

Middle Chattahoochee

# Middle Chattahoochee Council Meeting

March 16, 2023



**GEORGIA  
WATER PLANNING**

[waterplanning.georgia.gov](http://waterplanning.georgia.gov)

# Agenda

## **Objectives:**

- 1) Select high priority management practices
- 2) Review water quantity and quality committee reports
- 3) Approve draft plan for public review
- 4) Discuss next meeting and remaining process for plan review and revision

9:45 am Registration  
10:00 am Welcome, Agenda Review – Courtney Cooper, GWPPC  
10:10 am Chair’s Report – Chairman Davis  
10:20 am Planning Timeline – Meagan Szydzik, GWPPC  
10:30 am Chattahoochee River Act – Chris Manganiello, Chattahoochee Riverkeeper  
10:45 am EPD Report – Kelli-Ann Schrage, GAEPD  
11:00 am Water Quality Committee Report – Victoria Barrett  
11:50 am Introduce Management Practice Prioritization Activity – Courtney Cooper, GWPPC  
12:00 pm Lunch  
12:40 pm Discuss Management Practice Priorities – Courtney Cooper, GWPPC  
1:00 pm ACFS Drought Exercise Overview  
1:15 pm Water Quantity Committee Report – Patrick Bowie  
1:30 pm Discuss outstanding planning questions  
2:30 pm Public Comment  
2:50 pm Approval of draft plan for public review  
3:50 pm Next Steps – Meagan Szydzik, GWPPC  
4:00 pm Adjourn



# Introductions

## STEVE DAVIS

Columbus Water Works

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Georgia EPD

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# Middle Chattahoochee Council Members

| Name                                  | City           | County   | Name                                  | City        | County        |
|---------------------------------------|----------------|----------|---------------------------------------|-------------|---------------|
| Hannah V. Anderson                    | Fort Gaines    | Clay     | Kevin Hayes                           | Franklin    | Heard         |
| John M. Asbell                        | LaGrange       | Troup    | Bill Heath                            | Breman      | Haralson      |
| Victoria Barrett                      | Richland       | Stewart  | Ken Johnson                           | Fort Gaines | Clay          |
| Laura Lee Bernstein                   | Columbus       | Muscogee | Harry Lange                           | Cataula     | Harris        |
| Patrick Bowie                         | LaGrange       | Troup    | Carvel Lewis                          | Georgetown  | Quitman       |
| Jimmy Bradley                         | Cuthbert       | Randolph | Adolph McLendon                       | Richland    | Stewart       |
| Barbie Crockett                       | Centralhatchee | Heard    | George E. Moon III                    | West Point  | Harris        |
| Steve Davis, Chair                    | Columbus       | Muscogee | Mac Moyer                             | Lumpkin     | Stewart       |
| Philip Eidson                         | Tallapoosa     | Haralson | Denney Rogers                         | Ephesus     | Heard         |
| Tony Ellis                            | Tallapoosa     | Haralson | Jim Thornton                          | LaGrange    | Troup         |
| James Emery                           | LaGrange       | Troup    | Kenneth M. Van Horn                   | Cusseta     | Chattahoochee |
| Gardiner Garrard                      | Columbus       | Muscogee | Jason Weeks                           | Georgetown  | Quitman       |
| Dan Gilbert                           | Columbus       | Muscogee | Don Watson (Alternate)                | LaGrange    | Troup         |
| Joseph Griffith                       | Buchanan       | Haralson | Matt Windom                           | Bowdon      | Carroll       |
| Tim Grizzard                          | Franklin       | Heard    | Robert York                           | Tallapoosa  | Haralson      |
| Jimmie L. Hayes                       | Morris         | Quitman  |                                       |             |               |
| Senator Jason Anavitarte (Ex-Officio) |                |          | Representative Randy Nix (Ex-Officio) |             |               |



# Chair's Report

Presented by Chairman Davis



# Planning Timeline

*Meagan Szydzik*



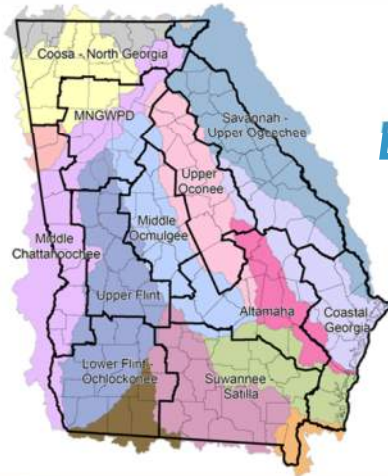
# Summary from last meeting - November 30<sup>th</sup>

- Discussed water quality assessment results
- Reviewed and discussed committee reports from Water Quality & Quantity Committees
- Discussed outstanding committee issues in break-out sessions
- Discussed plan revisions that needed input from the full Council
- Considered revisions to recommendations from the Inter-Council Coordination Committee



# Regional Water Plan Update

## Regional Water Plan Review and Revision Schedule



*EPD targeted date of adoption of revised Regional Water Plan by June 2023*



# Chattahoochee River Act

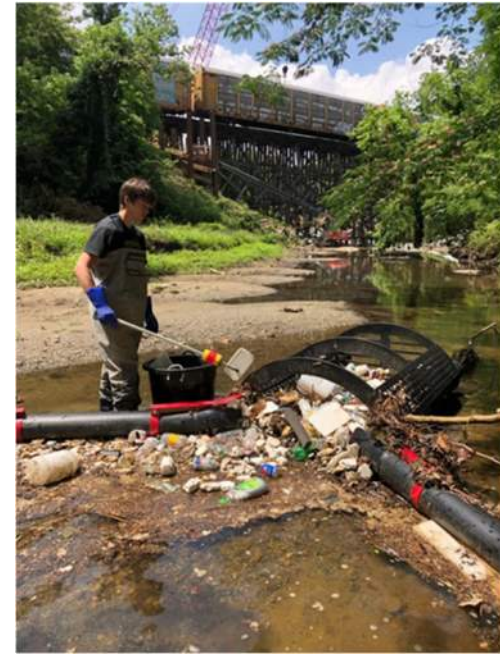
*Chris Manganiello, Chattahoochee Riverkeeper*





# CHATTAHOOCHEE RIVERKEEPER®

- Established in 1994
- 11<sup>th</sup> licensed Waterkeeper
- Approximately 10,000 members
- Offices in Gainesville, Atlanta and LaGrange
- Non-profit: Advocacy, education, research, communications, cooperation, monitoring, and legal action
- <https://chattahoochee.org/>



# Chattahoochee River Program, Sec. 8144



- Water Resources Development Act ([2022](#))
- Corps to develop 2-yr Comp Plan
- Eligible project categories:
  - Sediment and erosion control projects,
  - Ecosystem restoration projects,
  - Protection of essential public works projects,
  - Wastewater treatment plants and related facilities,
  - Beneficial uses of dredged material projects, and
  - Other related projects
- Cost-share 75/25 percent federal/non-federal
- Authorization to Appropriate \$40 million
- Questions? [cmanganiello@chattahoochee.org](mailto:cmanganiello@chattahoochee.org)



# EPD Updates

*Kelli-Ann Schrage*



# Draft and Final Regional Water Plans

- Council submits Draft Updated Plan to EPD by Wednesday, March 29
- Draft Updated Plan will be put on Public Notice by EPD on March 31
- 45-day public comment period will end on May 15, 2023
- Council reviews/incorporates public comments received during their June meetings
- Final Updated Plan should be submitted to EPD by Friday, June 23
- EPD Director adopts plans by June 30, 2023

# EPD Updates

- EPD finalized a Water Quality Trading Guidance on February 7
  - <https://epd.georgia.gov/water-quality-trading>
- Public drinking water systems: lead service line inventories (due Oct. 2024)
  - Rulemaking to address electronic submissions
  - EPD & GEFA implementing an online system to accept & track these submissions
  - <https://epd.georgia.gov/watershed-protection-branch/drinking-water>
- Construction stormwater general permits will be reissued this summer
  - Stakeholder meetings have been held
  - Draft permits will go out on public notice
  - <https://epd.georgia.gov/watershed-protection-branch/stormwater>

# FY2023 Section 319(h) Grant Funding

- Currently accepting applications for projects that:
  - Implement watershed management plans
  - Address impaired waters
  - Address NPS pollution
  - Install Best Management Practices (BMPs)
  - Engage in partnerships
  - Collect water quality data
  - Result in measurable water quality improvement
- Submit online applications via the 319(h) Grant Application Portal (GAP) by **APRIL 30, 2023**



# FY2023 Section 319(h) Grant Funding

- Cost-Share: 60% Federal/40% Non-Federal Match
- Up to \$400,000 per project
- Estimated FY2023 Total Funding Available: \$2.1 Million
- Preferred Project Period: 3 years
- Who's eligible for this funding?
  - State Agencies
  - City or County Governments with Qualified Local Government status
  - Regional Commissions
  - Soil and Water Conservation Districts
  - Resource Conservation and Development Councils
  - Local and regional school systems
  - State colleges and universities



Contact: Mary Gazaway,  
[mary.gazaway@dnr.ga.gov](mailto:mary.gazaway@dnr.ga.gov)  
or (470) 524-0556

# Water Quality Committee Report

Presented by Victoria Barrett



# Water Quality Committee: February Meeting

- Meeting on February 28, 2023
- Review Dissolved Oxygen and Chlorophyll a/Nutrient issues questioned by the water quantity committee
- Review and discuss Section 3, 5, 6
- Select representative to present at today's council meeting

Members: Victoria Barrett, Laura Lee Bernstein, Harry Lange, Ed Moon, Steve Davis



# Key Water Quality Changes to Section 3

## Section 3.3.1. - Fish & Wildlife Conservation Impacts

The health of the fisheries in West Point and Walter F. George Lakes is dependent in part on the balance of nutrient availability in the form of phosphorous and nitrogen contributions from point and nonpoint sources of pollution and resulting algal productivity measured in terms of chlorophyll-a. Similarly, the relationships between water turbidity, water detention/velocity, water temperature, weather/flow conditions, pH, growing season duration, and algal growth require further study in West Point and Walter F. George lakes to support re-evaluation of the Chlorophyll-a standards that are appropriate for these reservoirs. A chlorophyll-a standard of 25 micrograms/liter for Walter F. George Lake has been suggested as reflective of Southeastern Plains Ecoregion reservoirs.<sup>13</sup> At Walter F. George Lake, GAEPD plans to develop a total maximum daily load (TMDL) standard and will analyze the requirements needed to meet the TMDL for total phosphorus and total nitrogen. If the evaluation indicates the criteria cannot be met, GAEPD may re-evaluate the standards at Walter F. George. At West Point, GAEPD lowered the lake's chlorophyll-a standard levels in 2015 and additional studies are not planned at this time. In 2021, EPD released a new lake criteria guidance document for recommended ambient water quality criteria to address pollution in lakes and reservoirs.

The Middle Chattahoochee Water Planning Council recognizes the need for a better understanding of ecological cause and response variables in the Middle Chattahoochee reservoirs in order to support setting an operating management strategy. The Council believes that precautions should be taken to ensure the long-term sustainability of the reservoirs as fishery and wildlife habitat.



# Key Water Quality Changes to Section 3

## Section 3.3.1 - Water Quality Impacts

USACE operations can affect downstream water quality, and the USACE should operate in a manner that supports water quality downstream. For example, instream flows in the Chattahoochee River at Columbus and Columbia have been identified as areas of concern by the Middle Chattahoochee Water Planning Council regarding flow availability for the assimilation of permitted wastewater discharges, including the discharge of the City of Columbus. The WCM acknowledges flows needed for assimilative capacity at Columbus, but it is not obligated to meet those flows as operational controls. Georgia Power projects located above Columbus are required in their FERC licenses to provide minimum flows at Columbus, but those releases are dependent on releases from West Point Dam. The flow release pattern by the USACE and concern regarding the available assimilative capacity in the Chattahoochee River are a driver for the Council's desire to achieve an equitable balance of flow contributions from the Chattahoochee and Flint Basins to meet required downstream flows. Heavy rainfall and resulting high river flows in the Flint River can result in more water storage and lower flow releases in the Chattahoochee River.



# Key Water Quality Changes to Section 3

## Section 3.3.3 Surface Water Quality

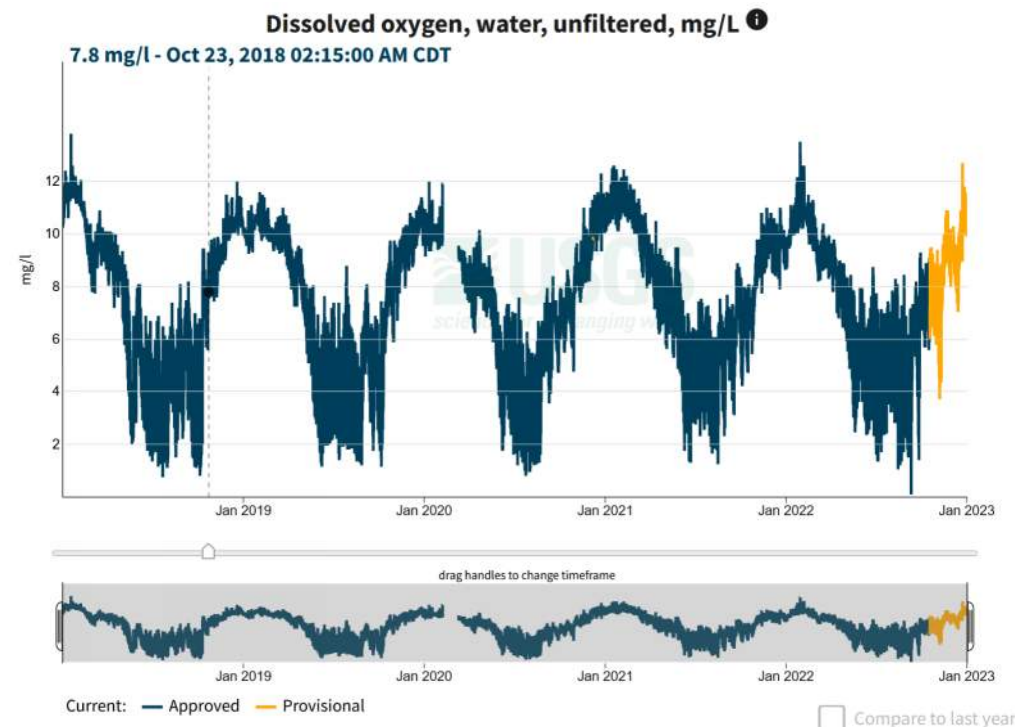
The Council has discussed that there is only moderate to limited assimilative capacity in the Chattahoochee River downstream of Walter F. George Reservoir. Figure 3-7 below is a graph of the dissolved oxygen measured 0.36 miles downstream of the dam from USGS data. The data shows that the operations of the dams (flow releases and operation of aerator systems) by the US Army Corps of Engineers may be contributing to a violation of the water quality standards of dissolved oxygen level never below 4 mg/L. The occurrence of low dissolved oxygen below the dam is a concern for the Council, and it is the basis for recommendations in management practice IU-2 in Section 6.



# Key Water Quality Changes to Section 3

## Section 3.3.3 Surface Water Quality

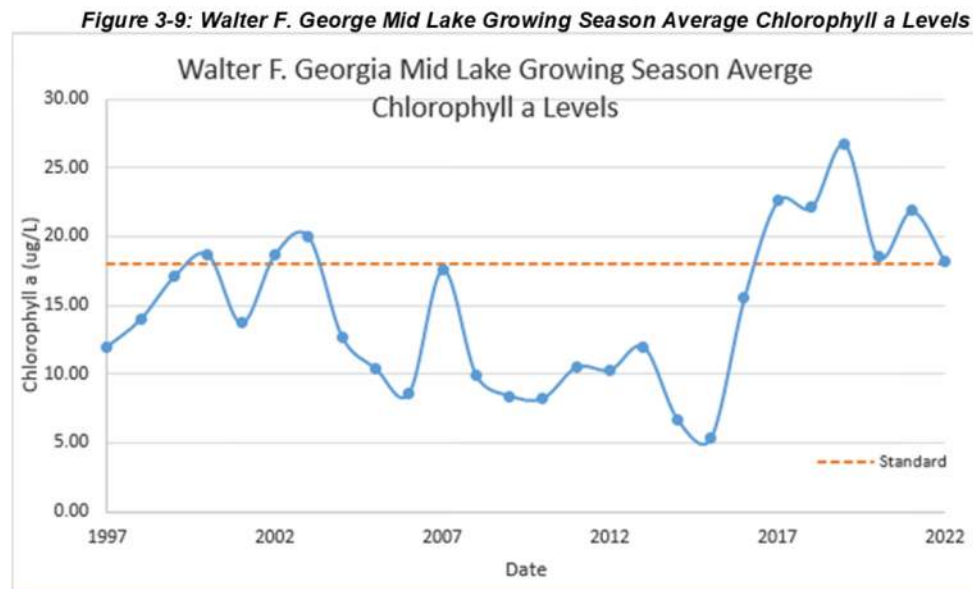
Figure 3-7: Dissolved Oxygen in the Chattahoochee River Downstream of Walter F. George Reservoir



# Key Water Quality Changes to Section 3

## Section 3.3.3 Surface Water Quality

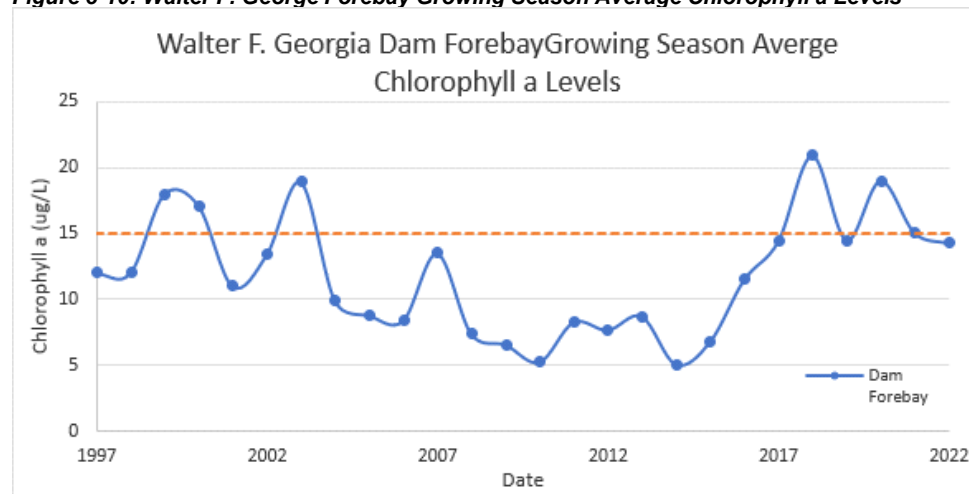
The Council notes that data provided by GAEPD below supports the model finding that existing Chlorophyll a standards have not been met in Walter F. George at either the mid-lake or dam forebay sampling locations in the 2018-2022 timeframe. The result of this finding is that GAEPD must develop a TMDL as required by the Clean Water Act.



# Key Water Quality Changes to Section 3

## Section 3.3.3 Surface Water Quality

Figure 3-10: Walter F. George Forebay Growing Season Average Chlorophyll a Levels



# Key Water Quality Changes to Section 5

## Section 5.3 Surface Water Quality Comparisons

The Chattahoochee River downstream of Walter F. George is projected to have limited assimilative capacity in the future similar to the existing conditions as noted in Section 3, and this supports the Council's recommendation in management practice IU-2 in Section 6.

As noted in Section 3, Walter F. George water quality data shows that water quality conditions do not currently meet standards, and the modeled findings for future conditions projects similar concerns. TMDL development to address this condition and resulting changes in water quality and the water quality assessment will be reviewed by the Council in future regional water plan updates.



# Key Water Quality Changes to Section 6

## Section 6.2 - Selected Water Management Practices

**IU-1:** Utilize and improve upon reservoir release quantity and timing in the Chattahoochee River to maintain and/or improve water quality in the Chattahoochee River below the Columbus Planning Node

Protect water quality in the Chattahoochee River in the Middle Chattahoochee Water Planning Region. Advocate for the U.S. Army Corps of Engineers operate such that:

- 1) the specific minimum flow levels stated in the Federal Energy Regulatory Commission license (800 cfs instantaneous; 1350 cfs daily average; 1850 cfs weekly average) are met at a frequency of 95% or higher at the USGS gauge at Columbus, and
- 2) any periods where flows are below these levels are managed to avoid possible downstream water quality impacts, including the stretch of river below Walter F. George Reservoir in which the water quality modeling shows assimilative capacity challenges (see Figure 5.2).

The Council recognizes that there may be tradeoffs in operations that support the system in meeting some targets while adversely affecting its capacity to meet others. The Council offers targets for flows and lake levels in Table 6-2 as its preferences and does not support implementation that leads to an outcome that is less desirable than historical conditions at any of these locations in the Basin.

See also: Recommendation #1 in Section 6.3.



# Key Water Quality Changes to Section 6

## Section 6.2 - Selected Water Management Practices

**IU-2:** Assess the potential to modify Chattahoochee River operations to protect instream uses and increase system conservation storage

Evaluate the following as possible changes in U.S. Army Corps of Engineers management in the Chattahoochee River Basin (See also: Recommendation #1 in Section 6.3):

- Revise the rule curve for West Point Lake winter drawdown operations to improve water resource benefits while also maintaining flood protection. A GAEPD study demonstrated the use of probability-based forecasts to reduce peak releases without compromising flood mitigation operations. Cooperative efforts between the state and the U.S. Army Corps of Engineers should be funded and implemented to fully evaluate and support adoption of the proposed rule curve modifications.
- Increase the rule curve at Lake Lanier by two feet to increase storage capacity in the system.
- Model Chattahoochee River operations under extreme conditions to evaluate system resilience (i.e., 2009 flood data; 1920's extreme drought data).
- Evaluate the stretch of river downstream of Walter F. George Reservoir to verify periods and river locations of low dissolved oxygen, probable causes, and recommendations to enhance assimilative capacity.



# Key Water Quality Changes to Section 6

## Section 6.2 - Selected Water Management Practices

### WQ-8: Implementation of monitoring of *E. Coli* to monitor stream quality

- Raise awareness of new *E. Coli* limits; Fecal Coliform limits were previously used as the bacterial indicator.
- Encourage seed grant or other research projects to delineate current water quality conditions in watersheds

| Short-Term Actions  | Long-Term Actions  | Responsible Parties   |
|---|--|---|
| GAEPD will implement new bacterial limit requirement monitoring and limits in revised permits | Potential delisting of impaired streams based on new <i>E. Coli</i> data instead of existing Fecal Coliform data | GAEPD<br>Permitted dischargers<br>Watershed monitoring groups |



# Key Water Quality Changes to Section 6

## Section 6.3 – Recommendations to the State

### 1. Address Regional Assimilative Capacity Limitations and Water Quality Concerns

The Middle Chattahoochee Water Planning Council recommends the following to address potential limitations to assimilative capacity and water quality concerns:

- The State of Georgia should work with USACE and EPA to improve water quality conditions (assimilative capacity) below Walter F. George Reservoir (see Management Practices IU-1 and IU-2.)
- GAEPD should conduct more detailed assimilative capacity model verification and consider existing discharge permit revisions to ensure assimilative capacity is available in the Chattahoochee River below Walter F. George Reservoir to support economic development.
- GAEPD should collect more dissolved oxygen data directly downstream of West Point Lake to identify the need for potential enhancements to ensure water quality standards are met.
- GAEPD should reevaluate the water quality standards for Chlorophyll *a* for both West Point Lake and Walter F. George prior to development of TMDLs and resulting regulatory standard changes, considering the balance between nutrient needs for fisheries and other water quality concerns.



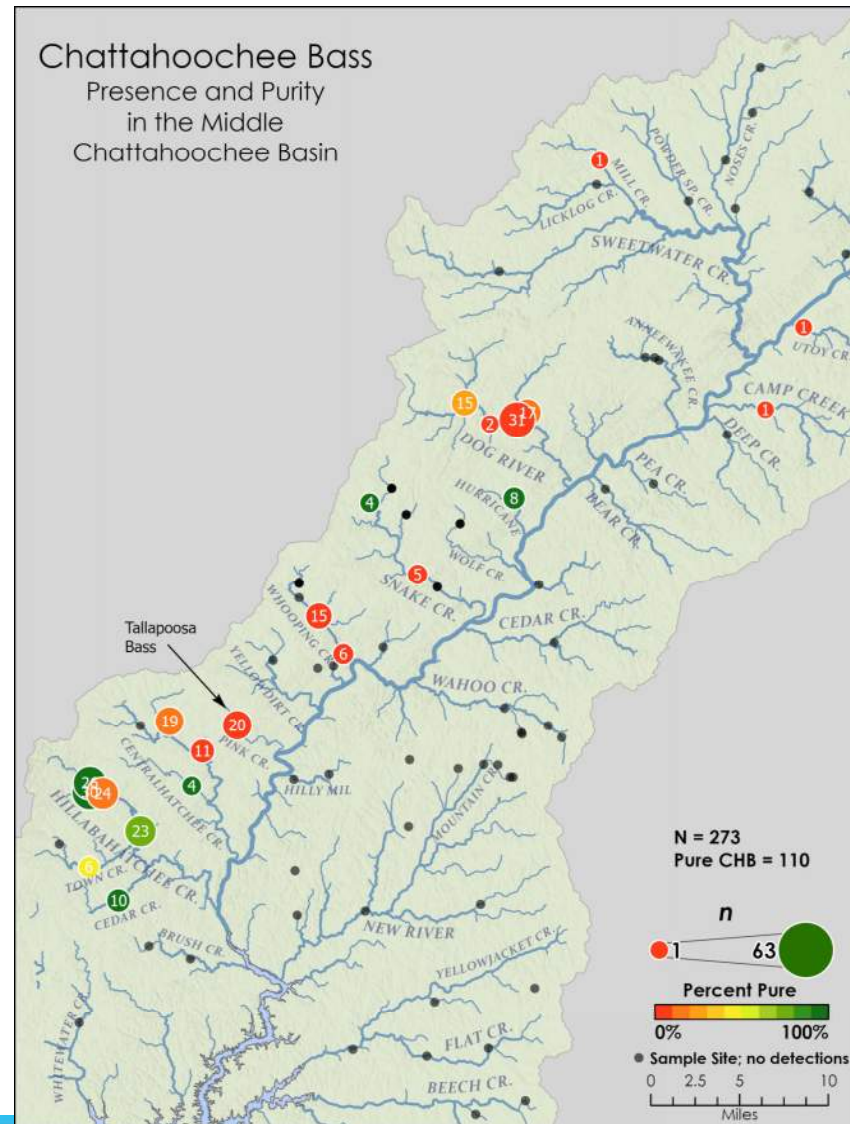
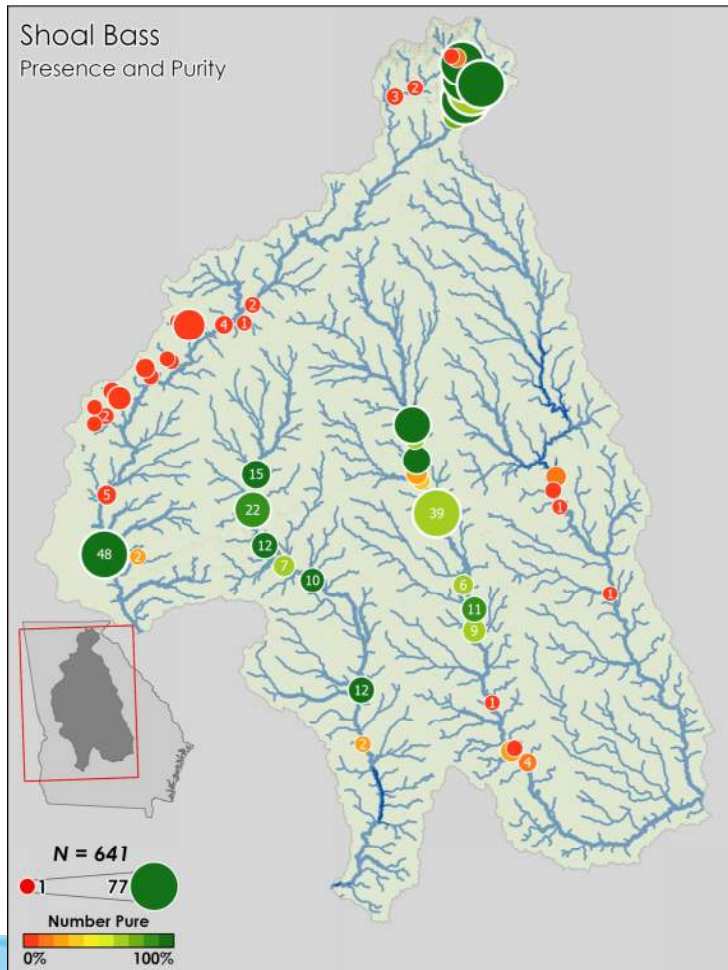
# Fisheries Questions

**Question:** What is the relationship between spotted bass and shoal bass? Particularly, are spotted bass native to this region and is there a competition that is driving shoal bass populations down?

Spotted bass are non-native in this area and hybridizing with native Shoal bass (Georgia's Official State Riverine Fish) and Chattahoochee bass to the point of extirpation in some areas of mainstem Chattahoochee and its tributaries. Spotted bass are causing tremendous problems all around the southeast and are pushing Smallmouth bass populations to the point of extinction. They are also helping to push Georgia's redeye bass to extirpation as well.

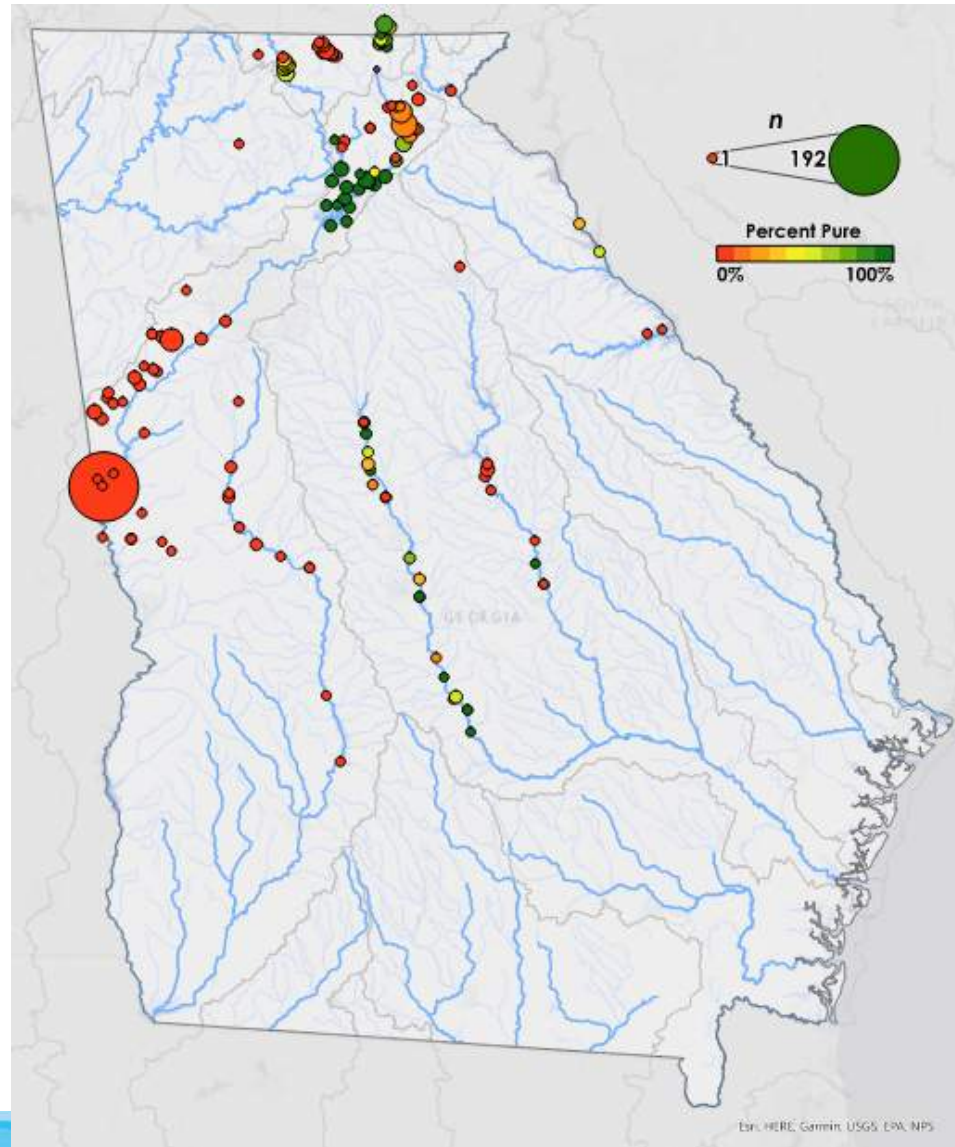


# Fisheries Questions



# Fisheries Questions

## Alabama Bass (formerly Alabama Spotted Bass) Genetics



# Fisheries Questions

**Question:** If changes were to be made to Walter F George dam similarly to what was done at Seminole, would Alabama Shad migrate all the way Columbus? If so, would this have a positive or negative impact to the other fish species?

Steve Sammons at Auburn reported that Alabama Shad are not migrating north according to recent 2010-2014 studies. Columbia Lock and Dam and Eufala Lock impede this migration. The closer conditions are to “natural”, the better Shoal Bass and Alabama Shad coexist.



# Fisheries Questions

**Question:** With the removal of the low head Georgia Power dams between West Point and Columbus, will this allow shoal bass to extend their population and range upstream? Would the habitat upstream support them there?

Yes, removal of dams will likely connect and increase Shoal Bass populations.



# Georgia Power Langdale and Riverview Dams Decommissioning

*Courtenay O'Mara, P.E.*





**Langdale and Riverview Dams  
FERC License Surrender and Decommissioning  
(FERC No. 2350 and 2341)**

**Middle Chattahoochee Water Planning Council  
March 16, 2023**

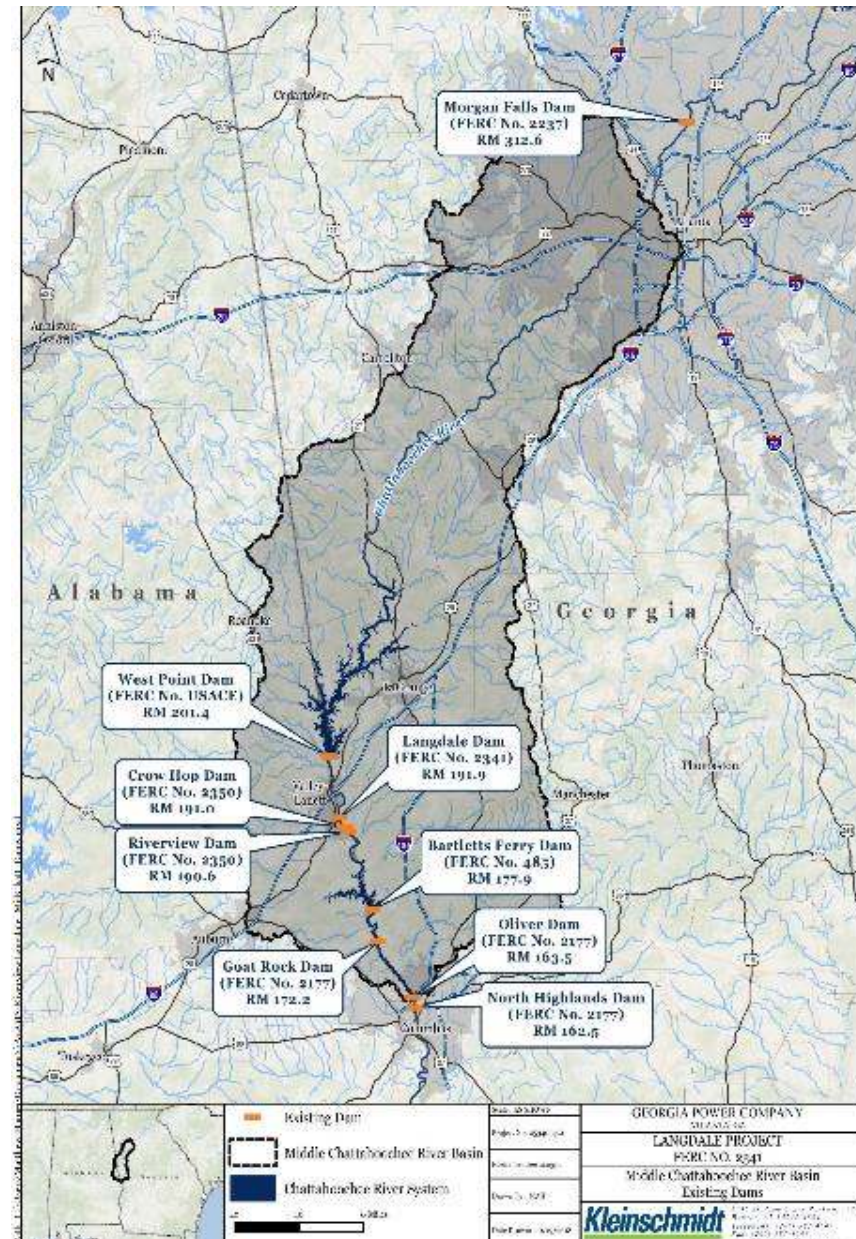
Courtenay O'Mara, P.E.



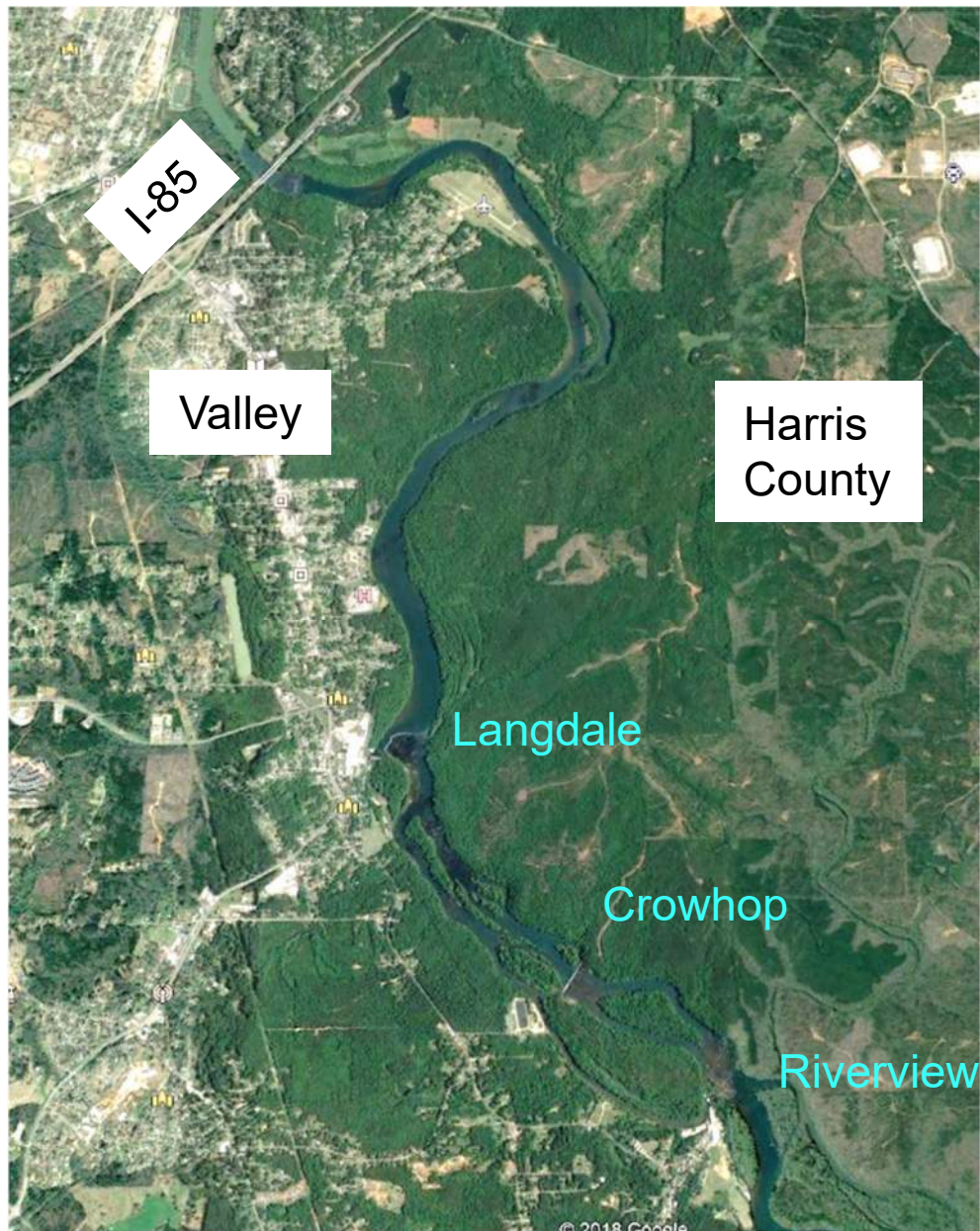
# Proximity of Langdale and Riverview Projects in the Middle Chattahoochee Basin



- 9.5 miles from West Point Dam to Langdale Dam
- 1.5 miles from Langdale to Riverview
- 1 mile from Langdale to Crowhop
- Upper reaches of Lake Harding impounded to Crowhop Dam
- Bartletts Ferry Dam, Goat Rock Dam, Oliver Dam and North Highlands Dam between Riverview and City of Columbus, GA



# Geographic Landmarks and Land Use



South of Interstate 85

South of West Point, Georgia and adjacent to City of Valley, Alabama in Chambers County, Alabama.

- Commercial/Industrial
- Residential

Adjacent to Harris County, Georgia

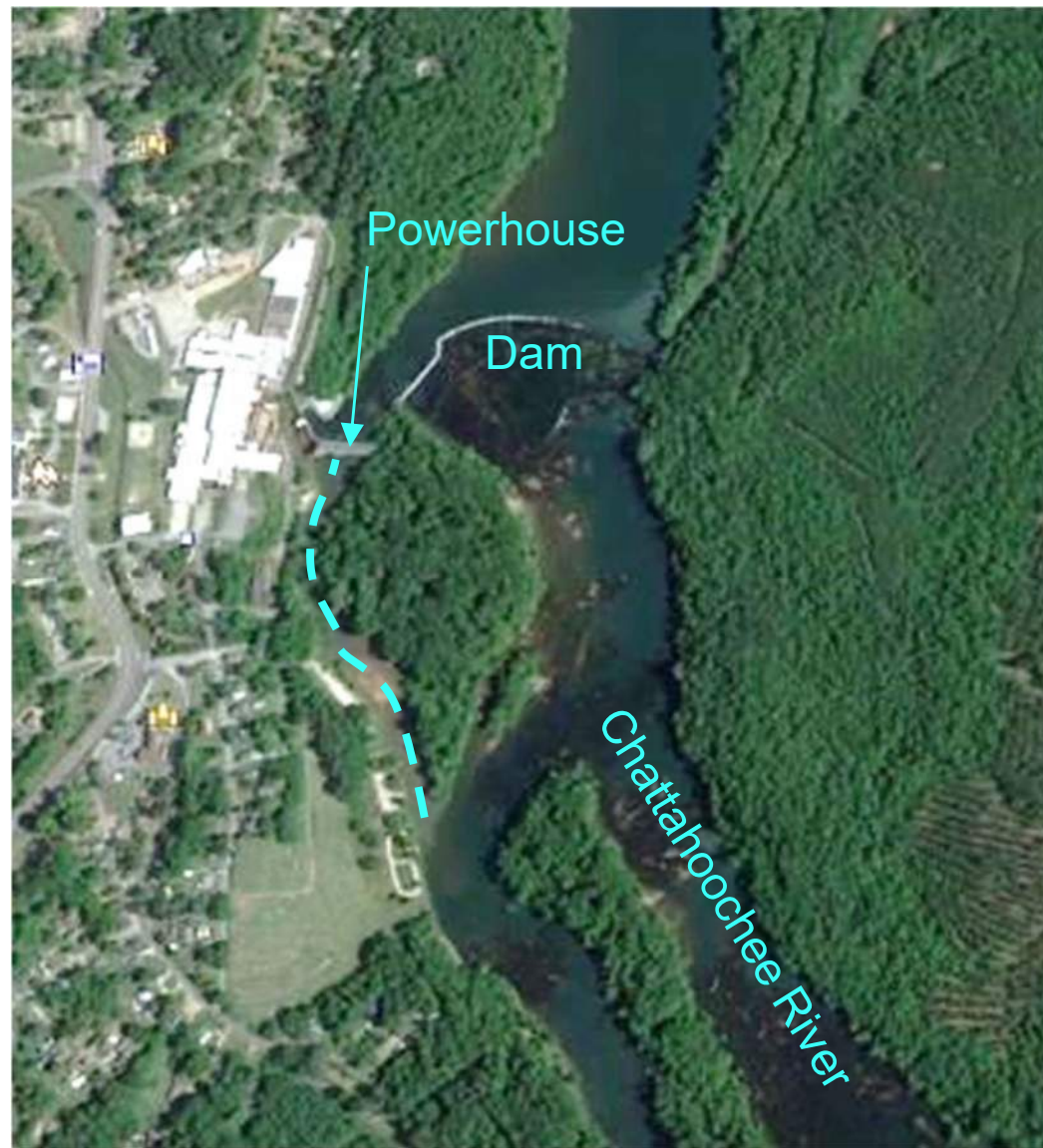
- Rural

# Description of Langdale and Riverview Projects



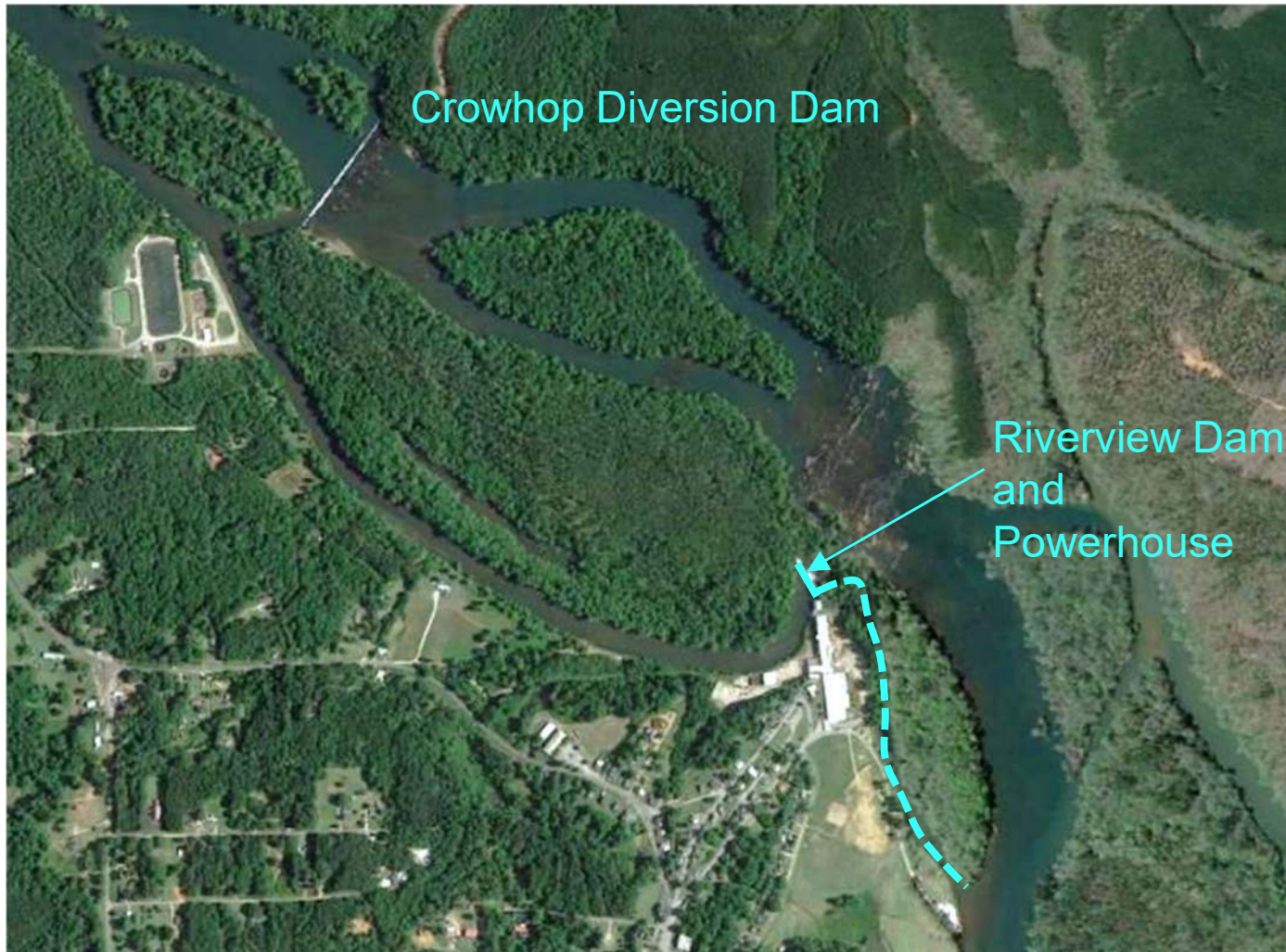
- Operating Mode: Run-of-River, flow regime dependent upon upstream Corps of Engineers' West Point Dam
- Dam Height: Range from 12 feet at Riverview and Crowhop to 15 feet at Langdale
- FERC Project Acreage:
  - Approximately 28 acres at Langdale
  - Approximately 11 acres at Riverview and Crowhop combined
- FERC Licenses Expire: December 31, 2023
- Application to Surrender Licenses Filed with FERC: December 18, 2018

# Langdale Project Area



2018 Google Earth Imagery

# Riverview Project Area



2018 Google Earth Imagery

# Facilities and Generating Units



Langdale Powerhouse



Riverview Powerhouse



Langdale Dam



Crowhop Dam



# Studies and Other FERC Process Documents

## Field Studies

- H&H Model
- Cultural Resources
- Mussel Survey
- Sediment Quality – Draft
- Sediment Transport - Draft
- Shoal Bass Survey - Draft

## Other Documents for Process

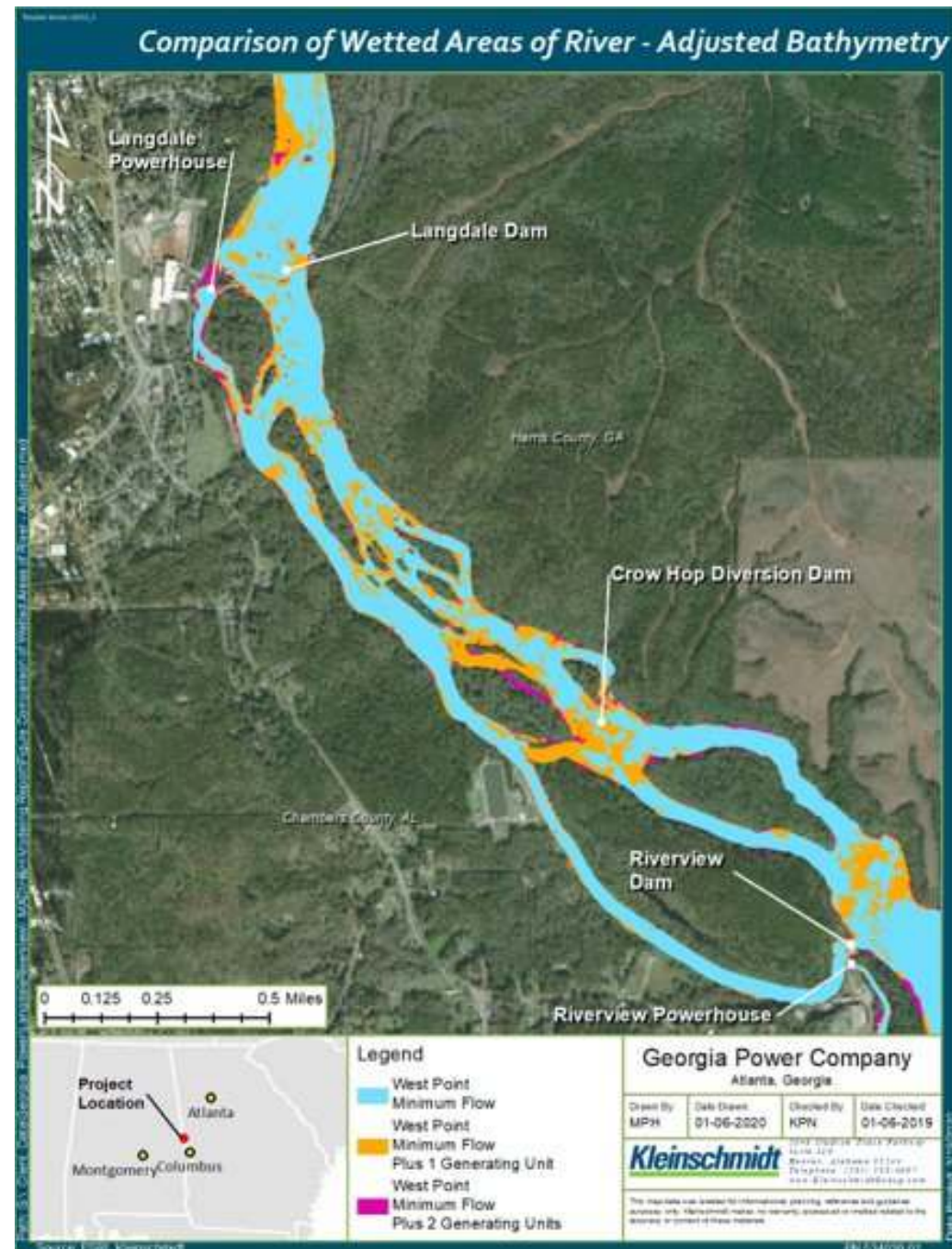
- Decommissioning Plan & Engineering Drawings
- Applicant Prepared Environmental Assessment

## Desktop Studies

- Water Quality
- Shoal Bass Life History



# H&H Modeling



# H&H Modeling



- East Alabama/Lower Valley WWTP discharge permit based on 7Q10 flow of 136 cfs
- H&H modeling indicates post-removal flow of 193 cfs under minimum flow discharge from West Point



# Mussel Study Results

## Mussel Survey: 31 individuals, 2 native and 1 exotic species

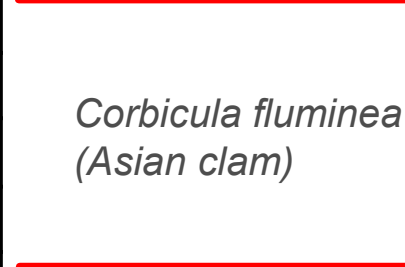


| Stream              | Scientific name                        | Common name      | Federally listed | State listed | # Collected 16-18 June 2020 |
|---------------------|--|------------------|------------------|--------------|-----------------------------|
| above Langdale Dam  | <i>Elliptio pullata</i>                | Gulf spike       | No               | No           | 3                           |
|                     | <i>Villosa vibex</i>                   | southern rainbow | No               | No           | 9                           |
|                     | <i>Corbicula fluminea</i> <sup>1</sup> | Asian clam       | No               | No           | TNTC*                       |
| below Langdale Dam  | <i>Corbicula fluminea</i>              | Asian clam       | No               | No           | TNTC                        |
| above Crow Hop Dam  | <i>Villosa vibex</i>                   | southern rainbow | No               | No           | 5                           |
|                     | <i>Corbicula fluminea</i>              | Asian clam       | No               | No           | TNTC                        |
| below Crow Hop Dam  | <i>Villosa vibex</i>                   | southern rainbow | No               | No           | 2                           |
|                     | <i>Corbicula fluminea</i>              | Asian clam       | No               | No           | TNTC                        |
| above Riverview Dam | <i>Elliptio pullata</i>                | Gulf spike       | No               | No           | 9                           |
|                     | <i>Villosa vibex</i>                   | southern rainbow | No               | No           | 3                           |
|                     | <i>Corbicula fluminea</i>              | Asian clam       | No               | No           | TNTC                        |
| below Riverview Dam | <i>Corbicula fluminea</i>              | Asian clam       | No               | No           | TNTC                        |

Notes: 1 = exotic invasive species; \* = Too numerous to count (TNTC)



*Villosa vibex*  
(southern rainbow)



*Corbicula fluminea*  
(Asian clam)



*Elliptio pullata*  
(Gulf spike)

- Impacts from dam removal are unlikely as no state or federally listed mussels were detected
- USFWS' experienced dam removal team to conduct the demolition and associated oversight

# Water Quality Desktop Study



## Water quality measurements

| Parameter                        | Units   | 0.5 Miles below West Point Dam | 3 Miles Below West Point Dam, 6.3 miles above Langdale | 1 Mile Below Riverview Powerhouse |
|----------------------------------|---------|--------------------------------|--|-----------------------------------|
| Monitoring Period                |         | Jan – Sep 2019                 | 2010 – 2012  | 2009 – 2010                       |
| Water Temperature                | (°C)    | 9.58 – 29.08                   | 8.16 – 28.14   | 7.94 – 29.68                      |
| Dissolved Oxygen                 | (mg/L)  | 3.74 – 10.33                   | 4.29 – 11.44   | 7.54 – 11.90                      |
| pH                               | (SU)    | 6.21 – 7.30                    | 6.33 – 6.82  | 6.61 – 7.70                       |
| Conductivity                     | (µs/cm) | 57 - 102                       | 76 – 139   | 58 – 129                          |
| Turbidity                        | (NTU)   | 2.7 – 12.0                     | 1.3 – 10.7   | 0 – 3000                          |
| NO <sub>2</sub> -NO <sub>3</sub> | (mg/L)  | 0.45 – 0.71                    | 0.43 – 1.31  | 0 – 1.12                          |
| NH <sub>3</sub>                  | (mg/L)  | 0 – 0.23                       | 0.04 – 0.27  | 0 – 0.4                           |
| TKN                              | (mg/L)  | 0.27 – 0.56                    | 0.20 – 0.49  | -                                 |
| Total Phosphorus                 | (mg/L)  | 0 – 0.04                       | 0 – 0.05   | 0.01 – 0.4                        |
| Sources:                         |         | GEPD 2019                      | GEPD 2019  | GPC 2011                          |



## Water quality measurements from mussel survey (July 2020)

| Parameter         | Units   | Langdale Dam<br>Avg | Crow Hop Dam<br>Avg | Riverview Dam Avg |
|-------------------|---------|---------------------|---------------------|-------------------|
| Monitoring Period |         | 16-Jun-20           | 17-Jun-20           | 18-Jun-20         |
| Temperature       | (°C)    | 23.5                | 23.1                | 23.1              |
| Dissolved Oxygen  | (mg/L)  | 5.4                 | 7.5                 | 7.9               |
| pH                | (SU)    | 5.4                 | 6.1                 | 5.9               |
| Conductivity      | (ms/cm) | 0.05                | 0.05                | 0.05              |
| Turbidity         | (NTU)   | 0                   | 0                   | 0                 |

Source: 2020 GPC Mussel Survey

# Sediment Sample Locations



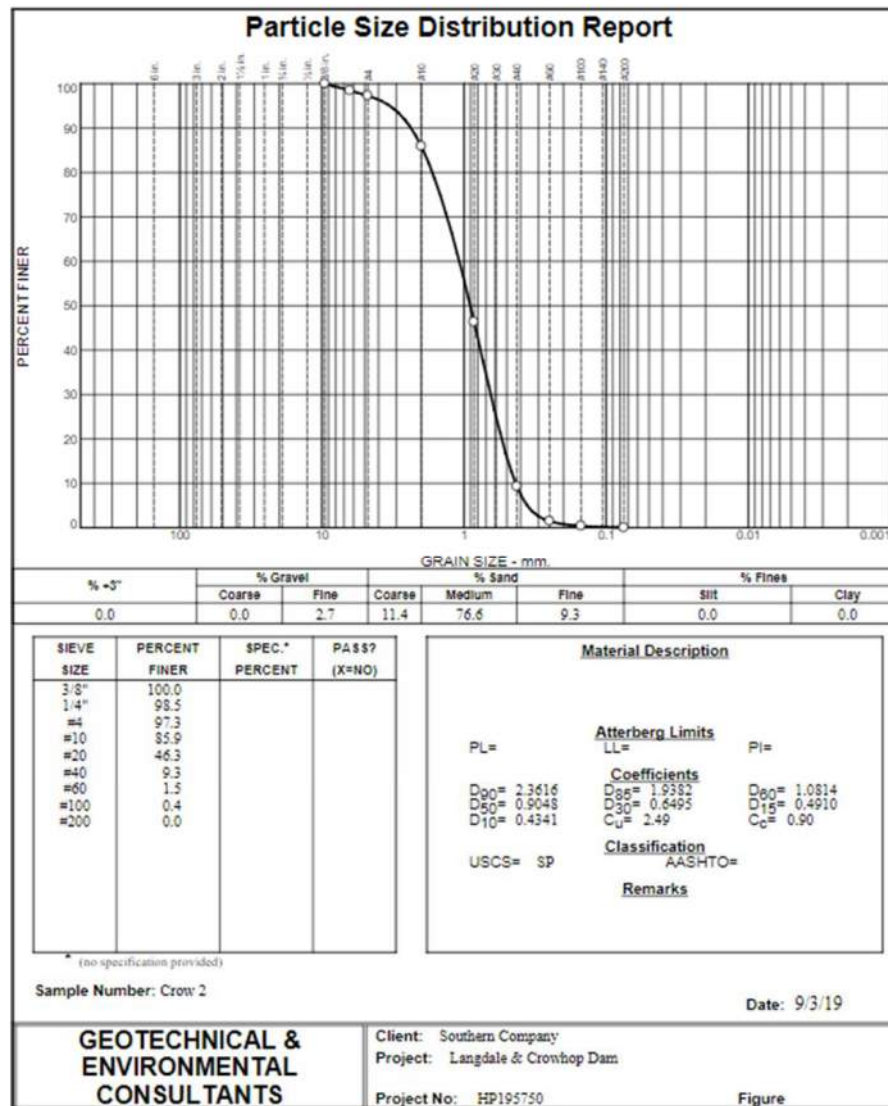
## Langdale Sediment Samples



## Crow Hop & Riverview Sediment Samples



# Sediment Borings



| Project: Southern Company Dams<br>Valley, AL   |             |  | Boring No: <b>CROW-3</b>       |  |    |    |    |    |    |         |
|--|-------------|--|--------------------------------|--|----|----|----|----|----|---------|
| Location: See Figure 2   |             |  | Project No: HP195750           |  |    |    |    |    |    |         |
| Driller/Equipment: Amdrill/ Vibrocore  |             |  | GS Elevation:                  |  |    |    |    |    |    |         |
| Water Level: ---   |             |  | Drilling Date: August 22, 2019 |  |    |    |    |    |    |         |
|  |             |  | Engineer/Geologist:            |  |    |    |    |    |    |         |
| Depth (ft)   | Soil Symbol | Soil Description   | Sample Type                    | Standard Penetration Test Data<br>(blows/ft) |    |    |    |    |    | N-Value |
|  |             | Water depth 2 feet.  |                                | 0  | 10 | 20 | 30 | 60 | 80 |         |
|  |             | <b>ALLUVIUM</b><br>tan-brown, silty, fine to coarse <b>SAND (SP)</b><br><br>Gradation sample taken (CROW 3)                                    |                                |  |    |    |    |    |    |         |
| 5  |             | <b>RESIDUUM</b><br>grey, silty <b>GRAVEL (GP)</b> ; with sand<br><br>Gradation sample taken (Crow 3, 4.5-8')<br>This is sample with hydrometer |                                |  |    |    |    |    |    |         |
|  |             | <b>AUGER REFUSAL ENCOUNTERED AT 8.0ft</b>  |                                |  |    |    |    |    |    |         |
| 10   |             |  |                                |  |    |    |    |    |    |         |
|  |             |  |                                |  |    |    |    |    |    |         |
|  |             |  |                                |  |    |    |    |    |    |         |
|  |             |  |                                |  |    |    |    |    |    |         |
|  |             |  |                                |  |    |    |    |    |    |         |
| 15   |             |  |                                |  |    |    |    |    |    |         |
| <ul style="list-style-type: none"><li>• Boring and sampling performed in accordance with ASTM D 1586.</li><li>• Depths are measured from existing ground surface at time of drilling.</li><li>• Depths are shown to illustrate general arrangements of the strata encountered at the boring location.</li><li>• Do not use depths for determinations of quantities or distances.</li></ul> |             |  | <b>NOTES:</b>                  |  |    |    |    |    |    |         |

# Sediment Quality



**Table 4-1 Analytical Results for Metals Analyzed in Sediment Samples Collected from the Langdale and Riverview Project during October 2021**

| Analyte                    | ESV  | Sampling Location |         |         |         |         |         |         |
|----------------------------|------|-------------------|---------|---------|---------|---------|---------|---------|
|                            |      | Q1                | Q2      | Q3      | Q4      | Q5      | Q6      | Q7      |
| Metals: dry-weight (mg/kg) |      |                   |         |         |         |         |         |         |
| Antimony                   | 2    | <0.18             | <0.2    | <0.2    | <1.2    | <0.18   | <0.2    | <0.19   |
| Arsenic                    | 9.8  | <0.25             | 0.3     | <0.27   | <1.6    | <0.24   | 0.295   | 0.285   |
| Cadmium                    | 1.0  | <0.0087           | 0.031   | <0.0095 | 0.5085  | <0.0087 | 0.0847  | 0.0796  |
| Chromium                   | 43.4 | 7.3               | 1.8     | 2.1     | 6.8     | 1.2     | 2.6     | 2.2     |
| Copper                     | 31.6 | 1.4               | 1.2     | 0.72    | 13      | 0.3975  | 0.98    | 0.94    |
| Lead                       | 35.8 | 1.3               | 1.4     | 1.3     | 15      | 0.99    | 1.6     | 1.7     |
| Mercury                    | 0.18 | <0.003            | <0.0032 | <0.0032 | <0.0039 | <0.003  | <0.0032 | <0.0031 |
| Nickel                     | 22.7 | 3.3               | 0.88    | 0.82    | 3.2     | 0.6275  | 1.4     | 1.2     |
| Selenium                   | 0.72 | <0.073            | <0.076  | <0.077  | <0.092  | <0.071  | <0.076  | <0.076  |
| Silver                     | 1.0  | <0.027            | <0.029  | <0.029  | <0.17   | 0.0885  | <0.029  | <0.028  |
| Zinc                       | 121  | 6.3               | 6.7     | 7.3     | 43      | 2.8     | 13      | 10      |

- 5 of 7 (Q1-3, 6, 7) sediment quality borings comprised primarily of sand and contaminants tend to not bind to larger sand and gravel
- All values less than Ecological Screening Value

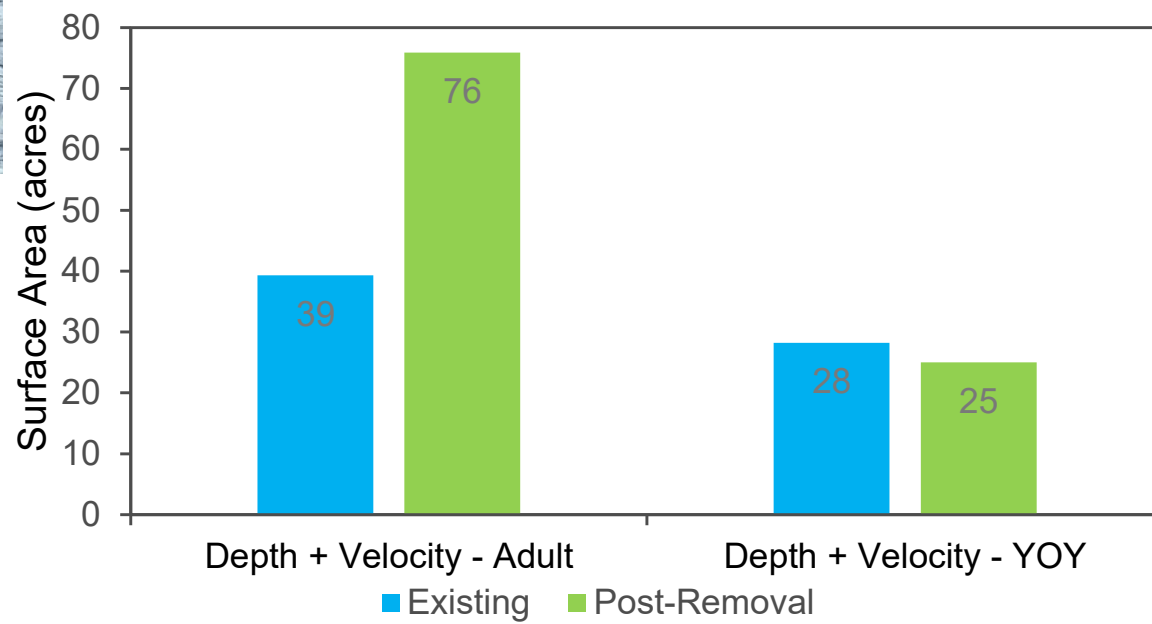
**Table 4-2 Analytical Results for PAHs, PCBs, and Pesticides in Sediment Samples Collected from the Langdale and Riverview Projects during October 2021**

| Analyte  | ESV    | Sampling Location |         |        |        |         |          |         |
|--|--------|-------------------|---------|--------|--------|---------|----------|---------|
|  |        | Q1                | Q2      | Q3     | Q4     | Q5      | Q6       | Q7      |
| PAHs, PCBs, and Pesticides: dry-weight (µg/kg) |        |                   |         |        |        |         |          |         |
| Total Low Molecular Weight PAHs (LMW-PAHs)     | 600    | 1.8               | <5.97   | <5.97  | 60.5   | 1.7     | <6       | 170.8   |
| Total High Molecular Weight PAHs (HMW-PAHs)    | 1,000  | 7.1               | <16.11  | <16.11 | 511    | 25.8    | <16.22   | 650     |
| Total PCB Aroclors                             | 59.8   | 0.26              | <1.008  | <1.007 | <1.182 | 0.54    | 0.22     | 0.18    |
| Chlordane                                      | 3.2    | <0.21             | <0.23   | <0.23  | <0.27  | <0.21   | <1.1     | <0.22   |
| 4,4' DDE                                       | 1.4    | <0.01             | <0.011  | <0.011 | <0.013 | <0.0099 | <0.054   | <0.01   |
| Dioxins/Furans                                 | 0.0025 | 0.00041           | 0.00012 | 0.0001 | 0.0023 | 0.00032 | 0.000097 | 0.00023 |

# Shoal Bass



Areas with Optimal Depth and Velocity



## Decommissioning Tasks



| Task  | Date of Completion                                    |
|---|---|
| File Surrender Application and Draft Outline for the Decommissioning Plan | December 2018   |
| Conduct Decommissioning Studies   | Winter 2019-May 2022                                  |
| File Final Decommissioning Plan, Draft & Final Studies, and EA            | September 2022  |
| Began Obtaining Corps permit  | Begin July 2022                                       |
| FERC Notices/Solicits Comments  | November 17, 2022 (30 days)                           |
| Implement FERC approved Dam Decommissioning Plan                          | Estimated Summer/Fall 2024<br>(License Exp. 12/31/23) |

# Management Practice Prioritization

*Courtney Cooper*





# Lunch



# Management Practice Prioritization

*Courtney Cooper*



# ACFS Drought Exercise Overview



# Water Quantity Committee Report

Presented by James Emery



# Water Quality Committee: January Meeting

January 30<sup>th</sup>

- Covered updates made to the Water Control Manual
- Discussed the Alternative Population Scenario model runs

Members Present

- Matt Windom, James Emery, Steve Davis, Patrick Bowie, Harry Lange



# Population Projections

| County                                     | 2020    | 2030    | 2040    | 2050    | 2060    |
|--|---------|---------|---------|---------|---------|
| <b>Harris</b>                              | 34,712  | 37,327  | 39,640  | 41,902  | 44,818  |
| <b>Harris<br/>alternate<br/>scenario</b>   | 34,668  | 39,873  | 44,141  | 49,233  | 54,907  |
| <b>Muscogee</b>                            | 191,626 | 179,704 | 166,681 | 153,247 | 141,670 |
| <b>Muscogee<br/>alternate<br/>scenario</b> | 206,922 | 225,912 | 233,750 | 238,600 | 247,548 |



# Alternate Population Scenario

## Water Withdrawal Projections

| County   | Facility                               | Scenario               | 2019<br>mgd | 2060<br>mgd |
|----------|--|------------------------|-------------|-------------|
| Harris   | Harris County Water Works              | Current Scenario       | 1.86        | 3.99        |
|          |  | Alternate Scenario     | 1.86        | 3.00        |
|          | Pine Mountain Valley Water Association | Current & Alt Scenario | 0.427       | 0.917       |
| Muscogee | Columbus Water Works                   | Current Scenario       | 33.24       | 23.22       |
|          |  | Alternate Scenario     | 33.24       | 37.7        |
|          | Fort Benning                           | Current & Alt Scenario | 1.55        | 1.07        |



# Alternate Population Scenario

## *Wastewater Discharge Projections*

| County   | Facility             | Scenario           | 2019<br><i>mgd</i> | 2060<br><i>mgd</i> |
|----------|----------------------|--------------------|--------------------|--------------------|
| Muscogee | Columbus Water Works | Current Scenario   | 37.64              | 27.83              |
|          |                      | Alternate Scenario | 37.64              | 45.1               |



# Columbus Flow Summary

| Scenario                            |            | Future 2060M&I | Future 2060M&I Alternative |
|-------------------------------------|------------|----------------|----------------------------|
| Daily flow $\geq$ 1,350 cfs         | Days       | <b>26940</b>   | <b>26890</b>               |
|                                     | Percentage | <b>92.197%</b> | <b>92.026%</b>             |
| 7-day average flow $\geq$ 1,350 cfs | Days       | <b>29210</b>   | <b>29209</b>               |
|                                     | Percentage | <b>99.986%</b> | <b>99.983%</b>             |
| 7-day average flow $\geq$ 1,850 cfs | Days       | <b>28528</b>   | <b>28480</b>               |
|                                     | Percentage | <b>97.652%</b> | <b>97.488%</b>             |



## Page 3-5:

**3.Navigation** is one of the Congressionally authorized purposes of the federal reservoir projects on the Chattahoochee River. The head of navigation begins at Columbus and extends south to Apalachicola Bay. Maintaining this navigational channel is the responsibility of the U.S. Army Corps of Engineers and flow control is provided by upstream reservoirs. [The U.S. Army Corps of Engineer's \(USACE\) Water Control Manual \(WCM\) for Apalachicola-Chattahoochee-Flint operations notes when hydrologic conditions are met, the USACE will provide a navigation season between January and May, dependent on actual and projected system-wide conditions in the ACF Basin.](#)

At this time, navigation of the river is hindered by an [inability to maintain-the](#) locks and dams [due to lack of funding.](#)



## Section 6: Recommendation to the State 11

*Added based on Council discussion in December*

### **11. Maintain Navigation between Columbus and Apalachicola Bay**

Navigation is currently hindered on the Chattahoochee River from Columbus to Apalachicola Bay by a lack of maintenance of the locks and dams. The U.S. Army Corps of Engineers are responsible for maintaining this navigational channel and have reported to State the amount of funding needed to undertake the maintenance repair needs (see Navigation in Section 3.2). The Council recommends that the State provides the necessary funding in order to return the facilities to service in support of navigation, to ensure the recreational and the economic sustainability of the region.



# Section 3 Review

- Discussions of Water Control Manual language, which was updated and consolidated in Section 3
- EPD reviewed and suggested some edits
- Committee reviewed – pages 3-16 to 3-23



# Highlights of Edits in Section 3, pp. 3-16 to 23

- Updated impacts to recreation based on Final Environmental Impact Statement (p. 3-17)
- Added information on economic value of recreation for West Point Lake (p. 3-17)
- Referred discussion of Fish and Wildlife Impacts and Water Quality Impacts to Water Quality Committee (pp. 3-18 to 3-21)
- Added information on impacts to rare species and hydropower generation on pages 3-19 and 3-20
- Reviewed and updated Council's goals for an improve operating plan for the ACF (p. 3-23)



## Flood Control Impacts p. 3-21

## Reservoir Operations and River Flow Impacts p. 3-22

### Added discussion of real-time and probability-based forecasts:

The State requested that the USACE incorporate into the WCM the use of real-time and probability-based forecasts to support flexible storage management practices for West Point Lake. The Council supports this approach that it believes can support better economic benefits for the region while also providing for flood risk management

### Related change in Management Practice IU-2 (Section 6):

A GAEPD study demonstrated the use of probability-based forecasts to reduce peak releases without compromising flood mitigation operations. Cooperative efforts between the state and the U.S. Army Corps of Engineers should be funded and implemented to fully evaluate and support adoption of the proposed rule curve modifications.



# Discussion of Outstanding Planning Questions



# Outstanding Items

- Wastewater Discharge Challenges
  - Text explaining a challenge is not considered substantial unless the percentage of time that the instream flow fell below the 7Q10 value is greater than 10% (Page 3-11 and 5-3)
- Table 6.1 Management Practices format changes
  - Includes details addressing responsible parties and implementation timeframes (short-term & long-term actions)
- Recommendation to the State #3 – Has revisions to match committee's discussion and their comment letter submitted this past year to Metro District



# Inter-Council Coordination

## Coordinated Recommendations with Neighboring Councils

- JT-3: Recommend proactive engagement among Georgia, Alabama, and Florida to collaborate on opportunities to improve planning for shared water resources in the ACF Basin.
  - Pending review by LFO in March
  - Approved by MC & UF



# Inter-Council Coordination

## Coordinated Recommendations with Neighboring Councils

### ➤ *Previously deleted Recommendation addressing interstate coordination:*

Consider the creation of a new coordinated, interstate planning organization for the ACF System. Membership in this organization to represent Georgia shall include, but not be limited to, members of the regional water planning councils with water planning regions that include parts of the ACF. Consider the recommendation of the ACF Stakeholders in its Sustainable Water Management Plan regarding an ACF transboundary water management institution as this organization is developed



# Public Comment



# Regional Water Plan Draft Update Approval





# Next Steps in Plan Review and Revision

*Meagan Szydzik*



# Next Steps

- Next Meeting: June 9<sup>th</sup>, 2023
  - Final Meeting for this Planning cycle (field trip?)
  - Incorporate comments from Council input and public review
  - Council approval of the Regional Water Plan for submission to EPD Director

