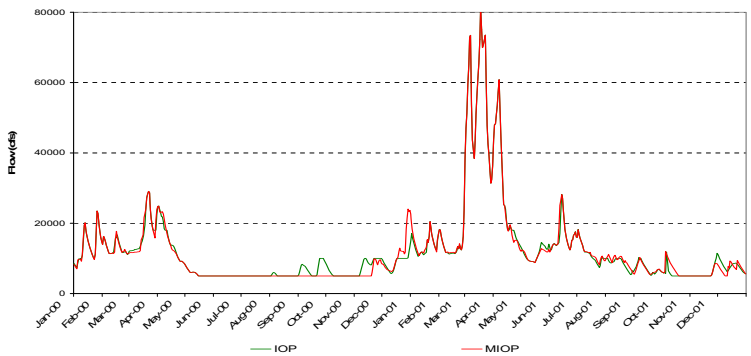

Figure 2. Comparison of flows at the Chattahoochee gage under IOP and MIOP for period from January 2000 through December 2001.

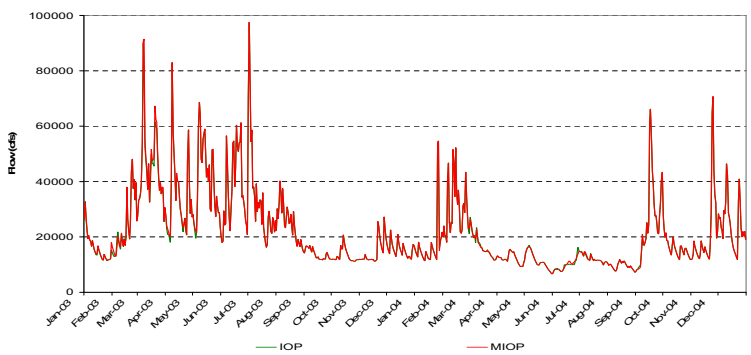

Figure 3. Comparison of flows at the Chattahoochee gage under IOP and MIOP for period from January 2003 through December 2004.

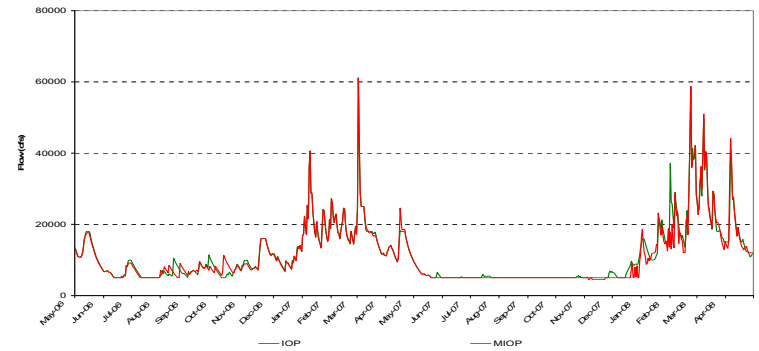

Figure 4. Comparison of flows at the Chattahoochee gage under IOP and MIOP for period from May 2007 through April 2008.

From this, two things are clear. First, Florida's argument that the MIOP will result in significantly reduced flows in the Apalachicola River is plainly not correct. Second, the Corps can and should utilize every opportunity to store water when such opportunities arise—and, given the placement of storage within the basin, such storage will have little appreciable effect on flows at the Florida line.

1.2 Down-Ramping Rates Are Unnecessary and Unreasonable

The ramping restrictions in the MIOP revert back to the rules set forth in the original IOP, which had previously been modified with the approval of the United States Fish and Wildlife Service. We believe the modified ramping restrictions approved by USFWS on October 19, 2008 were more appropriate.

The ramp-down restrictions in the MIOP require the Corps to release large amounts of water from storage to "smooth out" the natural variations in stream flow that occur when it rains. Instead of storing water associated with rainfall events, as it could and should, the Corps is instead required to release substantial amounts of water from storage to provide a gradual ramp-down from the high flows that result from these rainfall events. The result, at times, has been that rainfall events may actually *reduce* storage rather than increasing it.

This is not appropriate. Ramp-down requirements should not be imposed to reduce the rate of fall of the river after a natural rainfall event. Rather, ramping requirements should only be used to transition between significant man-made alterations of the flow regime, such as between spawning and non-spawning flows or between navigation releases and normal operations.

The modified ramp-down restrictions in effect since October 2007 took these considerations into account. As we understood that rule, ramp-down restrictions were tied to the "Basin Inflow fall rate" rather than to the IOP maximum fall rate schedule. The one problem with the rule approved by the Service in October 2007 is that it might be necessary at times to ramp-down even when Basin Inflow is rising or remaining steady. Therefore, we suggest that the fall rate should be the *maximum* of (1) the Basin Inflow fall rate; or (2) the maximum fall rate schedule.

1.3 The "Volumetric Balancing" Scheme Is So Restricted as To Be Useless

Although the Corps originally stated, when it adopted the IOP, that it would employ "volumetric balancing" to recapture storage that is used to meet ramp-down requirements. The limitations stated in the letter to the Fish and Wildlife Service dated May 16, 2007 essentially negate this commitment.

The letter includes several conditions that must be met for storage credits to accumulate: (a) the actual release must be greater than the minimum required by the IOP; (b) the release required to comply with the fastest ramping rate allowed is greater than the minimum IOP required release; (c) today's release is less than yesterday's release (i.e., downramping is occurring); and (d) today's total storage is less than yesterday's total storage. When all of these conditions are met, the credit is equal to the *lesser* of (a) the decline in storage; or (b) the difference between the actual release and the minimum IOP required release.

We can think of no logical basis for limiting the accumulation of storage credits to situations where system storage is actually declining. A restriction preventing the accumulation of storage is no different from a requirement to release storage.

Two other aspects of the volumetric balancing scheme are particularly problematic. First, the letter states that volumetric balancing must be accomplished within 10 days and may not involve more than 10,000 day-second-feet (dsf) of storage. There is no basis for these temporal and volumetric limits. If the Corps is required to expend large quantities of storage to slow artificially the river's natural rate-of-fall, it should be permitted to recoup that storage as flows permit. Second, "credits" can only be used during high-flow periods (above 10,000 cfs). At such times, storage credits simply serve to refill the lower reservoirs a few days earlier. As a result, the storage that is "saved" by applying volumetric credits is "spilled" a few days later when the reservoirs are full.

These limitations render the volumetric balancing scheme essentially worthless. For example, by our calculations, ramping requirements caused approximately 90,000 acre-feet of water to be released in excess of IOP release requirements from May to October 2007. Of this amount, only 3,000 acre-feet could have been recovered through volumetric balancing in accordance with the restrictions imposed by the May 16, 2007 letter. *See* Exhibit B.

1.4 The MIOP's Drought Provisions Are Flawed

The MIOP constitutes a definite improvement over the IOP to the extent that elements of the Exceptional Drought Operations (EDO) Plan have been included. The absence of any such

drought provisions was obviously a major omission in the original IOP. Nevertheless, two of these provisions need to be changed.

1.4.1 The Use of "Composite Storage" as the Trigger for Drought Operations Ignores Special Consideration that Should be Given to Lake Lanier.

First, we continue to object to the use of a drought trigger based on Composite Storage. Composite Storage does not accurately reflect the status of system storage. Because the lower reservoirs refill so quickly, in comparison to Lake Lanier, it is possible for system storage to be in Composite Zone 2—the threshold under the MIOP for ending Drought Contingency Operations—even while Lake Lanier is still in Zone 4.

To assess this probability we modeled the probability that system storage would reach Composite Zone 2 by April 30, 2009 under the MIOP, based on starting conditions as they existed on May 1, 2008. Probabilities were calculated using the Hirsch method to prepare conditional streamflow forecasts. The results are provided in Table 1 below. The analysis shows a 62% probability that system storage will reach Composite Zone 2—and hence that drought operations will end—at a time when Lake Lanier is still in Zone 4. This shows that the Drought Contingency Operations will terminate too soon in most cases. *See* Exhibit C.

Table 1. Probability that System Storage Will Reach Composite Zone 2 by April 1, 2009, Terminating Drought Operations, While Lake Lanier is in a Given Zone

	System Storage Reaches Composite Zone 2 When …				**System Storage Does Not Reach Composite Zone 2**
	Lanier is in Zone 4	Lanier is in Zone 3	Lanier is in Zone 2	Lanier is in Zone 1	
# years in simulation	42 of 67	10 of 67	0 of 67	0 of 67	15 of 67
probability	62%	15%	0%	0%	22%

Instead of using Composite Storage, drought operations should continue until *Lake Lanier* is in Zone 1. Alternatively, it is possible to construct a rule based on forecasts of the probability that Lanier will refill within a certain period of time. Such a rule would have the potential to optimize operations using the best available information.

1.4.2 The "Drought Zone" Is Too Low

We do not believe the "Drought Zone," as currently drawn, sufficiently protects users who rely on reservoir storage. By the time system storage has fallen into the Drought Zone, the system is already at a severe risk and past the point at which emergency actions should be taken. What is more, initiating drought operations when conservation storage is nearly exhausted would be particularly problematic in a prolonged, multi-year drought. In that case, conservation storage could be almost completely expended early in the drought period and prior to the

commencement of drought operations. This would leave insufficient storage to meet needs in the basin, including water supply for metropolitan Atlanta, in the remaining drought years.

We reiterate that it is inappropriate for the drought trigger to be based on Composite Storage. But if the Corps is determined to use Composite Storage as the trigger for reducing minimum flow requirements, the flow should be reduced immediately whenever the system is in Composite Zone 4, and such measures should remain in place until Composite Storage and Lake Lanier have both recovered to Zone 1.

1.4.3 The "Drought Zone" Is Arbitrary

Furthermore, the delineation of the "Drought Zone" appears to be completely arbitrary. The Corps' letter to FWS states that the Drought Zone delineates a volume of water "roughly equivalent" to the amount of storage in the inactive storages in Walter F. George and West Point and Lake Lanier combined with the amount of storage in Lake Lanier Zone 4. In other words, the Drought Zone will generally be entered when the lower reservoirs are empty (of conservation storage) and Lake Lanier is in Zone 4. But the description further states—without explanation or justification—that the Drought Zone has been "adjusted" to include a "smaller volume of water at the beginning and end of the calendar year." What is the basis for these "adjustments" to the Drought Zone, and why would it ever be appropriate to terminate emergency operations at a time when the lower reservoirs are empty and Lake Lanier is in Zone 4?

1.5 Forecasts Should be Used To Improve Reservoir Operations

A large body of literature has been developed on the subject of hydrological forecasting. The United States Geological Service (USGS) has been using and relying on these methods for decades. The Corps should utilize these tools, with appropriate margins of error, to optimize reservoir operations.

The MIOP uses "Composite Storage" as the principal indicator of drought conditions, but this is a poor surrogate for a good forecast. Operations in the Spring of 2007 under the IOP/Concept 5 provide a case in point. Concept 5 required the Corps to meet a "desired flow" of 6,500 cfs—as opposed to the "required flow" of 5,000 cfs—until composite storage fell to Zone 3. The Corps began releasing water from storage to meet the "desired" target of 6,500 cfs on May 8, 2007, at a time when the available forecasts were already predicting an extremely dry summer. The predictable result was a rapid, pointless depletion of system storage—42,000 acre-feet of water were released between May 8 and May 31, at which time system storage fell into Composite Zone 3 and releases were finally reduced.

The 42,000 acre-feet of water that were released from May 8 to May 31 to meet the "desired flow" of 6,500 cfs equates to over a foot of elevation in Lake Lanier—enough water to meet the average annual consumptive needs of the metropolitan area (250 cfs) for 84 days. The loss of this water had a lasting impact on system storage, which still has not recovered. In exchange for this substantial cost, the temporary increase in flows to the Apalachicola River had no lasting benefit. After depleting system storage to the level of Composite Zone 3 within just 3 weeks,

flows in the Apalachicola River fell to the "required" level of 5,000 cfs and remained at that level throughout the summer and fall—that is, until the alarming loss of system storage caused the "required" flow of 5,000 cfs to be reduced even further. Therefore, any organisms requiring flows at or above 5,000 cfs must have perished during the long period after May 31 when flows were at or below this level.

Needless to say, we are pleased to see that the Corps has taken these events to heart and has modified the IOP to eliminate the "desired flow" of 6,500 cfs. The larger point remains, however, that release requirements and flow reductions under the MIOP are still tied to Composite Storage without reference to hydrological forecasts. This is a fundamental flaw in the framework of the IOP.

1.6 Lanier Should Not Be Used To Balance the Lower Reservoirs In Cases Where the Lower Reservoirs Can Fill On Their Own, Without Support From Lake Lanier

Also, although it is generally appropriate to use Lanier to balance the lower reservoirs, this does not always make sense. Releasing water from Lanier to help refill West Point and Walter F. George as the top of their conservation pools rise between February and June is especially wasteful. In most years the only effect of releasing water from Lake Lanier to balance the lower reservoirs is to fill the lower reservoirs a few days earlier. This is wasteful in situations where system storage is low and needs to be preserved, and where it is unlikely that Lake Lanier itself will refill. In these cases intervening flow should be used to refill the lower reservoirs instead of releasing water from storage in Lake Lanier.

1.7 Release Requirements Should Consider Management Objective and Not Blindly Adhere to Basin Inflow

Another fundamental flaw in the MIOP is the fact that release requirements are blindly tied to Basin Inflow without operating for specific needs and balancing needs in the basin.

"Basin Inflow" is a legal construct with little connection to specific needs or operational objectives. Its original justification, as is clear from the record, was that reservoir operations could not be considered the legal cause of any environmental impacts caused by flows at least equal to Basin Inflow. Although this is legally correct, it does not follow that passing Basin Inflow is the best mode of operation for the reservoirs or that the Corps is legally required to operate in this manner.

The stated objective to maximize spawning habitat for the Gulf sturgeon is a perfect example. There is no evidence to show that reservoir operations have any effect on sturgeon spawning success, or that the amount of spawning habitat currently available at RM 105.5 is not sufficient to meet the needs of the species. Nonetheless, even if increasing sturgeon spawning habitat were an appropriate objective, the data show that the amount of spawning habitat available at RM 105 plateaus at 10,000 cfs to 11,000 cfs. Flows in excess of this amount actually *reduce* the amount of available habitat. Therefore, the MIOP is actually counter-productive to the extent it requires releases in excess of 11,000 cfs based on the level of Basin Inflow.

This is just one example of many. The more general point is that the Corps should strive to develop an operating plan in which release requirements are based on balanced operational objectives as opposed to abstract concepts like Basin Inflow.

1.8 Corps Models and Data Need to be Corrected

Finally, we are concerned that the Corps continues to use flawed models to evaluate modifications such as the MIOP. Deficiencies are detailed in the attached memorandum from George McMahon, Ph.D. *See* Exhibit D.

2. The Corps Should Not Attempt To Use Reservoir Storage to Drought Proof the Apalachicola River

In addition to commenting on the specific provisions of the MIOP, we have also taken this opportunity to address certain fundamental limitations of the ACF Reservoir system that need to be considered by all stakeholders in the development of water control plans for the ACF Reservoirs.

The reality is that reservoir operations cannot significantly affect the timing or quantity of flows in the Apalachicola River for any extended period of time. This is a consequence of the distribution of storage within the basin, as is described further in Section 2.1 below. Another consequence of the distribution of storage within the basin is that attempts to utilize reservoir storage to manipulate the Apalachicola River can quickly drain Lake Lanier, which may take years to refill. This is discussed further in Section 2.2. In terms of cost-benefit analysis, such operations provide negligible benefit to the Apalachicola River while creating significant economic hardship and creating great risks to the health, safety and well-being of the millions of people who rely on reservoir storage for water supply and other purposes. These impacts are discussed in Section 2.3.

Further, as is discussed in Section 2.4, the State of Florida's focus on metro Atlanta is completely misplaced. The truth is that metro-area water use is not a significant contributor to environmental issues in the Apalachicola River and Bay. Instead of pointing fingers, the State of Florida should work with the Corps to identify and address the causes of and potential solutions to these problems.

2.1 Reservoir Operations Cannot Significantly Affect Flows in the Apalachicola River Over an Extended Period of Time

One result of the upside-down distribution of reservoir storage within the ACF Basin is that reservoir operations cannot significantly affect the pattern of flows in the Apalachicola River. This can be seen by modeling a plan in which each reservoir is permitted to maximize storage subject only to at-site release requirements. For illustration purposes only we have modeled such a rule, which we call the "At Site Objectives" Plan. In this plan each reservoir operates to meet at-site objectives, including the 750 cfs flow target for Buford Dam and the 5,000 cfs flow target for Jim Woodruff.

Figure 5 and Figure 6 show the cumulative distribution of flows at the Chattahoochee gage for the MIOP and the "At Site Objectives" Plan. Although the MIOP does provide slightly higher flows in the range between 5,000 cfs and 15,000 cfs, *see* Figure 5, the difference is remarkably small and insignificant over the entire range of flows. *See* Figure 6.

The differences between the MIOP and the At Site Objectives Plan are even less significant when one considers impacts to the hydrograph. Figure 7 through Figure 9 show three representative two-year periods, two dry and one wet. These figures demonstrate that reservoir operations have little effect on the overall timing and pattern of flows in the Apalachicola River.

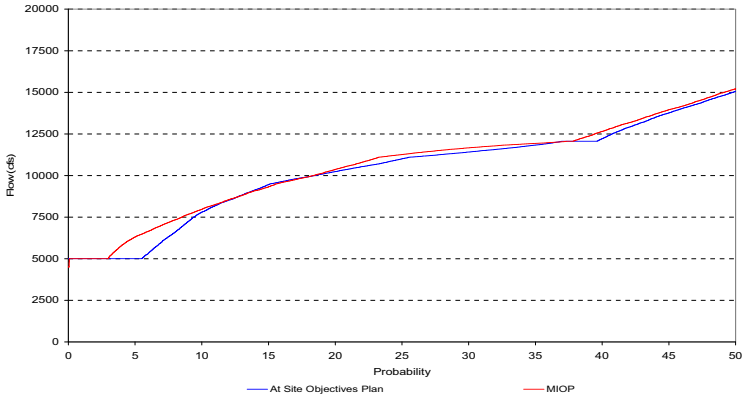

Figure 5. Flow at the Chattahoochee gage under MIOP as compared to flow under the "At Site Objectives" Operating plan.

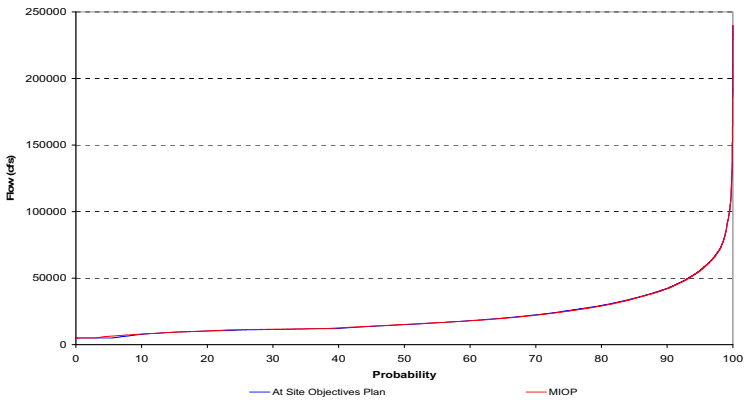

Figure 6. Flow at the Chattahoochee gage under MIOP as compared to flow under the "At Site Objectives" Operating plan.

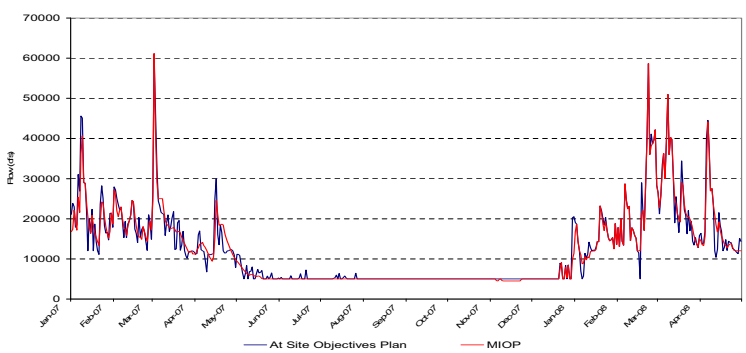

Figure 7. Simulated flow under MIOP and At-Site Objectives Operating Plan from January 2007 to April 2008

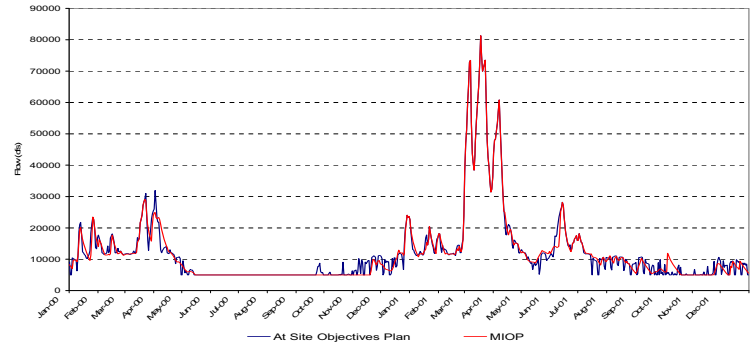

Figure 8. Simulated flow under MIOP and At-Site Objectives Operating Plan from December 1999 to December 2000

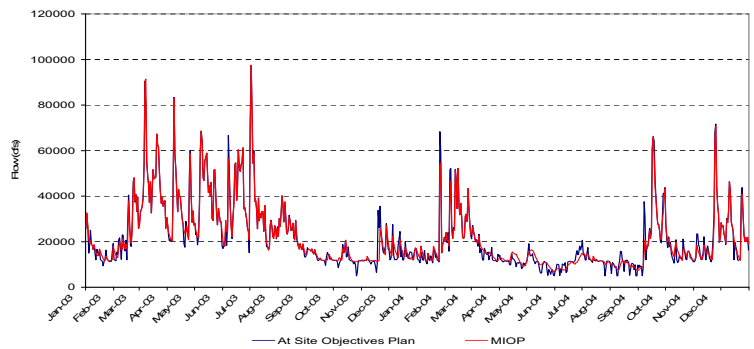

Figure 9. Simulated flow under MIOP and At-Site Objectives Operating Plan from January 2003 to December 2004

2.2 Lanier Should Not be Drawn Down Excessively Because Lanier Takes a Very Long Time to Refill

A second consequence of the geography of the ACF Basin—with Lake Lanier at headwaters, controlling just 5.6% of the drainage area of the basin—is that it takes a very long time to refill Lake Lanier once it is drawn down.

Figure 10 shows the average annual inflow (acre-feet per year) into each of the three storage reservoirs. 0 provides similar statistics in a different form. The table shows, for example, that the drainage-to-storage ratio for West Point is 100 times greater than that for Lake Lanier. 0 further shows that it would take 279 days to fill Lake Lanier *if the entire flow of the river (based on the annual average flow) were captured and stored.* This statistic is provided for purposes of comparison only—in reality it would take much longer than 279 days to refill Lanier because it will never be possible to capture and store 100% of the inflow to this reservoir.

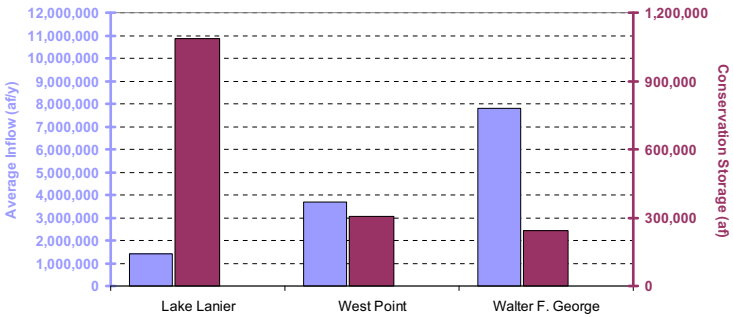

Figure 10. Average daily inflow (acre-feet per year) and conservation storage for ACF Reservoirs.

Table 2. Drainage-to-storage and inflow-to-storage ratios for the ACF Storage Projects. The Inflow-to-storage ratio is the total conservation storage divided by average daily inflow in acre-feet.

	Lake Lanier	West Point	Walter F. George	George Andrews	Lake Seminole
Drainage-to-storage ratio	.0001	.0112	.0305	n/a	.2578
# of Days to Fill Conservation Storage Assuming Zero Releases and Inflow Equal to Average Annual Inflow	279	30	11	n/a	n/a

The events of 2007 illustrate the effect on Lanier's very small drainage-to-storage ratio. Figure 11 through Figure 13 show the actual, recorded levels for West Point, Walter F. George and Lake Lanier from June 2007 to May 2008. These Figures show that West Point and W.F. George responded almost immediately to the rains that began in November 2007. Even with reduced releases from Buford Dam, these reservoirs, which had been at the bottom of Zone 4, refilled completely by mid-January. In fact, both reservoirs are now *over* full, as defined by the "top of conservation" line in the graphs. In sharp contrast, Lanier is still fifteen feet below rule-curve—a record low for this time of year—and the level is projected to fall even further for the rest of the year.

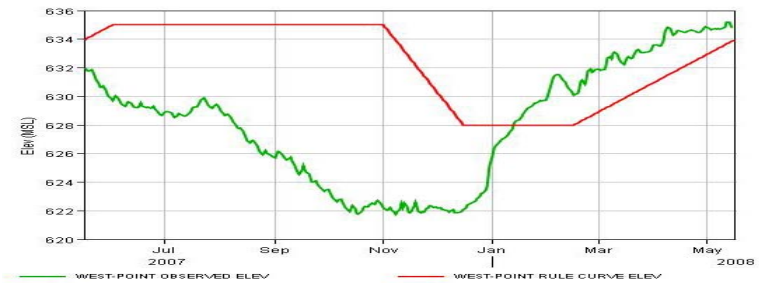

Figure 11. West Point Lake Levels from June 2007 to May 2008

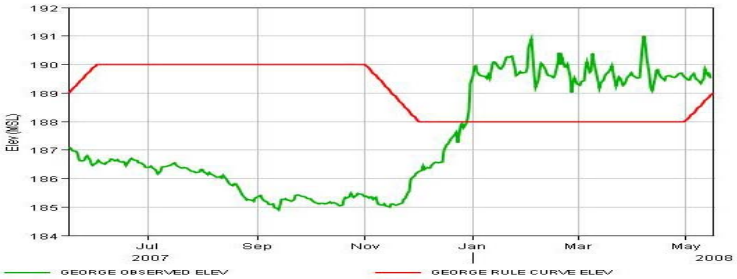

Figure 12. Walter F. George Lake Levels from June 2007 to May 2008

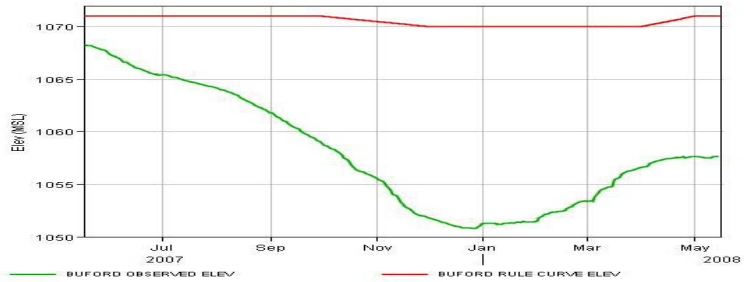

Figure 13. Lake Lanier Lake Levels from June 2007 to May 2008

2.3 The Costs to North Georgia Far Outweigh the Limited Benefits that Can be Achieved by Draining Lake Lanier to Manipulate Flows in the Apalachicola River

The very long time it takes to refill Lake Lanier, coupled with the limited benefits that can be achieved, weigh heavily against any attempt to use storage in Lake Lanier to manage flows in the Apalachicola River.

2.3.1 Low Lake Levels Have a Substantial, Lasting, Adverse Impact on North Georgia

Low lake levels at Lake Lanier have a profound, negative impact on the economy and general well-being of North Georgia. In the absence of any significant sources of groundwater, the vast majority of the metropolitan area relies on Lake Lanier and on another federal reservoir—Lake Allatoona, in the Alabama-Coosa-Tallapoosa (ACT) River Basin—to meet water needs. Lake Lanier supplies most of the region. Therefore approximately 3.5 million people rely exclusively on Lake Lanier, and on the Corps, to provide water supply for municipal and industrial purposes.

Low lake levels threaten the security of the water supply for 3.5 million people and for the businesses and industries within the ACF River Basin. This risk is very real, and the magnitude of the potential catastrophe resulting from an empty reservoir can hardly be over-stated.

In addition, costs to North Georgia have already been and will continue to be extremely high. Water restrictions have already had a catastrophic effect on the urban agricultural industry, a large part of Georgia's economy with more than 7,000 businesses employing a workforce of some 80,000 Georgians. Urban agriculture contributes more than $8 billion in annual sales to the state's economy. Numerous business have failed and thousands of jobs have been lost within this industry alone. According to research by the University of Georgia, losses to Georgia's urban agriculture industry due to the recent drought—and in large part due to water restrictions necessitated by the mismanagement of Lake Lanier—are approximately $262 million per month. This translates to an annual loss of $3.14 billion if current conditions and restrictions continue.

The $5.5 billion recreation economy supported by Lake Lanier has suffered as well. Low water levels have led to out-of-service boat ramps, unusable beaches, impassable channels and unusable private docks. These impacts are real and have economic implications for residents, business and governments of Gwinnett, Forsyth, Hall and surrounding counties, and for millions of visitors who normally come to Lake Lanier as a recreation destination.

Local governments are suffering as well. Water utilities have had to adopt extreme response measures on an emergency basis to respond to the precipitous decline in levels at Lake Lanier. In addition to disrupting the lives and businesses of their customers, these emergency measures have cost the metropolitan area Water Supply Providers over $60 million to date. This lost revenue has created substantial difficulties for local governments and authorities whose rate structures and bond financing depend upon predictable revenues.

In sum, the costs to North Georgia, both immediate and potential, far outweigh the trivial benefits that can be achieved by attempting to use Lake Lanier to manipulate flows in the Apalachicola River 350 miles downstream.

2.3.2 The Corps Should Not Rely on Dead Storage to Supply Basic Needs

Florida suggests Lake Lanier should be drawn down below the level of "inactive storage." This is unconscionable. The Corps should not gamble with the health and safety and well-being of 3.5 million people. Lanier should <u>never</u> be drawn down into the dead pool, or even near it.

2.3.3 Contrary to Florida's Allegations, Water Use in the Metro Area is Not the Cause of Any Problems that Might Be Occurring in the Apalachicola River

The State of Florida has complained that the Corps has not done enough to limit depletions in the upper part of the basin. Once again, however, Florida's accusations have little basis in reality, which is that depletions in the upper basin are too small to have any significant impact on the flow of the Apalachicola River.

Notwithstanding our near-total reliance on Lake Lanier for water supply, the entire metropolitan area consumptive use is just 250 cfs per day on average, which is just 1.2% of the average annual flow of the Apalachicola River at the Chattahoochee gage (at the Florida-Georgia line). Metro-area consumption rises in relation to river flow in drought years—but even then the net loss to the basin is just 2% of the annual flow. In other words, if all consumption stopped, and if the river were allowed to pass through North Georgia without any withdrawals or diversions of any kind, the flow of the river at the Florida line would increase at most 2%.

This is a function of the geography discussed above. Because Lake Lanier controls only 9% of the total flow of the basin above the Florida line, 91% is geographically inaccessible to the metro area. In reality, of course, we use only a fraction of the flow that is actually accessible to us, and we return the majority of the water withdrawn. That is why our total impact is on the order of just 1 to 2%.

To put this in perspective, metropolitan Atlanta's average consumptive use of 250 cfs corresponds to approximately 1.8 inches in river stage at the Chattahoochee gage in the Apalachicola River at the river's lowest flow. This in a river that fluctuates wildly, often as much as 2 feet per day as a result of hydropower operations. *See* Figure 14.

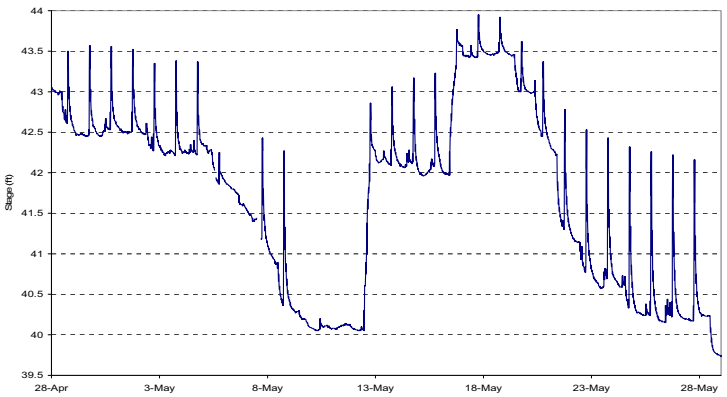

Figure 14. Apalachicola River stage at Chattahoochee gage from April 28, 2008 to May 29, 2008.

Furthermore, although it is true that our withdrawals vary seasonally, the average annual use is the appropriate point of comparison from which to assess impacts to the Apalachicola River, given the availability of reservoir storage in Lake Lanier. The use of storage helps to "smooth out" seasonal variations in withdrawals. Water that is withdrawn from storage affects stream

flow when it is taken from the stream and placed into storage—usually in the winter or spring—and not when it is it is withdrawn from the reservoir.

Moreover, Metro Atlanta is not even biggest user in the ACF Basin. Consider the following:

- Depletions to the Flint River due to agricultural irrigation in South Georgia average approximately 268 mgd (415 cfs), which is about 66% more than metro Atlanta's net water consumption. Total agricultural withdrawals for irrigation are even higher. The number cited above is the total depletion of surface waters in the Flint River due to the combination of surface and groundwater withdrawals.

- Evaporation from the mainstem reservoirs alone causes depletions of approximately 135 mgd (209 cfs).

2.4 The State of Florida and the Corps Must Acknowledge and Address the Real Causes of Environmental Issues in the Apalachicola River and Bay

Instead of pointing fingers at the metro area, the State of Florida and other stakeholders should acknowledge that many of the issues in the Apalachicola River are being caused by factors unrelated to reservoir operations or water withdrawals.

To the extent Florida is concerned about salinity in Apalachicola Bay, for example, Florida and the Corps should be studying ways to solve the problems created by Sikes Cut, which is a major contributor to salinity in the bay. Florida should also study the issues created by inter-basin transfers out of the lower Chipola River, such as the Gulf County Canal that is used to transport water to Port St. Joe.

Similarly, to the extent Florida and the Corps are concerned about the areal extent of flooding or the amount of certain types of habitat that are inundated, Florida and the Corps must acknowledge that real causes of these problems have more to do with channel degradation than with the quantity of flow in the river. USGS has documented the effect of channel degradation in the Apalachicola River, which has substantially lowered the bed of the river in key places, such as the sturgeon spawning area at River Mile 105.5. *See Figure 15.* This is highly significant because many of the environmental issues in the Apalachicola River, and especially those related the Gulf sturgeon and mussels, have more to do with the areal extent of flooding or inundation as opposed to the quantity of flow *per se*. As a result of the lowering of the channel, it now takes much more water to achieve any given river stage. At the principal spawning ground for the sturgeon, RM 105.5, USGS has determined that an additional 10,000 cfs is required to raise the river its former stage. This is *40 times* the average annual consumptive use of the entire metropolitan area (250 cfs). *See Helen R. Light, Water Level Decline in the Apalachicola River, Florida, from 1954 to 2004, and Effects on Floodplain Habitats (USGS Scientific Investigations Report 2006-5173) at 25, Figure 13.*

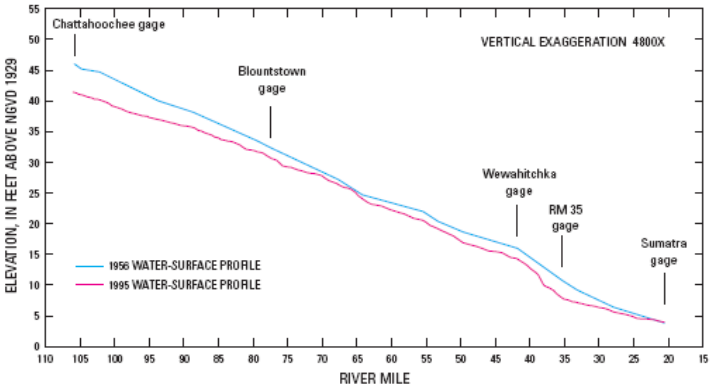

Figure 15. Channel degradation in the Apalachicola River, from Helen R. Light, Water Level Decline in the Apalachicola River, Florida, from 1954 to 2004, and Effects on Floodplain Habitats (USGS Scientific Investigations Report 2006-5173) at 9 (Figure 4).

Likewise, the Apalachicola River appears to be migrating to the Chipola Cut-off, a man-made diversion that is claiming up to 40% of the flow of the mainstem of the river, according to the most recent statistics. This diversion is partially responsible, along with other factors such as the build-up of sediment at the head of the slough—for the dewatering of Swift Slough in 2006 and 2007. Water-use in the metro area pales in comparison to the amount diverted by this artificial cut-off. *See Figure 16.*

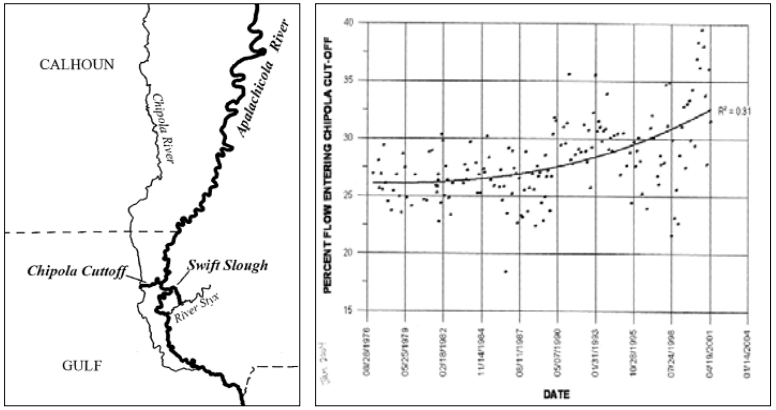

Figure 16. Percentage of the Main Channel of the Apalachicola River Entering Chipola Cutoff from 1976 to 2004. From Administrative Record in State of Georgia v. U.S. Army Corps of Engineers (M.D. Fla. 07-cv-1) GAII001733.

All parties should also acknowledge the role played by agricultural users in South Georgia. According to statistics prepared by the State of Georgia, the average annual streamflow depletion caused by agricultural irrigation is 415 cfs, compared to 250 cfs for the entire metropolitan area. *See* Exhibit E. Unlike the metro-area withdrawals, which are taken from storage, agricultural withdrawals from the Flint River Basin have an immediate effect on stream flows. Operating plans that require the Corps to meet a fixed, minimum flow at the Chattahoochee gage effectively require the Corps to use reservoir storage to compensate for such depletions. Without questioning whether the Corps is legally authorized to utilize reservoir storage to facilitate irrigation, it seems clear that the Corps cannot be *required* to do so under the Endangered Species Act.

These are all real problems that cannot be corrected by curtailing water withdrawals or by simply manipulating reservoir operations. These issues need to be acknowledged and addressed by the stakeholders and by the Corps.

3. Conclusion

In conclusion, we urge you to consider further modifications to the MIOP to eliminate its more apparent flaws. More generally, however, the IOP/MIOP is a misguided and futile effort to use reservoir storage to solve environmental issues in the Apalachicola River. The potential benefits of this effort to the Apalachicola River are negligible and are far outweighed by costs to users who rely on storage. Therefore the IOP/MIOP should be set aside at the first opportunity. It should not be the starting point for new ACF Water Control Plan.

Mr. Flakes and Ms. Carmody
May 29, 2008
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Thank you once again for your efforts. Please do not hesitate to call if you have any questions about these comments or if we can assist in any way.

Sincerely,

Pat Stevens

Pat Stevens, Chief
Environmental Planning

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November 21, 2008

SUBMITTED VIA E-MAIL TO COMMENTS@ACF-WCM.COM

Col. Byron Jorns, District Engineer
Mobile District, U.S. Army Corps of Engineers
107 Saint Francis Street, Suite 1403
Mobile, Alabama 36602-9986

Re: **Scoping Comments for Revisions of the Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin**

Dear Colonel Jorns:

This letter provides the comments of Tri Rivers Waterway Development Association ("TRWDA") regarding the scoping process of the Corps of Engineers ("Corps") to update its water control manual for the Apalachicola-Chattahoochee-Flint ("ACF") River System. Thank you for your consideration of TRWDA's views.

1. TRWDA's Interest in the ACF River Basin

TRWDA represents many stakeholders who rely on the ACF River System for a variety of uses, including navigation, hydropower generation, water supply, wastewater treatment, economic development, environmental enjoyment, tourism, and recreation. The members of TRWDA include the cities of Eufaula, Dothan, and Phenix City, Alabama, and Columbus and Bainbridge, Georgia; most of the counties in the three states along the federal navigation project; the Coalition of Alabama Waterway Associations; Columbus Water Works; Georgia Pacific; Lake Seminole Association; MeadWestvaco; Middle Chattahoochee Water Coalition; Riverway South; Southeast Water Alliance; and Southern Nuclear Company.

TRWDA seeks to partner with business, municipal, industrial, environmental, agricultural, and recreational interests, and with local, state and federal agencies to seek

scientific, technical and economic solutions to the obstacles which have prevented a full realization of the benefits of the ACF River System in recent years. We have engaged experts in business development and economic analysis from Troy University to quantify the economic value and potential of the system, including impacts to industrial development, agriculture, municipal revenues, and tourism. We have also entered into direct discussions with representatives in the ACF river basin from Lake Lanier and the greater Atlanta area in the north to the Apalachicola Bay in the south, and we intend to continue to participate in those mutually cooperative efforts.

2. The Corps Must Operate the ACF Projects for Their Congressionally Authorized Purposes.

a. The Corps Should Acknowledge the Statutory Authorized Purposes for the ACF Reservoirs.

Congress enacted several federal statutes which provide the Corps' authority for its initial construction and subsequent operation of the ACF reservoirs. Any revision to the water control manual for the ACF River System must comply with those laws as well as with the Corps' regulations. TRWDA understands the federal reservoirs' primary Congressionally authorized purposes to be as follows:

- **Lake Lanier: Hydropower, downstream navigation, and flood control.** Sources: Pub. L. No. 79-525, 60 Stat. 634, 635 (1946) (referencing H.R. Doc. 80-300 (1946)).
- **West Point: Flood control, hydropower, fish and wildlife recreation, general recreation, and navigation.** Sources: Pub. L. No. 87-874, 76 Stat. 1173, 1180, (1962) (referencing H.R. Doc. No. 87-570 (1962)).
- **Walter F. George: Navigation and hydropower.** Sources: Pub. L. No. 79-14, 59 Stat. 10, 11, 17 (1945) (referencing H.R. Doc. No. 76-342 (1939)); Pub. L. No. 79-525 (referencing H.R. Doc. 80-300); Resolution of House Public Works Committee (May 19, 1953).
- **George W. Andrews: Navigation.** Sources: Pub. L. No. 79-14; Pub. L. No. 79-525; Resolution of House Public Works Committee (May 19, 1953).
- **Jim Woodruff: Navigation and hydropower.** Sources: Pub. L. No. 79-14; Pub. L. No. 79-525.

The laws cited above are the primary sources of the Corps' authority with respect to the ACF reservoirs. They provide the legal basis for how the Corps should operate the

ACF reservoirs. To demonstrate compliance with these applicable laws and authorities, TRWDA urges the Corps to provide a clear explanation of the primary Congressionally authorized purposes for each reservoir in its revised manual and in the accompanying environmental documentation.

b. The Federal Action Is: Reservoir Operations for their Congressionally Authorized Purposes.

TRWDA urges the Corps to include in its environmental documentation a clear explanation of the federal "action" which the Corps is evaluating for purposes of complying with the National Environmental Policy Act. That "action" should be defined as the operation of the ACF reservoirs in accordance with their Congressionally authorized purposes.

Events leading to the development of the Corps' present Interim Operations Plan ("IOP") and Revised Interim Operations Plan ("RIOP") for the ACF river basin illustrate our concerns. In our view, the Corps never clearly defined the federal action which was the subject of its Section 7 consultation with the U.S. Fish and Wildlife Service ("FWS") under the Endangered Species Act ("ESA"). Under ESA Section 7(a)(2), federal agencies are required to consult with FWS to insure a proposed action does not (1) jeopardize the continued existence of a listed species, or (2) destroy or adversely modify the species' designated critical habitat. 16 U.S.C. § 1536(a)(2). If the action would cause jeopardy or adverse critical habitat modification, FWS is authorized to propose reasonable and prudent alternatives and reasonable and prudent measures. However, in developing the Corps' IOP and RIOP, the federal action constituting the basis for consultation was never clear. Rather than presenting to FWS its standard operating procedures under the authorizing statutes, the Corps entered into open-ended negotiations with FWS and developed what amounts to a freestanding conservation agreement for the Apalachicola River. The resulting RIOP now drives the Corps' operations for the rest of the ACF system.

TRWDA urges the Corps not to repeat that inappropriate model as it revises its manual. The Corps should begin by setting forth a set of operations that fulfills the authorized purposes of the reservoirs, according to the primary Congressional authorities. To the extent any manual revisions allow for alternative operations—such as operations to serve secondary project purposes or to comply with the ESA and other federal laws—the Corps should consider such alternatives only on the following terms:

(1) Any alternative that differs from optimal operation of the reservoirs for their primary Congressionally authorized purposes should be clearly identified as such.

(2) The need and/or legal basis to deviate from operation of the reservoirs for optimal fulfillment of the primary Congressionally authorized purposes should be clearly explained.

(3) The Corps should clearly explain applicable limitations on any deviation from operations for primary Congressionally authorized purposes, such as a time limit and the circumstances under which the Corps will restore primary operating parameters.

c. Revisions to the Manual Must Recognize Navigation as a Primary Congressionally Authorized Purpose and Reflect Statutory Intent to Support Downstream Communities.

A central and consistent Congressionally authorized purpose of all the ACF reservoirs as enacted by Congress is to support navigation. Commercial navigation on the Chattahoochee and Apalachicola Rivers has been historically limited to points between the Gulf of Mexico and the fall line at Columbus, Georgia. Most of the ACF projects also support hydropower; however, the lowermost hydropower facility (Woodruff) is a run-of-river project with no storage capacity, as is Andrews, the nearest upstream reservoir. If navigation is limited to points below the fall line, and the hydropower project farthest downstream is run-of-river, the inevitable conclusion is that Congress intended for the Corps to operate the upstream storage reservoirs, and especially the reservoir with the most storage capacity, substantially for purposes that would be realized in the lower regions of the ACF Basin, including navigation. Any revisions to the manual must be consistent with that clear demonstration of Congressional intent.

TRWDA is well aware of the reduction in commercial navigation which has occurred in the ACF River System in recent years. However, a major contributing factor was the failure of the Corps to properly maintain the channel, and the Corps must not ignore its statutory obligation to provide navigation as it revises its water control manual. The critical limitation on navigation is the lack of proper maintenance of a few small stretches of the Apalachicola River, which blocks access from the upstream Chattahoochee and Flint Rivers south to the Gulf of Mexico. However, channel maintenance is the Corps' responsibility under federal law.[1] The primary hindrance to navigation in the ACF system is the Corps' failure to provide it. The Corps must not and cannot lawfully use its own failure to perform its statutory duty to maintain the Apalachicola River for navigation as a basis to unilaterally reorder the project purposes without first obtaining Congressional approval to do so.

To justify its own failure to maintain the navigation channel, the Corps has cited a 2005 decision of the Florida Department of Environmental Protection ("FDEP") to deny certain state environmental authorizations for the Corps' channel maintenance activities. TRWDA remains concerned and disappointed that the Corps would so easily place itself

[1] TRWDA provided a thorough explanation of the Corps' obligation to maintain the Apalachicola River for navigation in a petition to the District Engineer and the Chief Engineer dated March 2, 2006, asking the Corps to resume navigation maintenance pursuant to Section 404(t) of the Clean Water Act. We trust that document remains available to the Corps, but we will be pleased to provide the Corps additional copies if needed.

in a subservient position to a state and allow a state agency to veto the Corps' federal authority and activities. TRWDA shares the concerns of FDEP and environmental groups with respect to the environmental impacts of certain dredging and disposal practices which were utilized in the past. However, TRWDA is convinced there are practical solutions for the Corps to be able to resume its channel maintenance activities in a manner acceptable to FDEP and all affected parties. In any event, the Corps should exercise its federal statutory preemptive authority to maintain the channel for navigation.

Aside from the direct interest of TRWDA and its members in navigation, we believe the Corps' provision of water flow sufficient to support navigation would also support industrial and municipal requirements, which are discussed further in Part 3 below. In addition, flows in the Chattahoochee and Apalachicola Rivers sufficient to support navigation will be beneficial to aquatic species and the natural resources of the Apalachicola River and Apalachicola Bay. A minimum flow of 5,000 cfs at Woodruff Dam has been established to benefit certain species protected under the ESA. However, it is the position of Apalachicola Bay and River Keeper and the Franklin County Seafood Workers that those minimum flows do not adequately protect the Bay and its other resources, including commercial fisheries and other ecological resources, on a sustained basis. TRWDA believes flows sufficient to meet Middle and Lower Chattahoochee requirements would increase the frequency of instances when flows below Woodruff Dam would exceed 5,000 cfs to benefit the Bay, particularly when combined with inflow contributions from the Flint River.

d. Water Supply Is Not a Primary Congressionally Authorized Purpose.

Congress has established the primary purposes of the ACF reservoirs, as described more fully above. All other purposes, including local water supply, are secondary. The Corps may not allow any secondary use of the ACF reservoirs that would interfere with those primary purposes without further Congressional approval. Specifically, according to the statutes governing the Corps' reservoir operations:

> Modifications of a reservoir project heretofore authorized, surveyed, planned, or constructed to include storage . . . which would seriously affect the purposes for which the project was authorized, surveyed, planned, or constructed, or which would involve major structural or operational changes shall be made only upon the approval of Congress as now provided by law.

43 U.S.C. § 390b(d). The Corps has interpreted this statutory provision to limit allocation of storage for water supply to the lesser of 15% of a project's total storage or 50,000 acre-feet. ER 1105-2-100, ¶ 3.8.b(5). The statute and the Corps' regulations are consistent with longstanding federal policy to view water supply as primarily a local and not a federal responsibility. Because local water supply is not among the primary project purposes established by Congress, federal law imposes strict limits on the Corps' authority to allow water diversions for local consumption.

3. The Corps Must Acknowledge and Address the Needs of the Middle Portions of the ACF River System.

Water shortages in North Georgia and endangered species in the Apalachicola River have dominated the public discourse on ACF operations in the past two years, due to the drought in the Southeast. However, Congress authorized and instructed the Corps to build and operate the ACF reservoirs substantially for the benefit of those located in between those two ends of the ACF River System. For example, as explained above, Congress authorized the three storage reservoirs, including Lake Lanier, primarily for navigation support and hydropower production below the fall line. West Point is subject to Congressional authorizations for additional purposes, namely, flood control, fish and wildlife recreation, and general recreation for those in the La Grange area. As the Corps develops revisions to its ACF water control manual, it must ensure its operations serve the communities and businesses of the ACF River System's middle regions.

a. Communities in the Lower Portions of the Basin Depend on the Corps' Provision of Adequate Flows.

Communities and businesses located and grew in cities like Dothan, Eufaula, and Phenix City, Alabama, and Bainbridge, Columbus, and La Grange, Georgia, with the full expectation that the Corps would operate the ACF reservoirs according to the laws authorizing their construction and operation. Those communities spent millions of dollars to build public works projects as well as infrastructure including the Eufaula Inland Dock, the Phenix City Inland Dock, and the Columbia Inland Dock in Alabama and the Port of Columbus and Port Bainbridge in Georgia. Those facilities made it possible for local communities to sell and ship agricultural, silvicultural and mineral products in bulk and to receive large deliveries of fuels and fertilizers by barge. Companies including TRWDA members Georgia Pacific, MeadWestvaco and Southern Nuclear Company sited and built major industrial facilities on the Chattahoochee River based in large part on the federal commitment that flows sufficient to serve the Congressionally authorized purposes would provide for their industrial cooling and discharge assimilation. They also expected to reap the benefits associated with barge transport of fuel and bulk products provided by a reliable navigation channel.

Not only have these communities and businesses acted and invested in reliance on the Corps' lawful operation of the ACF reservoirs in the past, but they are counting on adequate flows for their future survival. Industry and commerce will continue to grow in southeastern Alabama and southwestern Georgia with adequate flows and channel maintenance. Several new economic opportunities which depend on flows in the Chattahoochee and Apalachicola Rivers have recently been developed or are under serious consideration. The Corps and the cities of Columbus, Georgia, and Phenix City, Alabama, have been working on a river restoration project involving the removal of two small, historic dams to improve habitat and create a whitewater recreation course. Riverway South—an organization extending across all three ACF states—is actively promoting eco-tourism, and its success depends on the assurance of a safe and reliable

navigation channel from Columbus, Georgia, south to the Gulf of Mexico. Longleaf Energy Associates has a permit to site a new energy production facility on the Chattahoochee River in Early County, Georgia, and the company plans to begin construction next year. Several projects which include marinas or other river-based recreational opportunities have recently opened, are under development, or are in serious consideration, including a new marina which recently opened in Bainbridge, Georgia; the Trail's End Resort and Marina on Lake Seminole; a proposed new marina near the National Infantry Museum in Columbus, Georgia; a proposed marina and nature trail in Quitman County, Georgia; and a kayak venture proposed for Chattahoochee, Florida.

Without adequate flows and safe and reliable navigation, these opportunities for economic growth and business development will be subject to difficult challenges. TRWDA urges the Corps to explain in its revised manual and the accompanying environmental documentation how it intends to provide for the needs of the communities and industries located in the middle and lower portions of the ACF River System.

b. The Corps Must Continue to Provide Agreed-upon Minimum Flows in the Middle and Lower Chattahoochee River.

As you know, in recent years, representatives of Alabama, Florida, and Georgia attempted to develop a mutually agreeable allocation of water in the ACF River System. In that context, on July 22, 2003, the three governors signed an agreement which set flow parameters, including the following:

- "On the Chattahoochee River above its confluence with Peachtree Creek, a flow of 750 cfs will be maintained on a daily basis, with the understanding that the State of Georgia is entitled to a variable flow regime that requires no less than 650 cfs in winters. . . ."
- "On the Chattahoochee River at Columbus, Georgia, a flow of 1350 cfs will be maintained on a daily basis at all times, and a flow of 1850 cfs will be maintained on a weekly basis provided that the top of the storage pool in West Point Reservoir is above 621.6 feet."
- "On the Chattahoochee River at Columbia, Alabama, a flow of 2000 cfs will be maintained on a daily basis."
- "On the Apalachicola River at Chattahoochee, a minimum flow of 5000 cfs will be maintained on a weekly basis at all times. . . ."

Memorandum of Understanding Regarding Initial Allocation Formula for the ACF River Basin, ¶ 4 (July 22, 2003) (emphases added). Those flow figures were to be included in any allocation formula agreed to by the parties, and they were "intended to be met by the combined actions of maintaining water uses consistent with the allocation formula, and

by the Corps operating the federal reservoirs consistent with the allocation formula." *Id.* (emphasis added). The license issued by the Federal Energy Regulatory Commission for the Middle Chattahoochee Project, a privately owned, run-of-river project located between West Point reservoir and Columbus, Georgia, includes flow targets which depend on the Corps' releases from the West Point Dam upstream. Those targets reference the same flow levels for Columbus, Georgia, which are included in the tri-state agreement. Specifically, the targets are 1,350 cfs daily average, 1,850 cfs weekly average, and 800 cfs instantaneous when the Corps provides flows at or above those levels or, when the project's inflow is less than those levels, outflow equal to inflow. *See* 109 FERC 62,246, at Article 402 (2004).

In revising its manual, the Corps should develop its operation plan to satisfy the flow parameters agreed to by all three states. TRWDA in particular calls the Corps' attention to the Middle and Lower Chattahoochee flow requirements, namely, 1,350 cfs daily and 1,850 cfs weekly at Columbus, Georgia, and 2,000 cfs daily at Columbia, Alabama. We believe those flow levels are generally sufficient to meet the Congressionally authorized purposes of the ACF River System. They also correspond to the flows that are necessary to meet the water supply and water quality needs of Columbus Water Works, as well as the operation of industrial facilities on the Chattahoochee River, including those facilities operated by Georgia Pacific, MeadWestvaco, and Southern Nuclear Company.

c. The Corps Should Not Rely on Flint River Flows to Meet Apalachicola River Needs to the Detriment of Flows in the Middle and Lower Chattahoochee River.

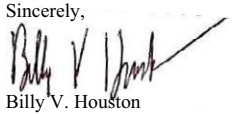
Recently, increased flows from the Flint River have contributed to the Corps' release of water from Woodruff Dam to provide for the 5,000 cfs minimum flows at Chattahoochee. Like all stakeholders in the basin, TRWDA is grateful for any inflows that help meet system needs. However, the Corps must not rely on Flint River flows to meet Apalachicola River requirements to the detriment of the Middle and Lower Chattahoochee River communities. Contributions from the Flint River should provide no rationale for the Corps to reduce flows in the Middle and Lower Chattahoochee River below those levels necessary to support Congressionally authorized purposes and industrial and municipal needs.

As noted above, the primary Congressionally authorized purposes of the ACF federal reservoirs include hydropower, navigation, and flood control. The Corps' ability to fulfill the reservoirs' purposes for the benefit of the communities located along the ACF River System from Dothan, Alabama, to Gainesville, Georgia, depends exclusively on conditions in the Chattahoochee River. The Flint River has absolutely no effect at any point on the Chattahoochee River above its confluence with the Chattahoochee just above the Jim Woodruff Dam. Because Flint River conditions are independent from Chattahoochee River conditions, there is no logical basis to alter operations at the Corps'

Chattahoochee River projects to the detriment of Middle and Lower Chattahoochee River stakeholders in response to conditions in the Flint River.

Thank you again for this opportunity to comment. Please feel free to contact me at (334) 668-1000 if you have any questions.

Sincerely,



Billy V. Houston
Executive Director