FINAL
POTENTIAL EFFECTS OF DAM REMOVAL ON SHOAL BASS

LANGDALE PROJECT (FERC NO. 2341)
AND
RIVERVIEW PROJECT (FERC NO. 2350)

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

ACF	Apalachicola-Chattahoochee-Flint
ADCNR	Alabama Department of Conservation and Natural Resources
AIR	additional information request
AL	State of Alabama
C.F.R.	Code of Federal Regulations
cfs	cubic feet per second
FERC	Federal Energy Regulatory Commission
FL	State of Florida
fps	feet per second
FPS	Final Study Plan
GA	State of Georgia
GDNR	Georgia Department of Natural Resources
Georgia Power	Georgia Power Company
GPS	Global Positioning System
HEC-RAS	Hydrologic Engineering Center River Analysis System
kW	kilowatt
PSP	Proposed Study Plan or Study Plan
RM	river mile
USACE	U.S. Army Corps of Engineers
YOY	young-of-year

1.0 PROJECT OVERVIEW

Georgia Power Company (Georgia Power) is filing with the Federal Energy Regulatory Commission (FERC) this report in support of Georgia Power's applications for license surrender and decommissioning of the Langdale Project (FERC No. 2341) and the Riverview Project (FERC No. 2350) (the Projects).

1.1 Langdale Project

The Langdale Project is located on the Chattahoochee River, adjacent to the City of Valley, Alabama and in Harris County, Georgia at river mile (RM) 191.9. The Langdale Project is located approximately 9.5 river miles downstream of the U.S. Army Corps of Engineers (USACE) West Point Dam (RM 201.4), which began operation in 1976 and regulates the flow through the Middle Chattahoochee River region (Figure 1-1).

The Langdale Project was constructed between 1904 and 1908 and purchased by Georgia Power from West Point Manufacturing Company in 1930. The Project operated as a run of river hydroelectric plant. Over time, the four horizontal generating units developed maintenance problems, and eventually were no longer operable. Generation records suggest that Georgia Power stopped operating the horizontal units in approximately 1954. The horizontal units were officially retired in 1960, leaving only the two 520 kilowatt (kW) vertical units operating at the Langdale Project; these two units remain in place in the powerhouse but have not operated since 2009.

1.2 Riverview Project

The Riverview Project is located approximately at river mile (RM) 191.0 (Crow Hop Diversion Dam) and RM 190.6 (Riverview Dam) on the Chattahoochee River, downstream of the City of Valley, Alabama and in Harris County, Georgia. The Project is located approximately 10.5 RM downstream of the USACE West Point Project and 0.9 RM downstream of the Langdale Project.

The Riverview Project consists of two separate dams, Riverview Dam and Crow Hop Diversion Dam (Crow Hop Dam), and a powerhouse with generating equipment located on the western abutment of Riverview Dam. The Project operated as a run of river hydroelectric plant. Crow Hop Dam is the upstream dam and is situated across the main river, diverting flow into a headrace channel between an island and the western bank. The headrace channel is approximately 1-mile-long. Riverview Dam and the powerhouse are

located at the lower end of this headrace channel (Figure 1-2). The Project was constructed in several phases. The smaller downstream dam was constructed in 1906 for West Point Manufacturing Company. Originally, the dam diverted water into the adjacent mill building to provide power for mill operation. The existing powerhouse was built in 1918 and houses two 240 kW generating units. Crow Hop Dam was constructed in 1920. Georgia Power purchased the Riverview Project from West Point Manufacturing Company in 1930 and began operating the two generating units. Over time, the units developed maintenance problems, and eventually were no longer operable. Georgia Power stopped operating the units in 2009.

Georgia Power filed applications to surrender the FERC licenses for the Projects on December 18, 2018, in accordance with FERC's regulations at 18 C.F.R. § 6.1 and 6.2. The Projects' licenses expire on December 31, 2023.

On April 11, 2019, FERC issued a request for additional information (AIR) regarding Georgia Power's applications. Georgia Power prepared and filed a Proposed Study Plan (PSP) on May 24, 2019. Based on comments on the PSP, the PSP was revised and filed as the Final Study Plan (FSP) on July 24, 2019 and filed draft study reports on September 21, 2020. On October 5, 2020 Georgia Power held a Public Meeting to present the results to stakeholders. The meeting consisted of an afternoon and evening session held virtually due to concerns with Coronavirus Disease 2019 (Covid-19). Georgia Power requested that stakeholders submit comments on all draft study reports no later than October 24, 2020. Georgia Power received seven comment letters on the draft study reports (Appendix A).

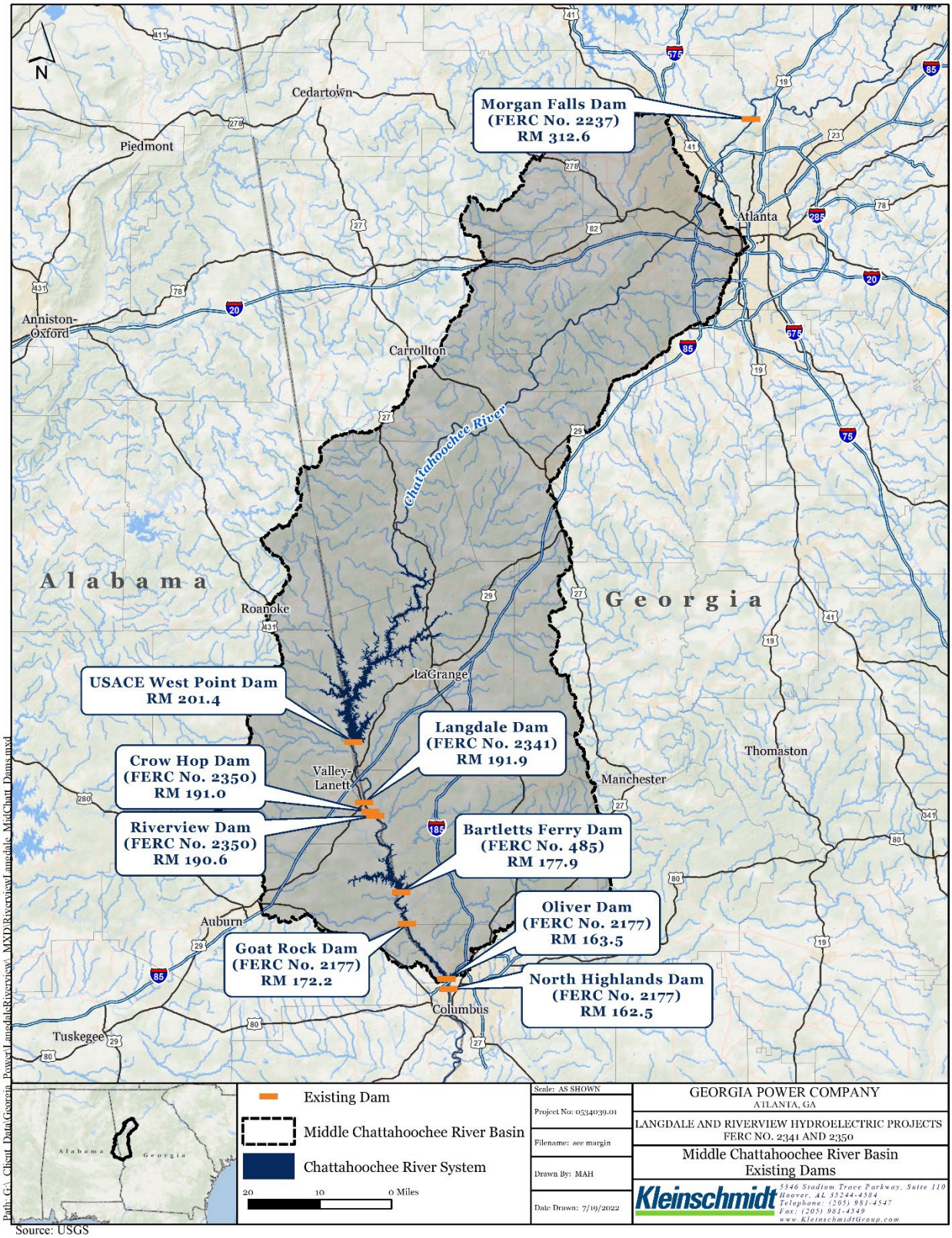

FIGURE 1-1 MIDDLE CHATTAHOOCHEE RIVER BASIN EXISTING DAMS

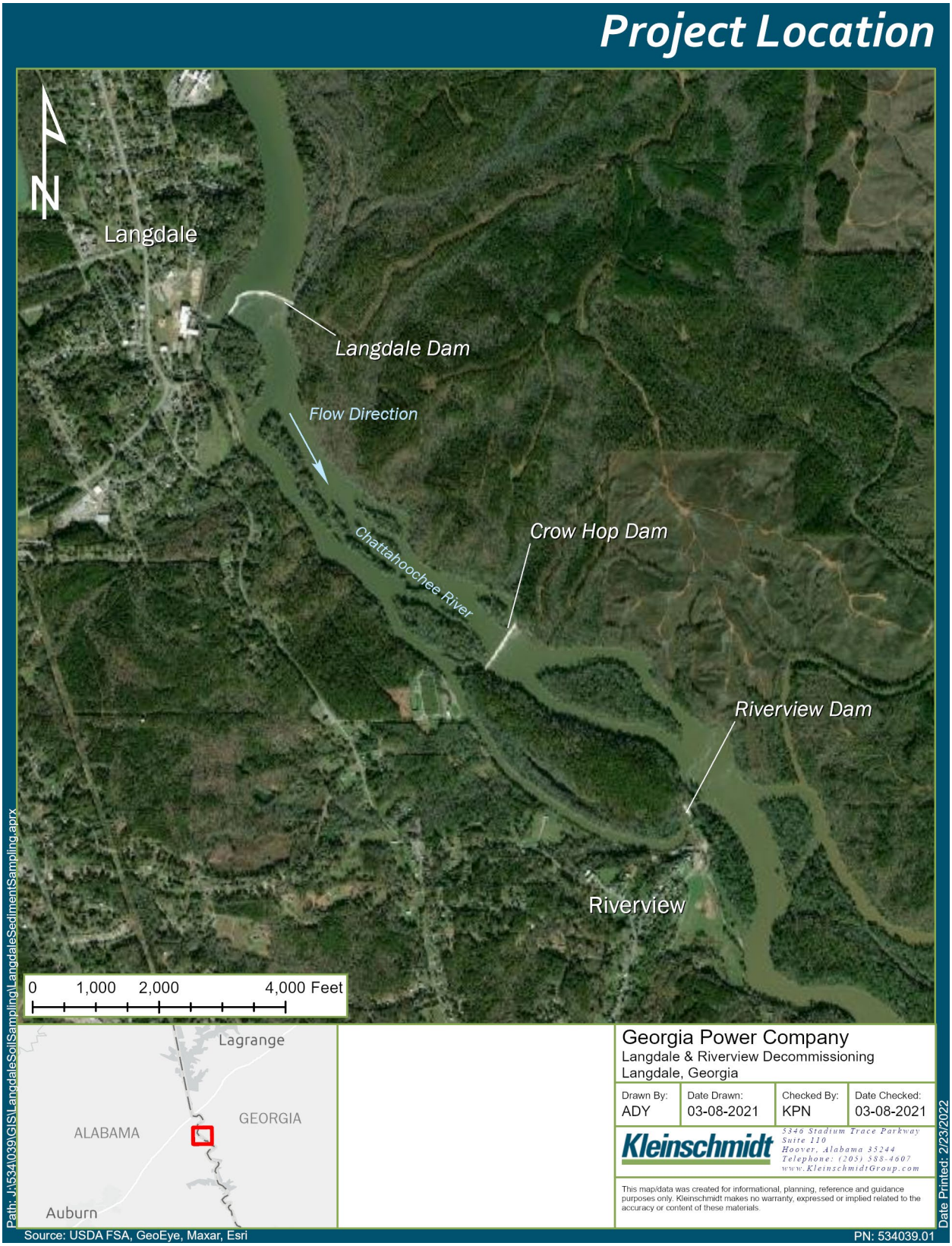

FIGURE 1-2 LANGDALE AND RIVERVIEW PROJECT LOCATIONS

2.0 EFFECTS OF DAM REMOVAL ON SHOAL BASS

2.1 Introduction

Shoal Bass are recognized as a high priority, rare species by both Alabama Department of Conservation and Natural Resources (ADCNR) and the Georgia Department of Natural Resources (GDNR) in their State Wildlife Action Plans due to multiple factors including limited range and habitat fragmentation by dams. As such, the protection or enhancement of Shoal Bass populations through actions that increase their range and habitat connectivity are of particular interest to resource managers.

Shoal Bass (*Micropterus cataractae*) is also a popular species for Chattahoochee River anglers in the vicinity of the Projects. Several stakeholders in the FERC surrender proceedings have commented that removing the Projects would be detrimental to the Shoal Bass population in this reach of the Chattahoochee River.

2.2 Goals and Objectives

The goal of this study is to provide a literature review of Shoal Bass and describe the potential effects of dam removal on Shoal Bass and their aquatic habitats in the study area.

2.3 Study Area

The study area includes the Chattahoochee River from West Point Dam downstream through the Langdale and Riverview Projects to the headwaters of Lake Harding (Bartletts Ferry Hydroelectric Project (FERC No. 485) reservoir).

2.4 Methodology

Literature consulted for this review consisted of peer-reviewed published journals. The studies referenced pertain to the biology and life history of Shoal Bass, the general effects of dam removal on fish species (occurring locally and non-locally), and the possible effects of dam removal on Shoal Bass. Georgia Power also considered the stakeholder comments filed in the FERC surrender proceedings for the Projects in developing this report. Additionally, Georgia Power prepared a brief entitled "Expected Outcomes of Barrier Removal on Shoal Bass *Micropterus cataractae* Within their Native Range," which is included in Appendix B of this report.

2.5 Shoal Bass Life History

SHOAL BASS (GEORGIAWILDLIFE.COM)

The Shoal Bass is a riverine, freshwater fish species endemic to the Apalachicola-Chattahoochee-Flint (ACF) river basin in Georgia, Alabama, and Florida (Williams and Burgess 1999). This species is typically found in mainstem rivers and their larger tributaries (Ramsey 1975). Across their entire range, Shoal Bass typically begin spawning in early April through mid or late June (Wright 1967; Hurst et al. 1975). They spawn in refuges from high water velocities such as boulders, rocks, or vegetation in the lower ends of pools and their eggs adhere to rocks and pebbles (Boschung and Mayden 2004; Johnston and Kennon 2007; Bitz et al. 2015). Johnston and Kennon (2007) observed two different size classes in Little Uchee Creek (AL) in June, suggesting that there may be more than one spawning bout, although it is unclear if the same individual fish can spawn more than once per season. Larval Shoal Bass hatch in water temperatures of 15 °C to 22 °C (Sammons et al. 2015) and inhabit deep areas with no water velocity (Johnston and Kennon 2007). Juveniles tend to inhabit more shallow areas of low velocity (Johnston and Kennon 2007) and higher-than-average percentages of rocky substrate in both shoals and pools (Wheeler and Allen 2003) and feed on insects such as mayflies, odonates and hellgrammites (Wheeler and Allen 2003; Sammons et al. 2015).

As adults, Shoal Bass have been found to inhabit rocky areas of moderate to high velocity and feed on fish and crayfish (Boschung and Mayden 2004; Goclowski et al. 2013; Wheeler and Allen 2003). Shoal Bass typically grow more rapidly after their second year and reach sexual maturity at 3 years. The mean sizes for fish ages 1 to 7 from the Chipola (FL) and Flint (GA) rivers and Halawakee Creek (AL) were 82, 179, 261, 326, 375, 424, and 468 mm, respectively. The life expectancy for Shoal Bass is approximately 8 years (Boschung and Mayden 2004; Parsons and Crittenden 1959).

2.6 General Effects of Dam Removal

Dams can alter the flow, water temperature, water chemistry, nutrient transport, community structure, and fish movement in rivers (Kerr et al. 2010); therefore, potentially affecting aquatic species in a variety of ways. Dams may affect fish in particular by altering habitat and limiting mobility. The goal of dam removal is often to restore historic habitat and allow fish passage, which may increase fish diversity by allowing fish to migrate

(Burroughs et al. 2010; Cooper et al. 2017). In some species, migration between freshwater and marine habitat is necessary for spawning. Anadromous fish species spawn in freshwater habitats and migrate to marine habitats to grow and mature, while catadromous species spawn in marine habitats and migrate to freshwater to grow and mature. Potamodromous species migrate solely within freshwater systems to forage, breed, or seek refuge. Examples of potamodromous fish in the southeastern U.S.A. include Shoal Bass, Lake Sturgeon, and Flathead Catfish.

In some cases, reducing barriers to fish passage can be complex and may have unexpected results on fish species. For example, increasing fish passage on the Connecticut River (1975-1981) allowed American Shad to migrate more than 100 stream miles into historic upper watershed habitat and disperse throughout the upper reaches (Leggett et al. 2004). However, fish passage construction did not affect the shad population, presumably because the small population of adults may have been too dispersed during spawning season, and the reduction of barriers caused an increased migration distance and therefore increased bioenergetic cost of spawning, causing mortality (Leggett et al. 2004). The authors attributed the delayed restoration of the shad population to migration barriers being removed too rapidly for such a large watershed and small remnant population (Leggett et al. 2004).

Macroinvertebrate species may also be impacted by dams and benefit from their removal. For example, sessile species of mussels require host fish to disperse their larvae. Habitat connectivity and the unimpeded ability of fish to migrate throughout river systems is therefore an important factor influencing the distribution and abundance of mussels (Watters 1996). The removal of a barrier can have a variety of effects. In one case, community density, generic richness, and Shannon-Wiener diversity initially decreased for several months after the removal of a dam before consistently increasing thereafter, depending on location of the reach (Mažeika et al. 2017). Another study found no influence of a barrier on assemblage composition and structure, likely due to dispersal mechanisms not being entirely dependent on water (Milesi and Melo 2017).

2.7 Potential Effects on Shoal Bass

In the state of Georgia, Shoal Bass are considered to be a High Priority Species and a Species of Concern (Georgia Department of Natural Resources 2015). The factors that threaten Shoal Bass populations include habitat fragmentation (Dakin et al. 2015; Sammons and Early 2015; Taylor et al. 2018a), hybridization with other *Micropterus* species (Dakin et al. 2015; Taylor et al. 2018b), and forms of habitat degradation such as

sedimentation (Walser and Bart 1999), temperature alteration (Porta 2011), and flow manipulation (Stormer and Maceina 2009). In response to the proposed surrender of the Langdale and Riverview Projects, some stakeholders have commented that removing the dams would result in: 1) Shoal Bass migrating out of the area; 2) Striped Bass moving upstream and reducing the Shoal Bass population; and 3) decreased suitable habitat for Shoal Bass.

Although it is likely that Shoal Bass would migrate after dam removal, migration can be a natural part of the Shoal Bass life cycle. Prior to the construction of dams, Shoal Bass were able to move freely within the free-flowing ACF basin. In the unregulated portion of the Flint River, Shoal Bass have been recorded migrating as far as 197 km to spawn (Sammons 2015), but spawning migrations are often impeded or shortened in sections with dams or reservoirs (Stormer and Maceina 2009; Sammons and Early 2015; Cottrell 2018). Restoring connectivity within the river system may also reduce inbreeding and random genetic drift, which can lower the fitness of individuals in segments of stream with little effective reach (Dakin et al. 2015; Taylor et al. 2018c).

The other threat to Shoal Bass populations is habitat degradation. Dams and other habitat-altering barriers may pose a threat to Shoal Bass because they are habitat specialists and are more selective in their habitat than other species, such as Spotted Bass (Goclowski et al. 2013; Williams and Burgess 1999). Shoal Bass require different types of habitat at different life stages: deep areas with no velocity as larvae (Johnston and Kennon 2007), more shallow and rocky areas of low velocity as juveniles to avoid predation (Johnston and Kennon 2007), and rocky areas of moderate to high velocity as adults (Boschung and Mayden 2004; Goclowski et al. 2013; Wheeler and Allen 2003). Alterations to these habitats could affect the life cycle of this species. Furthermore, Shoal Bass avoid lentic habitats such as reservoirs and backwaters. Sammons and Early (2015) reported that Shoal Bass from Flat Shoals Creek entered the Chattahoochee River mainstem and settled just below Crowhop Dam rather than moving into Bartlett's Ferry reservoir (Lake Harding) downstream.

Removing the Langdale and Riverview Dams has the potential to restore aquatic habitats to a free-flowing condition and have a long-term positive effect on Shoal Bass. Dam removal will allow better migration of Shoal Bass to spawning habitats and reduce inbreeding. It may also reduce the homogeneity of habitat and restore the variety of habitats used by Shoal Bass during different life stages. Shoal Bass inhabiting this currently fragmented section of the Chattahoochee River would have unimpeded access to

tributaries in the reach, including Flat Shoals Creek, which has an abundant population and a fairly large spawning shoal.

In order to compare the effects of removing the dams on physical habitat, habitat suitability criteria from an instream flow study conducted on the Ocmulgee River (GA) was examined. In that study, optimal habitat conditions for adult and young-of-year (YOY) Shoal Bass were determined. For adult Shoal Bass, optimal depths ranged from 3.08 to 4.62 feet and optimal water velocities ranged from 0.51 to 0.77 feet per second (fps). For YOY Shoal Bass, optimal depths ranged from 1.09 to 1.45 feet, and optimal velocities ranged from 0 to 0.14 fps.

Results from the Hydrologic Engineering Center - River Analysis System (HEC-RAS) modeling (Kleinschmidt 2020) were used to analyze the effects of dam removal on the amount of optimal habitat available for adult and YOY Shoal Bass in the study area. Existing and post-removal water depths and velocities under base flow conditions (minimum flow of 675 cubic feet per second (cfs) out of West Point) were output from the HEC-RAS model and analyzed using GIS to determine the total area meeting the optimal criteria for each scenario.

Based on this analysis, the amount of habitat with optimal depth and velocity conditions for adult Shoal Bass are predicted to increase after dam removal. The amount of habitat with optimal depth conditions for YOY is predicted to increase, although amount of habitat with optimal velocity conditions for YOY is predicted to decrease after dam removal (Figure 2-1). However, the amount of ideal habitat to be gained from dam removal exceeds the amount lost, suggesting Shoal Bass could benefit from the habitat changes caused by dam removal, in addition to the benefits afforded by increased habitat connectivity.

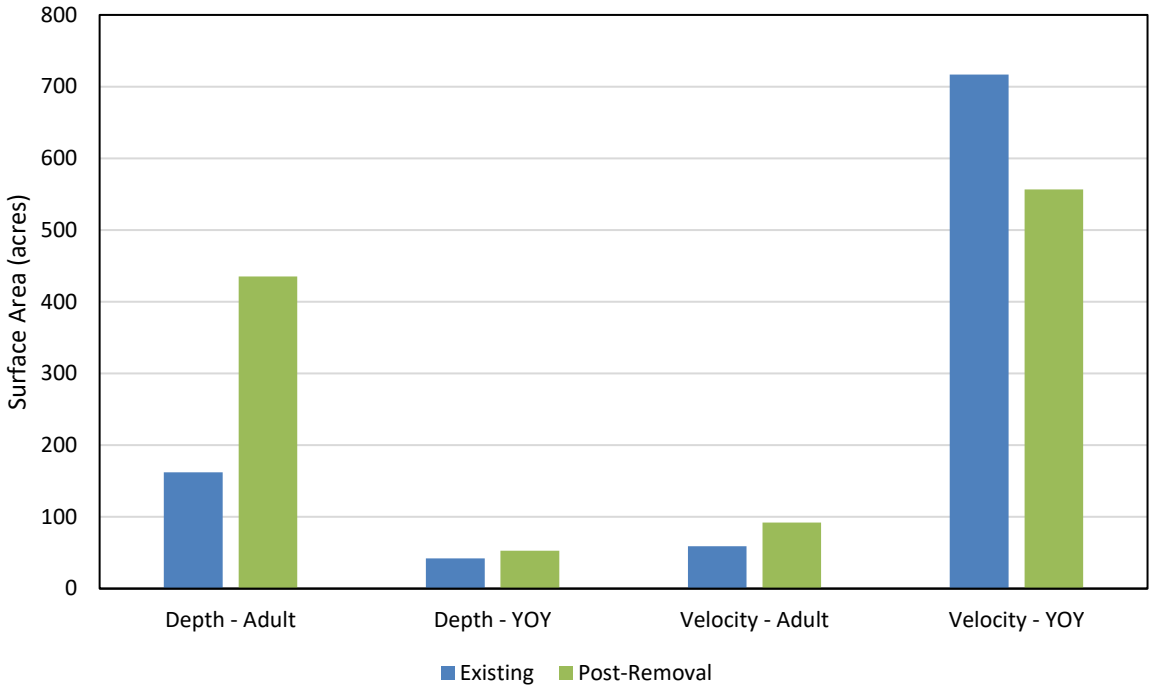

FIGURE 2-1 EXISTING AND POST-REMOVAL AMOUNT OF OPTIMAL HABITAT FOR SHOAL BASS

3.0 CONCLUSIONS

Based on the results of this literature review and analysis of changes to physical habitat predicted by the hydraulic model, the following conclusions are evident:

- Adult Shoal Bass prefer lotic (flowing water) environments with rocky bottoms and moderate to swift currents, and do not prefer impoundments;
- Removal of the Projects' dams will restore aquatic habitats to a free-flowing condition, provide greater connectivity among habitat types, and increase genetic diversity of Shoal Bass and other riverine species inhabiting the reach; and
- Removal of the Projects' dams will result in a net increase in suitable habitat for Shoal Bass.

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APPENDIX A

DOCUMENTATION OF CONSULTATION

Langdale and Riverview Projects - Public Comment Matrix	
Comment by Lanny Bledsoe (Landowner) Accession No. 20201104-0020	**Georgia Power's Response**
I have a personal interest in this matter as I am the largest landowner directly affected by the destruction of the three dams at Langdale, Crow Hop, and River View. I own all of the islands in the river between Langdale and River View and they will be adversely affected if the dams are gone, as will all the shoreline. •The destruction will be caused by the overwhelming flood of water turned loose each day when West Point dam generates. The water in the Langdale/River View area rises several feet quickly with great force and through the years we have seen the effect it has, even with the dams in place. It is my opinion that the dams now act as a protecting buffer and keep the water hitting the islands with full force. However, two islands have already been washed away and are gone. •Some years back, the water force had washed to bank away in the bend above the River View dam and a portion of Riverdale Mill was in danger of falling into the river. I was manager of the mill at that time and a meeting was held with Corp of Engineers to review the situation. Alabama Sector Howard Heflin was in the meeting and after reviewing the evidence, Senator Heflin directed the Corp to line the bank with riprap to protect it. According to tests Georgia Power has done, they are concerned about this same area with the dams down and plan to protect it. •Based on the latest Georgia Power studies just released, at minimum flow level, when West Point is not generating, only canoes and kayaks can travel on the river. These dams have been in place for a hundred years, the ponds behind the dams is a great place to boat, fish, and have recreation. The city of Valley should be greatly concerned about this, they're going to lose an asset. •I've heard a lot of talk about concern for Shoal Bass as a reason to take the dams down. The state of Georgia showed little concern for any fish when they put striped bass in the river. Years ago, we could catch crappie and shad by the thousands at River View dam. Not they are gone, wiped out by the striped bass. Striped bass are not a problem above the dams now, but they will be with the dams gone. •The River View powerhouse was built across an arm of the river. One side of the building was on the Alabama bank and the other side on Hodge Island. The tail race from the powerhouse flowed as it had before the powerhouse was built. Georgia Power's plans are to take the powerhouse down and block the flow of the river. Hodge Island, which I own, will not be an island but will be joined by land to the Alabama side. This will change the original flow of the river and they should not have the power to do this. They used the powerhouse for a hundred years and now want to block the river. •I grew up in River View 84 years ago. The river has been a wonderful place for everyone to enjoy. It has been an asset here for all of my life. Now it will change. Georgia Power used these dams all these years for their business and the generation of electricity. They no longer have any use for the dam, and their plan would change what has been in place, for all of these years. This should not happen.	Georgia Power will evaluate potential erosion on the privately owned islands as part of removal process and post removal monitoring and would, if needed, propose to provide some protection potentially using rock from the dam removal. The Decommissioning Plan (Section 4) specifically addresses bank stabilization in the Riverview headrace channel. The Applicant Prepared Environmental Assessment describes the change in river navigability of various vessels in Section 11. To address public access to the river, Georgia Power is proposing to extend three existing public boat ramps into the river to at least two feet of water depth at the new water surface elevation (measured at West Point minimum flow) following dam removal and river stabilization (see Section 11 of the APEA). Additionally, as discussed in the Recreation Section 11, there are nearby access points at Lake Harding and West Point that provide powered boat recreational access. Regarding effects on Shoal Bass, Georgia Power implemented a Pre-Removal Shoal Bass Abundance and Tracking Study to provide baseline information on Shoal Bass. In addition, Georgia Power is proposing to implement a Post Removal Shoal Bass Abundance and Tracking Study to assess effects of the removal on Shoal Bass in the Project area. Section 8 of the APEA discusses effects of dam removal on Shoal Bass and other aquatic organisms. Georgia Power performed studies to address effects of the decommissioning including: river hydraulics and hydrology (H&H) and potential impacts to aquatic organisms (including shoal bass). Study reports applicable to these comments include: • Final H&H Report • Final Water Quality Report •Draft Sediment Quality Study Report •Draft Sediment Transport Study Report •Final Potential Effects on Dam Removal on Shoal Bass •Pre-Dam Removal Shoal Bass Abundance and Tracking Study Report •Freshwater Mussel Survey Report
Comment by GADNR - WRD Accession No. 20201104-5105	**Georgia Power's Response**
GA Power has completed a series of studies addressing potential changes to existing resources associated with the dam removals. These studies included modeling changes to river hydraulics and hydrology, sediment characterization, and potential impacts to aquatic wildlife, water quality, and cultural resources. Comprehensive modeling of flow distribution and velocity, shoal habitat, and potential impacts to aquatic resources such as the endemic Shoal Bass and native mussel community was also presented. •Wildlife Resources Division finds the studies to be adequate, and we support Georgia Power's indication that sediment distribution will be further investigated during the decommissioning process in consultation with FERC and US Fish and Wildlife Service National Fish Passage Program.	Thank you for your comment and continued consultation.

Langdale and Riverview Projects - Public Comment Matrix	
•We request that WRD be informed of related findings. •Georgia Power maintains ongoing consultation with WRD regarding the decommission and removal of these hydropower projects, and we support the proposed actions and associated studies. The removal of these projects is expected to restore connectivity and riverine characteristics in this reach of the Chattahoochee River, which is expected to benefit fish, wildlife, and aquatic resources. The WRD will remain engaged in the decommissioning process.	
Comment by Valley City Council District 5 (Kendall Andrews) Accession No. 20201105-5000	**Georgia Power's Response**
I have made previous comments opposing the removal of the Langdale, Riverview, and Crow Hop dams. These dams provide the City of Valley and its citizens with an invaluable natural resource. I have many concerns about their removal that I will list below: •The H&H model presented by Georgia Power predicts that both boat ramps located in the City of Valley will be dewatered post removal. Even if the boat ramps are extended, the amount navigable water with a powerboat will be so little that they will be useless. The City of Valley has a large number of older citizens that use the river on a daily basis with powerboats. Many of these people will not be able to drag a canoe or paddle a kayak through the shoals that will be present. Also, many people with disabilities will face the same barriers. Their access to the river will be gone •The restoration of suitable shoal bass habitat has been mentioned as a possible benefit to the removal of the dams. I disagree with this. The only example of dam removal where shoal bass were present in the surrounding waters was in Columbus, GA with the removal of the City Mills and Eagle Phenix dams. Removal of these dams had an extremely negative effect on the shoal bass in this area. There has been no research done on the shoal bass population located in the reservoir below Langdale Dam. It is common knowledge that this is where the best population of shoal bass exists in this area. I believe that there should be some data obtained from this area, if for nothing else, to create a baseline for comparison post removal of the dams. •The virtual format of the public meeting made participation very difficult for much of the community. The list of attendees submitted shows that there were few participants that were not associated with an agency or group. This is one of the only chances for members of the community to have their questions answered and to voice their opinions. The removal of these dams has the potential to devastate the local community. The public meeting should not be rushed to meet a deadline. •I would like to respectively request that the Federal Energy Regulatory Commission require Georgia Power to hold an in-person public meeting once the nation pandemic ends. This will give everyone the opportunity to participate before any decisions are finalized.	The Applicant Prepared Environmental Assessment describes the change in river navigability of various vessels in Section 11. To address public access to the river, Georgia Power is proposing to extend three existing public boat ramps into the river to at least two feet of water depth at the new water surface elevation (measured at West Point minimum flow) following dam removal and river stabilization (see Section 11 of the APEA). Additionally, as discussed in the Recreation Section 11, there are nearby access points at Lake Harding and West Point that provide powered boat recreational access. Regarding effects on Shoal Bass, Georgia Power implemented a Pre-Removal Shoal Bass Abundance and Tracking Study to provide baseline information on Shoal Bass. In addition, Georgia Power is proposing to implement a Post Removal Shoal Bass Abundance and Tracking Study to assess effects of the removal on Shoal Bass in the Project area. Section 8 of the APEA discusses effects of dam removal on Shoal Bass and other aquatic organisms.
Comment by Chattahoochee Riverkeeper (Chris Manganiello) Accession No. 20201105-5077	**Georgia Power's Response**
… Our comments will focus on 3 topics: recreational access; construction process; and aquatic resources. •Recreational Access: -CRK supports safe, continued and enhanced access to the River in the middle of the Project area's middle (Cemetery Road) and the bottom (Lake Harding). This type of access will enable paddlers of varying skill to enter and exit the project area at multiple points. Some existing access points will require extensions and improvement when dam removal reduces pool elevations and river flows. -CRK also supports a new public recreational access point to the river above the Projects. For example, a new proposed park above Langdale on river right would provide safe access above the exposed Langdale shoals.	The new Langdale Park is described in Section 11 of the Applicant Prepared Environmental Assessment and is also referenced in the Decommissioning Plan and 90 percent drawings for the Langdale Project (Appendix D). In addition, the Decommissioning Plan provides details on the construction process, schedule, and post removal monitoring. Regarding effects on Shoal Bass, Georgia Power implemented a Pre-Removal Shoal Bass Abundance and Tracking Study to provide baseline information on Shoal Bass. In addition, Georgia Power is proposing to implement a Post Removal Shoal Bass Abundance and Tracking Study to assess effects of the removal on Shoal Bass in the Project area. Section 8 of the APEA discusses effects of dam removal on Shoal Bass and other aquatic organisms.

For example, see slide 55 from the October 5, 2020 Public Meeting. CRK understands that the City of Valley, Alabama may assume local control and responsibility for recreational assets in the Project area. Foot access to the islands and the river is something that might be considered. CRK understands the managed nature of West Point Dam releases and river flows adds significant risk for people who choose to recreate in the Project area. If a single access point from Langdale to the large adjacent island was available, anglers might appreciate foot access from the west bank to the shoals. •Construction Process: -CRK understands that Georgia Power is developing the details of the construction plan. CRK anticipates those details in the next round of public engagement and document release. CRK is very interested to learn about Georgia Power's plans for egress and river access to conduct physical construction and removal activities. -Additionally, we look forward to reviewing the dam removal schedule, that is, which dam will be removed first and by what methods, and what will Georgia Power intend to do with the dams' debris. -Finally, CRK would also like to know if Georgia Power has any additional plans for pre-construction and post-construction monitoring during the construction process, and specifically for sediment movement as well as quantity and quality. •Aquatic Resources: -CRK is optimistic that removal of the dams in the Project area will enhance aquatic habitat and connectivity for species, including shoal bass. While CRK understands that Georgia Power cannot stock any aquatic species without coordinating with Georgia's Department of Natural Resources Wildlife Resources Division, it would be helpful to understand Georgia Power's plans for pre-construction and post-construction monitoring of aquatic species. -For example, is there a base-line for the shoal bass population, and if post-construction monitoring revealed poor conditions, what might Georgia Power do to improve conditions? It is our understanding that post-construction monitoring in Columbus after the removal of Eagle & Phenix and City Mills dams has been extremely limited. •In closing, CRK remains supportive and hopeful about the prospect of barrier removal in the Middle Chattahoochee River region. Given the unprecedented size, scale and scope of this proposed project, pre- and post-construction monitoring of multiple natural and aquatic resources would greatly aid in the general understanding of the impacts and consequences of barrier removal in large, regulated southeastern river systems.	Georgia Power performed studies to address effects of the decommissioning, as described in the following study reports: • Final H&H Report • Final Water Quality Report •Draft Sediment Quality Study Report •Draft Sediment Transport Study Report •Final Potential Effects on Dam Removal on Shoal Bass •Pre-Dam Removal Shoal Bass Abundance and Tracking Study Report •Freshwater Mussel Survey Report •Archaeological Testing of Two Sites On The Chattahoochee River, 9HS30 AND 9HS31, Harris County, Georgia •Archaeological Survey of 20 Acre Island in the Chattahoochee River, Harris County, GA •Archaeological Reconnaissance Survey of the Chattahoochee River, Harris County, GA •Langdale Dam Marine Remote Sensing in the Chattahoochee River, Harris County, GA •Assessment of Effects for Archaeological Sites 9HS30, 9HS525, 9HS526, 9HS527, 9HS528, 9HS529, 9HS530, 9HS531, 9HS532, and 9HS533.
Based on our review of the study report, we have the following comments: • On Page 5 of the draft study report, GPC stated "searches for relevant contemporary USGS and ADEM data were not found." ADEM sampled Moores Creek, which is one of the main tributaries to the Riverview Project Reservoir, in 2014 and 2016. This data can be found using the Water Quality Data Portal. • We request Georgia Power to continue informing the ADEM of water quality and sediment distribution findings during the decommissioning process.	These comments are addressed in the Final Water Quality Study Report.
Comment by American Rivers Accession No. 20201106-5010	**Georgia Power's Response**
American Rivers fully supports and encourages the removal of these projects for the reasons outline below: •Public safety improvements: On 4/1/2019, one drowning and three injuries occurred at Crow Hop diversion dam as a result of a kayaking accident. Eliminating the low head dams will significantly improve public safety in this reach of river, especially for water recreation activities.	Georgia Power performed studies to address effects of the decommissioning including: river hydraulics and hydrology (H&H), sediment characterization (quality and quantity), potential impacts to aquatic organisms, water quality, and cultural resources. Georgia Power is filing an Applicant Prepared Environmental Assessment (which incorporates study results and analyzes effects on environmental, recreational, and cultural resources), Dam Decommissioning Plan, and the following study reports:

•Sediment release: Based on data provided by GPC, impounded sediment volumes behind the low head dams are negligible compared to overall sediment volume in the system below West Point dam, which has become a sediment sink since its construction. Release of impounded sediments at the removed Riverview & Langdale Dams will renourish sediment-starved downstream habitat for the benefit of aquatic species. •River flow: By definition, low head dams do not store water, therefore removal of the dams will not cause significant changes in flow volume or timing, as the flow of the Chattahoochee River is controlled by US Army Corps of Engineers (USACE) operations at West Point Dam. USACE may elect to hold back flow in West Point Lake during dam removal construction to provide optimal conditions for instream activities. Presence of naturally occurring bedrock shoals will act as grade control for the river once dam removal construction is completed. •Flood risk: According to GPC studies, removing the dams will not increase flood risk, and in fact reduces flood risk at the 1% return, particularly upstream of the Langdale Dam. American Rivers concurs with this finding. •Boat access: due to water elevation changes associated with dam removal, some areas of the river may not be navigable during low flow conditions, even for low draft paddling boats such as canoes and kayaks. However, the public safety benefits of dam removal are critical given the recent fatality and injuries at the Crow Hop dam. It may be possible to negotiate short term flow augmentation from West Point Lake to support schedule water recreation events. It is important to point out that more than adequate access to flat water boating for canoes, kayaks, jon boats, and deeper draft motorized boats exists at West Point Lake and Lake Harding in proximity to the project area. •Aquatic habitat connectivity and species impacted: GA Wildlife Resources Division finds that dam removal will support aquatic habitat connectivity and access for shoal bass, a high-value, rare species identified as a priority species in the GA State Wildlife Action Plan. Chattahoochee Riverkeeper finds the potential reconnection of up to 11 miles of shoal bass habitat and encourages habitat enhancements be included in the project. American Rivers concurs with these positions and supports dam removal for aquatic habitat connectivity to benefit shoal bass. •Infrastructure: American Rivers finds that GPC plan for dam removal incorporates structural adjustments to accommodate continued treated effluent discharges to the Chattahoochee River. •Public engagement: Based on materials provide by GPC, American Rivers finds that public engagement was sufficient to provide critical information about the project to surrounding property owners, river interest groups, cognizant agencies, and stakeholders. •Water quality: American Rivers has documented the impacts of low head dams on water quality including decreased dissolved oxygen and increased thermal profile at numerous locations around the country. We concur with GPC's finding that dam removal will not negatively impact the water quality of the Chattahoochee River.	• Final H&H Report • Final Water Quality Report •Draft Sediment Quality Study Report •Draft Sediment Transport Study Report •Final Potential Effects on Dam Removal on Shoal Bass •Pre-Dam Removal Shoal Bass Abundance and Tracking Study Report •Freshwater Mussel Survey Report •Archaeological Testing of Two Sites On The Chattahoochee River, 9HS30 AND 9HS31, Harris County, Georgia •Archaeological Survey of 20 Acre Island in the Chattahoochee River, Harris County, GA •Archaeological Reconnaissance Survey of the Chattahoochee River, Harris County, GA •Langdale Dam Marine Remote Sensing in the Chattahoochee River, Harris County, GA •Assessment of Effects for Archaeological Sites 9HS30, 9HS525, 9HS526, 9HS527, 9HS528, 9HS529, 9HS530, 9HS531, 9HS532, and 9HS533.
Comment by American Rivers Accession No. 20201106-5011 - Duplicate of above comments	**Georgia Power's Response - see above**
Comment by Chattahoochee Riverkeeper (Chris Manganiello) Accession No. 20201106-5011 - Duplicate of above comments	**Georgia Power's Response - see above**
Comments by Federal Energy Regulatory Commission Accession No. 20201118-3015	**Georgia Power's Response**
H&H	
As noted in our August 15, 2019 letter, several stakeholders raised concerns regarding the composition of the sediment and the possible presence of contaminants within it. The H&H study fails to characterize the sediments found within the projects' reservoirs and instead speaks mostly to sediments elsewhere in the river	Georgia Power conducted a standalone Sediment Quality Study and is filing a Draft Sediment Quality Study Report concurrent with the Dam Decommissioning Plan and Applicant Prepared Environmental Assessment to address specific comments on sediment. The Final H&H Study Report incorporates by reference the Draft Sediment Quality Study Report.

Langdale and Riverview Projects - Public Comment Matrix	
basin. Additionally, Appendix C only includes data for the borings within the proposed constructed channel through the island between Langdale Dam and Powerhouse. •You must revise the H&H study report to characterize the sediments within the project reservoirs and include the associated data.	
The H&H study fails to explain why you did not perform a chemical analysis of the sediment and does not speak to the concerns related to possible contaminants in any meaningful way. You must explain the appropriateness of the comparisons in the H&H study to other sampling completed within the river basin due to the following conditions: 1) West Point Dam was more recently constructed and some of the sampling was performed in the riverine section just below the dam; and 2) the City Mills and Eagle Phenix Dams were located downstream of Lake Harding and had smaller impoundments with characteristics that made them less likely to trap sediment. •You must revise the H&H study report to reassess the need for chemical analysis based on project specific circumstances.	Georgia Power conducted a standalone Sediment Quality Study and is filing a Draft Sediment Quality Study Report concurrent with the Dam Decommissioning Plan and Applicant Prepared Environmental Assessment. The Draft Sediment Quality Study Report provides a chemical analysis of the sediment and documentation of consultation. As applicable, the Final H&H Study Report incorporates by reference the Draft Sediment Quality Study Report.
The H&H study fails to explain how the number and locations of the sediment borings were determined, or explain their adequacy of lack thereof (e.g., see pages 31 and 52 – "borings did not provide enough information for interpolation"). •You must revise the H&H study report to include an explanation of the appropriateness and adequacy of the locations and number of borings completed.	Georgia Power conducted a standalone Sediment Transport Study and is filing a Draft Sediment Transport Study Report with the Dam Decommissioning Plan and Applicant Prepared Environmental Assessment. The Final H&H Study Report incorporates by reference the Draft Sediment Transport Study Report.
The H&H study fails to address sediment quantity (estimated to be 516-acre-feet or approximately 832,500 cubic yards), post removal sediment transport, and associated impacts in any meaningful way. •Either the Decommissioning Plan or the revised H&H study report must include a thorough analysis of the post removal sediment impacts, considering specific metrics such as erosion, scouring, incision, accretion, etc., stemming from the initial and prolonged changes in flow dynamics during and following dam removals. •You must also include specific analyses of these impacts to aquatic organisms, as described below.	Georgia Power has addressed the sediment quantity in the Draft Sediment Transport Study Report along with responses to each of the specific metrics described by FERC. Potential effects on aquatic organisms are described in the Applicant Prepared Environmental Assessment and in the Draft Sediment Transport Study Report.
•Either the Decommissioning Plan or the revised H&H study report must include a discussion of post-removal streambank erosion.	The Decommissioning Plan discusses post removal streambank erosion.
The H&H study indicates two boat launches will be dewatered as well as the loss of motorboat access to most of the study reach but fails to discuss the impacts or possible mitigation measures. •Either the Decommissioning Plan or the revised H&H study report must include a discussion of impacts and possible mitigation measures.	The Decommissioning Plan and the Applicant Prepared Environmental Assessment discuss Georgia Power's proposed protection, mitigation, and enhancement measures to address access to existing public boat ramps.
The H&H study contains the following error message in several locations (e.g., pages 25, 52, 53, and 74): "Error! Reference source not found." Please correct these reference errors.	Error corrected in the Final H&H Study Report.
Shoal Bass & Water Quality	
In the shoal bass literature review, you included a histogram displaying predicted acres of existing and post-removal optimal habitat for shoal bass. You state that the data were generated from output from the Hydrologic Engineer Center – River Analyses System (HEC-RAS) modeling and analyzed with GIS, however, you did not provide supporting evidence (methods, data, maps, etc.) to substantiate those conclusions. •Either the Decommissioning Plan or a revised shoal bass literature review must include such evidence to adequately support your conclusions.	Georgia Power conducted a standalone Pre-Dam Removal Shoal Bass Abundance and Tracking study that includes methods, data, maps, and conclusions.

Langdale and Riverview Projects - Public Comment Matrix	
Similarly, you state in the water quality study report that conclusions were made based on modeling results; however, the methods you used were not described in the report, nor were any pertinent supporting materials to substantiate the statements that: -The decommissioning and removal of Crop Hop and Riverview Dams will result in a minimum flow of at least 193 cubic feet per second in the Headrace Channel [thereby not impacting the Valley Wastewater Treatment Plan permitted effluent discharge]; -and If the projects' dams are removed, the resulting lower water levels and higher water velocities in the affected reach of the Chattahoochee River would provide an alternative means of physical aeration as the water passes through exposed shoals. •Because there are gaps in your conclusions, you must address the items above in either the Decommissioning Plan or a revised water quality study report by providing such evidence to adequately support your results. Regarding minimum flows in the headrace channel, please also include documentation of correspondence with Valley Wastewater Treatment Plant for our review.	These comments are addressed in the Final Water Quality Study Report. Note that the consultation for the Valley Wastewater Treatment Plant was conducted with the East Alabama Water, Sewer, and Fire Protection District.
Aquatic Resources	
The H&H study does not address the specific methods that will be used in the removal of each individual dam, nor does it address the rate of drawdowns that each pond would experience as a result of each removal. •The Decommissioning Plan must include the specific means by which the dams would be removed, including the anticipated rate of drawdown (to natural river channel) that would occur under each scenario.	Specific information on the removal of each dam and the Riverview Powerhouse is provided in the Decommissioning Plan, along with the construction sequence, schedule, and drawdown information.
As noted above, the H&H study does not provide an adequate analysis of sediment transport during and following dam removals. Further, there is no analysis of potential effects to mussel beds or other aquatic organisms in the shoal bass or mussel studies. •The Decommissioning Plan must include an analysis of the potential impacts of sediment transport to aquatic organisms (i.e., sedimentation of mussel beds, habitat loss/creation, etc.), based on the revised H&H study report as directed above.	These issues are addressed in the Applicant Prepared Environmental Assessment.
Regarding aquatic organisms that may become stranded in dewatered areas during and following dam removals, there is no mention of a plan for surveys and/or rescue efforts in either the mussel or shoal bass studies. •The Decommissioning Plan must include a plan to survey for stranded aquatic organisms during each dam removal, including methods for rescue/relocation if stranded organisms are found. This plan must be based on your previous bathymetry models, as well as your pending analysis of anticipated rates of reservoir drawdown as directed above.	The Draft Aquatic Organism Recovery Survey and Relocation Plan is discussed in the Decommissioning Plan and the Applicant Prepared Environmental Assessment. In addition, the draft Aquatic Organism Recovery Survey and Relocation Plan is provided as an appendix to the Decommissioning Plan.
Cultural Resources	
On September 21, 2020, you filed archaeological surveys completed for the Langdale and Riverview Projects with the Commission. However, you did not include consultation from the Georgia and Alabama State Historic Preservation Officers (Georgia and Alabama SHPOs) regarding the review of archaeological surveys in your filing. •In our review of the archaeological surveys, we expect your Decommissioning Plan filing to include a draft Memorandum of Understanding (MOA) that memorializes the mitigation of any adverse effect to historic properties that would result from your proposals. •Additionally, you should include documentation of your consultation with the Georgia and Alabama SHPOs and how you addressed any of their comments in the MOA.	Consultation with the SHPOs has been ongoing during the study phase and this documentation is provided in the Consultation Summary as appendices to the concurrently filed Privileged cultural resource reports. After the study report review concluded, Georgia Power drafted an MOA that went out on July 1, 2022 to Alabama and Georgia SHPOs as well as Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Coushatta Tribe of Louisiana, and the Muscogee (Creek) Nation. Georgia Power did receive comments from the SHPOs and is currently addressing those comments in the MOA; a 2nd draft MOA will be sent back out to the same July 1st groups by middle to late August 2022. Georgia Power anticipates receiving any further comments and addressing them by about early October. Georgia Power will submit documentation of the MOA drafts and MOA consultation in a separate submittal to FERC in October 2022.

Langdale and Riverview Projects - Public Comment Matrix	
Other Issues	
Several comments were filed in response to the October 5, 2020 virtual study result meetings. •You are expected to respond to those comments either as part of the study report revisions requested above or in the Decommissioning Plan to be filed with the Commission.	Comments are addressed in the Draft and Final Study Reports, Decommissioning Plan, and/or Applicant Prepared Environmental Assessment.
We remind you that our analysis of the surrender and decommissioning is based only on information filed on the record for these proceedings. •To help prevent the need for additional future studies and information requests, we again recommend that you document the detailed methods, consultation process, development, and implementation of these studies. Additionally, each study report should include each party's concurrence and/or comments, and explanations of how you addressed the comments.	The Study Reports include the associated documentation of consultation.

Brant Duncan, LaGrange, GA.
These dams are a historical landmark for this community. Further the two dams in question (Docket P-2341 & P-2350) isolate a very complex and thriving eco system due to being protected waters. Many of the marine life would be adversely effected by the removal of these dams. It would allow the larger striped bass held out by the dams to release into these upper portions. Years of stocking efforts above and below have greatly increased their population beyond natural reproduction rates and would decimate a thriving shoal bass habitat. The shoal bass are protected in Alabama and should be in Georgia. Only natural to several stretches of the rivers in the Southeast. The rapids and high oxygen levels from the Langdale dam provide a healthy environment. The removal would release centuries of sediment into the area destroying the eco system. Beyond this with the fluctuation of water levels due to generating it would make these shoals inaccessible for recreation as well. Perhaps a portage or comprise can be made with a natural fish ladder in the area rather than total removal. I hope that consideration is made for the general public that lives and enjoys this stretch of river and that studies are done extensively on the negative effects of this removal. Since the removal of such dams in Columbus, Ga. the Shoal bass have pushed further down stream and it has become a Striped Bass fishery now. It is a prime example of what would happen here as well.

Tim Retzlaff, Opelika, AL.
I live in the area and kayak this section of the river on a regular basis. The dams create reservoirs that make this possible. Even with the dams there are many places where the water is barely deep enough for even a shallow draft kayak to navigate. Removal of the dams will lower the water level. The sections that are shallow now will be dry. The only time this section of the river will be navigable will be when the West Point Dam is generating.

James Sorrells, Valley, AL.
The dams need to stay. So many draw happiness in the fishing and boating that they provide. If the dams are removed, the fishing that everyone knows and enjoys on this stretch of the river will cease to exist. The abundance of aquatic life will no longer be able to thrive as it does now. These dams provide fishing opportunities that are second to none in this area with many species of fish to fish for. The shoal bass alone are worth leaving them in place. Many men, women and children enjoy the fishing and scenery offered by the dams that will be lost forever if they are removed. I ask that things be left as they are for the sake of the aquatic life that depend on the dams for survival and habitat and for the ones that love the river and dams as they are. Thank you for your time.

Larry Bryant, Carrollton, GA.
This is in response to the Georgia Power proposal for Langdale and Riverview, Crowhop dam decommissioning.

My first thoughts on removing the Langdale and Riverview, Crow Hop dams, without thinking it through, were to go ahead and remove them.
I am an avid shoal (shoalie) bass fisherman among many others, and there's no doubt in our minds that we would prefer what is best for the river and the survival of this scarce population of shoal bass.
I understand the reasoning in this plan for the dams to be decommissioned and taken down to have the river closer to its original state, but I'm not so sure that is possible, or at least, not anytime soon.

Generations of people have seen a century of the Earth reclaiming itself in this stretch of the river as the dams were built over a century ago, and now, this stretch of river is world-class fishing water.
The largemouth populations are impressive, but the shoal bass' impressive but limited population also teeters in this fragile balance of important gamefish.
It will take a very long time for the largemouth and shoal bass to adjust to the changes and the entire area will be in ecological shock because it will enable the stripers to move up and decimate an old, ancient population of shoal bass up to Westpoint Dam.
Ultimately, we all know that West Point filters out of the damage done from metro Atlanta, flowing out of West Point Dam as a fresh, re-conditioned river.

Perhaps an alternate plan could be to delay the removal of the dams in order to fit, or redesign them in a certain way that would benefit the wider range of thriving fish populations...especially the indigenous shoal bass species.
It's a chance for us to develop a more viable compromise...maybe only removing one dam and creating tail races to increase shoal bass populations...maybe an incremental plan would be a better idea.
The last thing we want to do is to make a hasty decision resulting in destroying this ancient population of shoalies. One thing for sure, the more input, the better.
No one organization is smarter than all of us.

Mitchell smallwood, Lanett, AL.
Hello, I am a young 25 year old that has been blessed enough to grow up on the Chattahoochee River stretch from West Point Dam to Blanton Creek. For years now I have heard rumor of the dams being removed and I always thought "no way anyone would want these dams gone." Myself along with all the locals are now faced with the hard truth that it's in the works.

I am an avid fisherman and have always been amazed at the quality of all aquatic life that thrives in our river. It is unlike any other stretch of the Chattahoochee river. I have personally caught and released countless largemouth bass over 5 pounds. In recent years spotted bass have become more abundant and seem to be thriving as good or better than the largemouth. It's quite rare to find a thriving population of both.

These dams create an oxygen rich Reservoir capable of holding trophy sized bass. On February 8th, 2015 my brother in law, Mitch White of lanett Alabama caught a largemouth bass weighing in at 14.2 pounds. It was such a remarkable specimen that auburn university took fin samples for study. While the middle Chattahoochee is home to home to impressive largemouth and spotted bass, the shoal bass are the icing on the cake.

Shoal bass are native only to a couple of rivers in the U.S. What I find most interesting is that from westpoint dam to langdale there are no shoal bass that I've ever seen or heard of. However, from langdale to crowhop the shoal bass thrive to the extent of being able to target that specific species. Just like all of the middle Chattahoochee you can find record sized shoal bass as well. The only other place we find shoal bass are just below Crowhop dam. I believe that the dams are the only reason shoal bass are able to survive in this section of river. The dams act as a huge areators providing enough oxygen rich water to host she shoal bass and enough forage to grow record sized fish. Without the dams the shoal bass will slowly decline and eventually we won't see them in our section of the river. The state has many rules and regulations reguarding shoal bass. These rules are set to protect the population. I feel that leaving the dams alone will save the population.

I don't know how much pull a young fisherman such as myself might have on stopping the dam removal. I do know that I truly love and respect the middle Chattahoochee River. It has become a big part of my life as well as thousands of us locals that love to enjoy it's beauty. Removing the dams will drop the water to a level unsustainable for boats to recreate. Please consider this as well as all comments like it. We love this place and want it preserved. Thank you for your time and God bless.

Anthony Caldwell, Valley, AL.
My name is Anthony Caldwell and I live in Valley, Alabama. The purpose for this writing to put into words just how devastating removal of Langdale and Riverview Dams (P-2350, P-2341)
would be to my community. The following paragraphs are meant to illustrate the connection felt between the community and the structures. A connection that includes, but is not limited to fishing.

Let me start off by saying I am an avid fisherman. There is nowhere I'd rather be in the whole world than below Langdale Dam chasing Shoal Bass on a cool Spring morning. The beauty of the dam is unmatched. The thick fog and loud roar that the water creates as it crashes below is captivating to say the least. That captivation has been felt by my family since the dam's original construction in 1908. Whether they were working in the factories they powered, or fishing their tailraces, my family has always relied on these dams in some way. My family is just one of many.

The fish species that thrive as a result of the dams are numerous. I have fished rivers all over the state of Georgia and have never found a location comparable to the section of the Chattahoochee from the West Point Dam to the head waters of Lake Harding. The abundance of trophy class fish contained within this stretch rivals any in the southeast in my opinion. I can stand in one place and point to the spot I caught a 9-pound Largemouth Bass, and a 22" Shoal Bass within 10 feet of each other. That doesn't happen anywhere else.

These dams represent much more than just a backwater impoundment or a cascading whitewater shoot, they represent a way of life. Thousands of families in this area were fed, clothed, and housed by the factories that these dams supplied electricity to. The factories supplied Chambers and Troup Counties with jobs for decades and were the center of the communities. Everyone's Dad worked there, everyone's Grandfather used to, and everyone was hopeful that one day they would too.

Those factories are gone now. Reduced to piles of rat-infested rubble and red mud lots. Within weeks in some cases they disappeared, never to be seen again. The textile industry moved on and left us in its dust. All we have left to remind us of those prideful and prosperous days are the dams that powered them. We enjoy our heritage by marveling at the power of our river and the beauty of the structures that control it.

Removal of the Langdale and Riverview Dams will change the communities around it forever. No longer will we introduce visitors to our river by a trip to the overhead dams they've heard so much about. We won't have the opportunity to tell stories about just how those dams were built, or point out holes drilled into rocks for anchor bolts over 100 years ago. The craftsmanship of a time long forgotten will be lost forever. Not a trace of it remaining.

All of these historical and cultural artifacts seem to be expendable to Georgia Power and its investors. Yet, I cannot remove a rock shaped like an arrowhead from the river without fear of prosecution. Like beauty, I

guess “protection” is a word which is defined by the eye of the beholder. Some things are just beyond my understanding.

Thank you,

Anthony G. Caldwell

Kathy Maynard, Lanett, AL.
I have property located on the Chattahoochee River in Valley, AL. Our land is directly across from the island that has Crow Hop dam at the north end and the Riverview Mill dam at the southern end on the Alabama side. After viewing the proposal to destroy both of these dams, I have to protect my property and my family's heritage. This land has been in my family for 5 generations now, and taking these dams out will make our property almost worthless. We have enjoyed the river frontage, and the fishing from our land, and if this is done, we will be left without water access from our property. We disagree with what Georgia Power is saying about the advantages to wildlife, and will do everything we can to protect our property and the life my family has enjoyed.
Also, by looking at the proposed access to the dam, it looks like they are either planning to have equipment either on our land or directly beside it, and we cannot have this happen! Losing the life we have lived on this river is unacceptable. I have called the manager of the county listed in Georgia to discuss this and was told by a lady that answered the phone that he would not speak to me since he did not have any real information on the proposal.
I look forward to hearing from you as soon as possible.

Kathy Maynard

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
WILDLIFE RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

RUSTY GARRISON
DIRECTOR

February 27, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

RE: Comments on the Notice of Application for Surrender of License, Soliciting Comments, Motions to Intervene and Protests, Langdale Project, FERC # 2341 and Riverview Project FERC # 2350

Dear Secretary Bose:

The Georgia Department of Natural Resources, Wildlife Resources Division (WRD) has reviewed Notice of Application for Surrender of License, Soliciting Comments, Motions to Intervene and Protests, Langdale Project, FERC # 2341 and Riverview Project FERC # 2350 filed by the Southern Company, on behalf of Georgia Power. Georgia Power proposes to decommission and remove Langdale Dam (RM 192) and Riverview Dam (RM 190.6), as well as its diversion dam, Crow Hop (RM 191). These small, run-of-river, hydroelectric projects ($\leq$ 5 MW) are located on the Chattahoochee River between Bartlett's Ferry Dam (FERC No. 485) and West Point Dam (FERC No. US Army Corp of Engineers) and have not generated power since 2009.

Georgia Power has proposed a series of studies that include accurately defining impounded surface area and volume of these relatively shallow (<10ft mean depth) impoundments using LiDAR, conducting mussel surveys in the immediate vicinity of the dam removal areas, and collecting water quality data upstream of the dams prior to demolition for post-removal comparison. Georgia Power also proposes to develop hydrologic and hydraulic models of the Chattahoochee River from the I-85 bridge crossing to Bartlett's Ferry to inform the process and stakeholders of the range of possible river and flow characteristics that may occur once the dams are removed. A sediment study is not currently proposed as the removal of Eagle-Phenix and City Mills dam on the Chattahoochee River demonstrated that "significant amounts of sediment do not accumulate at small run-of river projects". However, bathymetry collected to develop the hydrologic model will be used to determine sediment volume behind each dam.

FISHERIES MANAGEMENT SECTION
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Both project applications address shoal bass under Rare, Threatened, and Endangered Species headings. In Georgia, shoal bass are recognized as a high priority, rare species (S2) in the WRD State Wildlife Action Plan due to several factors including limited range, habitat connectivity and others. To clarify, this game fish does not hold conservation status under the Federal Endangered Species Act or the Georgia Endangered Wildlife Act.

Georgia Power has been in consultation with WRD regarding the decommission and removal of these projects and we support the proposed studies and actions. The removal of these projects is expected to restore connectivity and riverine characteristics in this reach of the Chattahoochee River benefiting fish, wildlife and aquatic resources. The WRD will remain engaged in this process, evaluate study results to better understand the potential range of conditions resulting from this project, provide substantive comment and request additional studies, as needed.

We appreciate the opportunity to comment on the proposal and look forward to continued consultation with Georgia Power and other stakeholders as this process moves ahead. If additional information is needed please contact Thom Litts (thom.litts@dnr.ga.gov).

Sincerely,

Rusty Garrison
Director

cc. Jon Ambrose
Matt Thomas

Travis Carter, Valley, AL.
Langdale and Riverview Dams

As a local canoer/kayaker/fisherman who's been going down this stretch of river from West Point Lake to Lake Harding for over 30 years, I'd like to share some thoughts. This stretch is approximately 11 miles in length and is mostly shallow with a rocky bottom, and it's beautiful. For the most part the flow in this stretch of river is determined by power generation needs and there's two schedules, regular power generation (high water) and minimum power generation (low water). When they are running minimum power generation (typically mornings and weekends) there's a fair amount of class 1 shoals throughout this stretch making it a good canoe/kayak float trip or fishing trip, this is when the majority of folks get out on the river. During high water most of the shoals are covered up and you hardly see any canoes or kayaks.

There are three dams on this stretch, the Langdale Dam (approximately 9 miles below West Point Lake) which backs up water almost two miles, the Riverview Dam (a little over 10 miles below the lake) which backs water up almost a half a mile and the third is a small dam at the end of the headrace at the Riverview Power House (approximately eleven miles below the lake).

Anyone going over these dams in a canoe or kayak during high water stands a good chance of not surviving. During high water the dams create a hydraulic backwash below that can hold you there against the dam, tossing and tumbling you which can be hard to escape. There are buoy lines across the river five to six hundred feet up river from these dams that state Georgia law prohibiting boats beyond these lines. However, in all my years going down the river I've never seen anyone in a canoe/kayak stop at this line. The reason being, most folks going down the river are familiar with these dams, the generating schedules and most importantly, they know how to safely portage over them.

In the last six years we've had a couple of changes close by that are bringing a large number of out of towners to the area. One is Point University which has a campus in West Point Georgia, just two blocks from the river, the other is the Whitewater Course built in Columbus Georgia. The Whitewater Course draws thousands of folks to the area each year who enjoy water recreational activities. The Lands for Public Trust are also working on the Chattahoochee Blueway (a canoe/kayak course) from Lake West Point to Lake Harding.

I see a real danger for anyone that wants to enjoy the river that doesn't recognize the difference between high and low water levels and may not be aware of the dams. In fact, at the boat ramps in West Point and Shawmut (both above the dams) during high water levels the river looks like one would expect, no obvious signs of danger. Also, if you're on the river and they start generating it is real hard to notice the water level rising if you're several miles below the Lake. The water rises very slow, taking hours to reach its maximum generating height. Even when there's

low water, anyone going over the dams would fall 10 feet or more into a shallow pool situated on solid granite rock, still very dangerous.

With regards to fishing, I know that there’s a lot of concern for the Shoal Bass between these two dams. However, it seems logical that removing these dams will almost certainly expose more shoals, create more areas of rapid moving water, the natural habitat of the Shoal Bass.

In conclusion, I believe removing the dams and restoring this stretch of river to its original state would have multiple positive effects. I believe the river would be safer and more enjoyable and likely attract more people to the area to enjoy its natural beauty. I also believe in the long run, this would be beneficial to fishing.

Travis Carter

chris funk, smiths, AL.
I have been in love with the Chattahoochee river since moving to the area in 1986. My father and I enjoyed fishing these waters together till cancer took him from me and I have raised my son with the same opportunities he gave me. my wife, son and I regularly paddle our kayaks or run our powerboat on the river either fishing, photographing or helping out with the local swim teams or outdoor shops as a safety boat. I raised up fishing the city mill pond and fell in love with the beautiful brown bass we all know locally as the "shoalie" and while we readily eat spotted bass or an occasional largemouth, from day one shoal bass were admired, thanked for the opportunity of the catch and released to live another day. They are special without a doubt. When the whitewater project was brought to us under the guise of enhancing the shoal bass habitat, I had high hopes, but was a bit suspicious. There was nothing wrong with the river, or its healthy shoal bass population but people who supposedly knew better had a plan. now we have a river that is only accessible if you are a white water paddler and almost NO shoal bass.... so much for habitat enhancement!!! These dams that are proposed to be removed are no different than the thousands of fish habitat enhancers that are sunk off of the Alabama coast or in our freshwater lakes every year. they are an integral part in our fishing and enjoyment of the river giving places for the fish to congregate and lay eggs in spring that will not be washed away by the current. ask anyone that fishes these places, the best spots to find healthy populations of shoal bass are directly in front of or behind the dams! generations of shoalies have grown up and adapted to these dams and while yes, they are not "natural" in a sense they are all we, and they have ever known and they are a great asset for our river just like they are. please don't let flawed science, or the greed for money take away these dams. we already lost the history and wonderful fishing areas in downtown Columbus, please don't take these away from us. part of the wonder of these areas is the difficulty in paddling and portaging to get to them. this will keep it wild for anyone committed enough to work hard enough to get there. those that do will catch fish, see eagles, otters, deer and turkeys and have an experience to last a lifetime. if the dams are gone it will just be another river, ruined by an onslaught of tourists, rafts and tubers that don't care for, or appreciate the gift they are floating through. please leave the dams alone for the shoal bass, my family, my friends and our future! Chris Funk

Kendall J Andrews, Valley, AL.
This comment is in response to Georgia Power's filings under FERC docket number P-2350-025 & P-2341-033. For this comment, "dams" shall refer to the Langdale, Riverview, and Crowhop dams. I would like to note that at this time the hydrologic survey contracted by Georgia Power has not been completed and released. Without the information from the survey, comments from every submitter should be considered opinion based.
My name is Kendall Andrews and I am a resident of Valley, AL. I own river front property located upstream from the Riverview dam and powerhouse. I do not oppose Georgia Power's proposal not to seek re-licensure for the Langdale, Riverview, and Crow Hop dams. I do, however, strongly oppose the suggested removal of these dams.
A driving force behind the decision to propose removal has been enhancing the shoal bass populations that are found in this stretch of river. There are no published studies of the shoal bass population located in the impoundment between Langdale and Crow Hop dams, which is the primary location of shoal bass in the Chattahoochee River below West Point Lake and above Lake Harding. Without a baseline for comparison, I question the accuracy of those who claim shoal bass are on the decline here. This area has been noted for its world class shoal bass fishing, both in terms of quality and quantity. Prior to the removal of the Eagle Phoenix and City Mills dams in Columbus, GA, a notable shoal bass population existed below the dams. Proponents of removing those dams claimed it would restore the fishery and allow the populations to thrive. What happened was exactly the opposite; shoal bass are practically non-existent in that portion of the Chattahoochee now. Without tangible scientific research backing the claim, I do not believe the proposal to remove the dams should be approved on the basis of improving an already thriving population of shoal bass.
A major concern that I have is that if the dams are removed, access to the river will be lost. West Point dam controls the flow rate in this section of river. During periods of no generation, the public boat ramps that are available are very shallow. Navigability of the river will also be affected as the river in its current state is difficult in areas with abundant shoals. This portion of the river is highly utilized by locals and non-locals alike. All will suffer should these concerns come to fruition.
As a river front property owner, I stand to lose a great deal with the removal of the dams. The location of my property is in an area that will possibly be the most negatively affected. I am located upstream from Riverview dam and downstream from the Crow Hop diversion dam. While it is still unknown the exact changes that will occur without the completed hydrologic survey, it is certain that the depth of water adjacent to my property will be lower. I stand a high risk of not having any water at all. This would be detrimental to my property value. As an avid fisherman, I would also lose the recreation that the river affords me on a daily basis.
Georgia Power did not propose any sediment study in their submittals. These dams have been in place for nearly 100 years. I have personally seen the amount of sediment trapped behind each of them. Since the dams were here long before environmental agencies regulated what could be dumped or discharged into the river, it is very possible that the

sediment contains harmful contaminants. I believe every possible environmental study should be conducted prior to a decision being reached concerning removal of the dams.
Recent discussions about the future of the Langdale mill area have included repurposing it for economic development. While I would love nothing more than to see this area revitalized, I do not believe that locals that have enjoyed the river for generations should suffer. A solution that allows development while not reducing access and navigability should be the goal.
The high flow rates created by West Point dam are responsible for the dangerous environment of this section of river. While removing the dams may eliminate the risks they pose, it will potentially create others. More shoals will be exposed and more areas of super critical flow will be produced. Alternative solutions should be considered such as portages around the dams.
I would like to respectfully ask the Commission to re-open the comment period after the hydraulic survey has been completed. This will allow all stakeholders to have a better understanding of the magnitude of the effects removing these dams will have. Thank you for all consideration given to my comments.

Alan Simmons, Opelika, AL.
To whom it may concern: My name is AJ Simmons, and I am a private sector Fisheries Biologist that specializes in the management of trophy Largemouth bass. While providing management strategies on how to grow trophy bass is my job, my hobby is fishing for bass in public and private waters alike. While I have access to many private bodies of water that promise big bass, there is no place I would rather go to catch wild, giant bass than the Chattahoochee River. More specifically, the stretches of river below Langdale and Crowhop dam are the waters I frequent the most. These dams are located below West Point dam and above the headwaters of Bartlett's Ferry (Lake Harding). This specific stretch of the Chattahoochee River is a highly diverse ecosystem that teems with life. It is arguably the most diverse portion of the river as there are thriving populations of Striped, Largemouth, Spotted, and native Shoal bass amongst many other species. Along this specific portion of the river several low head dams were created over 100 years ago as a method to generate power for local textile factories. These dams back the river up to create unique reservoir- like portions of river that enhances aquatic life. When the Corps of Engineers generate water from West Point dam, this naturally shallow river has adequate water for recreational fisherman to navigate the river from kayaks or boats. These low head dams are the only reason that anglers like me and many others have the opportunity to fish these incredible stretches of river. Without the dams backing up the river, navigating this portion of river would extremely arduous.

The proposed removal of these dams is not being taken very lightly by locals and tourists who already utilize this public recreational opportunity. The City of West Point Georgia, City of Valley, and the Chambers County Commission have both spent significant funds in the last 12 months to increase the already limited access to the parts of river in question. I personally invested in an aluminum boat with a special jet driven motor to access this shallow river. These new and revamped boat ramps are many peoples lifeline to the river. The removal of these dams will not only limit access to those that fish by boat, but will inhibit even the best kayak anglers. The river will be inundated with rocky, shallow water that will be grueling to navigate. Not only will it make the river less navigable, but the removal of these dams will likely eliminate the newly provided public access, ultimately wasting tax payer's dollars.

One of the driving forces behind the removal of these dams is a possible economic boost the local communities may receive from newfound tourists. Those in favor of removing these dams are not accounting for the economic impact made by the anglers that already fish this river. These anglers directly impact the local economies as they purchase gas, food, fishing supplies and use local hotels when staying overnight. The removal of these dams would directly impact the amount of fishing and other non-paddling recreational activities on the river. The biggest issue that local stewards of the river, including myself, have with the removal of these dams is that the well-being of the fish and wildlife is not truly the driving force behind their removal. The removals of these dams favor the few people that plan to create white-water rafting courses where the dams currently exist. The true motive behind those in favor of

removing these dams is the profits they seek, not the wellbeing of the wildlife that will be affected.
There has been affirmation from the parties favoring the removal of the dams that it will afford anglers greater fishing opportunities while also benefitting the native fish and wildlife. These claims are backed with no scientific evidence. Water flow studies that project future water levels after dam removals have yet to be published. How can claims be made that the river will actually flourish after the removal of these dams if it is unknown just what the river will even look like? No baseline has ever been established as to how the fish populations were over 100 years ago before the dams were ever built. Locals know that these dams have not harmed the native species that call these waters home, and many believe that the dams provide fish increased dissolved oxygen content.
Disregarding opinion, it is fact that this stretch of river affords all anglers the opportunity to catch trophy size fish from public water. Year after year this stretch of river yields many 10 pound plus largemouth bass, 6 pound plus shoal bass and an innumerable amount of line peeling striped bass. The removal of these dams will eliminate access to an already thriving population of sport-fish. Additionally, those in favor of the dam removal state that a potentially improved paddling experience will be beneficial to the local economy. What might be gained in recreational paddling will be lost in angler access. Instead, local recreational paddling outfitters stand to be the only ones to benefit from such alterations to the river. The newly created whitewater rafting course in in Columbus Georgia has sparked the interest of local kayak guide companies who claim to have the rivers best interest at heart. Personally, I have seen first hand that these paddling outfitters contribute to the pollution of the river.
The biggest threat the removal of these dams pose is to the fish populations that are supposed to thrive from such action. The anglers that fish these stretches of river are the ones who clean up after others, and go out of their way to keep these fish thriving year after year. Removing these dams will likely eliminate public access to these already thriving stretches of river. It would be a travesty to take away a public resource that is rightfully theirs in favor of lining the pockets of a few. It is due to these reasons that I hope the removal of these dams does not come to fruition. Thank you for your time.

AJ Simmons

jody simms, Lanett, AL.
i think everything that can be said, has been said.Please reconsider the breaching of these dams,it will ruin a whole community way of life...and devastate the shoal bass population....thank you for your time

Donavan Carroll, Valley, AL.
Here is my comment on the De-commissioning of Riverview Dam. I am reading about the purpose of taking down the dam and one reason is to connect to Wolf Creek and making it into an amusement ride. Well isn't that targeting a specific age group. How many 65-85 year old people have you seen floating down the river? Yeah, me either. How many smaller kids do you see paddling down the rapids? Yeah, Me either. So you are proposing to take down A legacy of generations Of fishing, hunting, boating, Swimming, camping And etc. For the whole family. not just for the few in this proposal. This is an active river and it serves many different functions and activities and there is even less about the end result other than kyacks and shoal bass. Well shoal bass are already in all of these areas but yes the ones between Langdale and Riverview being probably the Largest in the world and need harvest protection, and not habitat expansion because under the recipicle water act, they can be harvested. If anything it should be designated as a no harvest zone for Trophey Shoal Bass. This is a unique habitat, a craddle for them and must be protected. The dams are the most protection they have due to the Riverine Habitat. To even consider busting these dams for the gain of money is a outrage, and nothing has been scientifically proven for it to be better for the environment. Riverine Habitat has been scientificaly proven to be the most productive far exceeding that if a river or lake and to try to say you will be reverting it back to natural water flow is propstrus considering they are Permanent Major dams within ten Miles in both directions so please stop using the term “Natural Flow” and say what its really about. The only people we are hearing from in favor of dam removal I have never once seen on this river. And I am on it 200 days a year on average.

You can go back in history of these dam removal projects Throughout the country in the past few decades and see how many have been environmental Disaster s Espically the ones involving industrial areas on the river, ours being the most potential starting at Industrial Drive in Atlanta to Riverview Mill. Your purposing to unleash over 100 years of this sediment into Lake Harding. I don't think that people that live on or use Lake Harding have taken into consideration that they do not have a shipping channel that is regularly dredged in other words all of this will be deposited into the lake. After looking At the sediment flow estimates for Columbus I did not see any Factors that the river channel just downstream is constantly dredged for the shipping channel. In other words Lake Harding won't have that luxury. Why has this not been addressed to the public.I just do not see any justification for a kyack run that will only be used by a limited group of people for a very limited portion of the year. The economics mentioned about revenue being generated for the area don't seem to be logical. You are still only talking about a limited group of people when we already have people coming from across the country to sample this part of the river, from duck hunters to people targeting the large Shoal Bass that are only in this part of the river. I can find multiple reasons of why this should not be done and I can't find any why it should be. This should have more public attention to what the

facts of all previous dam removals and what the outcomes were so they are knowledgeable about what this dam removal outcome could possibly be.

Sincerely,
Donavan Carroll
7571 School Street
Valley, AL 36854

Donavan Carroll

7571 School Street

Valley, AL 36854

Paige, Valley, AL.
Federal Energy Regulatory Commission
888 First Street, NE
Room 1-A-Dockets Room
Washington, DC 20427

Reference: Project# P-2350
Riverview Mill Surrender Application and
Decommission the project

COMMENT

With all due respect to Georgia Power for the surrendering of Licence (Exhibit A), and the decommissioning of the project (Exhibit E) Due to simple fact that What very little information that was supplied to you was, in fact, just that very little information. I am hoping that when this goes under your Consideration for approval that you will hear the small amount of letters you received. If nothing else but to require that more information be provided. We know that we are small in numbers but for those of us that grew up on this river or discovered this part of the river have alot more information to share.
My name is Paige Thorn and I grew up in Riverview. When I got old enough to buy my first home to one day have a family, I stayed with Riverview. So I have seen things come and go around here. This has always been a thriving town, friendly people and full of small town charm. if you ask about the fishing here, well lets just say you would get very little cooperation. Our fishing on this part of the river is and always has been abundant. Recognition Is not something any one here wanted but now it feels more like, “A Fight for our lives”. Why I say fight for our lives is because that is what it is to me, and here are just a few things that I hope will make you take a closer look at what all could be destroyed. You know I am trying to find the words to put in front of you that really might grab your attention and all I keep coming up with is this. SImple, That's what this place is...Had a bad day-SIMPLY take it to the river. You always come back feeling refreshed or have a big story of a big fish you caught or the baby eagles coming down in front of you to eat Or you could discover a eagle nest, a Blue Heron Catching a fish, maybe the quiet stroll(float) down river when you can see deer. turkeys. Birds of all kinds of birds(some rare), an occasional alligator, muskrats, Minks, bobcats, hawks, shad running up the dams are just a few Things you will more than likely see. The dams are alluring to the animals here because they provide a great source of food. With generation Of West Point Riverview Dam becomes a source of aeration, A Bigger source of Food, to just name a few things our Dam provides. You see we already have here what people try to build or the Purpose of Why people Build bird sanctuaries, Or release fish that will later be for game fishing.

Now that's just a few things due to only having 600 words to make you understand that we know we have something special here that has adapted to the Environment that was created over a hundred years ago. And if you destroy the habitat then you displace the animal. When did that become a way of making anything better. Its the habitat that attracted all of these animals to start with. We have a Biird Sanctuary on the Georgia side a Wildlife Management area ,Forever Wild Land So someone already knows in fact that this area should be preserved just as it is. The draft for de-commissioning Plan should stay with the building of portages around the dams. They can have the connection for kyackers and also not disrupt the animal habitat that made this their home and are thriving due to the already perfect conditions surrounding them. Please help us save this area. We don't want it to be like Phenix City. It would be a wastewater overflow. Please don't take my life away by taking everything great this place already has and De-commissioning It.

James K Cantrell, Valley, AL.

I am the President of the Chattahoochee Foundation. Below is our Mission:

The Chattahoochee Foundation is a public, non-profit non-member Corporation managed by our Board of Trustee with offices at City Hall in Valley, Alabama. We stand ready to assist and participate in any way we can. From our Articles of Incorporation, Article 6:

The purpose of the Foundation shall be to:

(a) To promote for the benefit of the general public the preservation of natural resources primarily located in, but not limited to, the Chattahoochee River basin and abutting counties in the State of Alabama. The resources shall include land and water resources the plant and animal life thereon, and unique scenic, agricultural, natural and historic sites;

(b) To promote and provide for the scientific study and broad public education regarding natural resources, including water, soil, plant and animal life, and amenity resources.

(c) To use all property held or controlled by the Foundation and the net earnings thereof for the benefit of the general public and for charitable, educational, recreational, conservation, scientific or historical purposes.

I along with most all of the citizens of the communities bordering the Chattahoochee River are vitally interested in the river's future. Specifically the 23 Mile run of the river from the West Point Dam to Lake Harding is of great interest and concern with the changes being brought by Georgia Power's de-commissioning of The Langdale (AL) and Riverview Hydro plants.

What is the best long term use/future of this portion of the river in our area? There are and will be many proposals forthcoming. Our Chattahoochee Foundation will be one of the players and will be providing much input in this process. This will be an important and interesting process and we look forward to it.

Thank you,

James K (Jim) Cantrell

ORIGINAL

March 4, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Submitted via FERC eFiling System and via USPS

RE: COMMENT regarding Georgia Power Company, Project Number P-2350-025 (Riverview hydroelectric dam & Crow Hop diversion dam), and Project Number P-2341-033 (Langdale hydroelectric dam)

Dear Secretary Bose,

Chattahoochee Riverkeeper appreciates the opportunity to file a **COMMENT** in response to the Federal Regulatory Energy Commission's (FERC) Notice of Application for Surrender of License, Soliciting Comments, Motions to Intervene, and Protests issued on January 24, 2019.

Established in 1994, Chattahoochee Riverkeeper (CRK) is an environmental advocacy and education organization with more than 8,600 members dedicated solely to making the Chattahoochee River a sustainable resource for the five million people who depend on it. Our mission is to advocate and secure the protection and stewardship of the Chattahoochee River, its lakes, tributaries, and watershed, in order to restore and preserve their ecological health for the people and wildlife that depend on the river system.

CRK generally supports barrier free creeks, streams, and rivers. Removing barriers reduces liability, enhances connectivity for aquatic species, and provides safe recreational opportunities. Removal may improve recreational opportunities and make a long proposed water trail project more viable.

CRK recognizes that barrier removal and the constructed whitewater course in Columbus, Georgia has not improved aquatic connectivity for shoal bass. However, because the Georgia Power Company's proposed removal will ultimately result in a natural streambed (as opposed to a manufactured streambed), CRK anticipates improved aquatic function. The proposed removal could create an 11-mile stretch of river shoal habitat. Georgia Power should make shoal bass habitat restoration a priority in the section of the Chattahoochee River.

Additionally, CRK recognizes that every barrier removal project is different and will result in significant change. CRK wishes to direct all involved parties to two resources. American Rivers produced two videos over a decade ago highlighting barrier removals in different parts of the United States. The videos document why the structures were removed, and the level of citizen

and local government involvement. Additionally, there is significant testimony from individuals who did not initially support barrier removal. Upon removal and reflection these individuals realized their concerns and fears were not realized. You may find the videos online:

Taking a Second Look: Communities and Dam Removal (2010)
https://youtu.be/cCQiaT1KcPo

Restoring America's River: Preparing for the Future (2010)
https://vimeo.com/11111432

CRK does have two concerns. First, a robust and transparent study of flow and hydrodynamics must be completed and publically released to ensure enough flow will remain in the river for municipal water supply and wastewater assimilation. The proposed barrier removals will result in a more-flashy and less regular stream flow that could be a problem for municipalities' raw water supply withdrawal points and the East Alabama Water, Sewer and Fire Protection District's wastewater discharge. There are other wastewater discharges—including West Point (Ga.), Lanett (Al.), and inflow from Long Cane Creek (which supports multiple wastewater discharges in Georgia)—that must also be considered when evaluating comprehensive assimilative capacity for this stretch of the Chattahoochee River.

Second, a more detailed analysis of the amount and necessary management of legacy sediment may be necessary. The Eagle and Phenix Mill Dam was the first major dam built across the Chattahoochee River in 1834 before significant land disturbing activity began in the upper Chattahoochee River basin. This could explain why there was little sediment discovered during the structure's removal in 2013. Langdale was the second structure constructed in the region in 1860, followed by North Highlands (1900), City Mills (1900) and Riverview (1902). Significant sediment flows in the region would have remained high until 1975 when West Point Dam was constructed. Given this timeline, the age of these structures, and the agricultural history of the region, it is plausible that there may be more legacy sediment than anticipated behind the structures Georgia Power proposes to remove.

CRK supports the request to surreuder the license and decommission the projects prior to the end of their license terms. Furthermore, CRK supports the removal of the three dams and the Riverview Powerhouse (P-2350-025), and the intent to repurpose the Langdale Powerhouse (P-2341-033). CRK would support retention of some elements of the dams for cultural and historic purposes if reasonable, feasible, and safe.

If you have any questions, please do not hesitate to contact us.

Sincerely,
/JU/
Jason Ulseth
Riverkeeper
404.352.9828
julseth@chattahoochee.org

Expected Impacts of Barrier Removal on Shoal Bass *Micropterus cataractae* Within their Native Range

The Southeast Aquatic Resources Partnership's Southeast Aquatic Connectivity Program helps identify opportunities for barrier removals across the region. The removal of barriers to migration is one of the actions that resource managers have commonly focused on to further Shoal Bass *Micropterus cataractae* conservation. This briefing is intended to summarize existing research and literature to approximate expected impacts from removals of dams, culverts, and other barriers to fish passage on Shoal Bass population status. While research needs remain regarding the natural history and habitat needs of the species, recent research helps shine light on the potential for future barrier removal projects.

Background

The Shoal Bass is a riverine, freshwater fish species endemic to the Apalachicola-Chattahoochee-Flint (ACF) river basin in Georgia, Alabama, and Florida (Williams and Burgess 1999). This fish is typically found in mainstem rivers and their larger tributaries (Ramsey 1975). True to its name, the Shoal Bass typically prefers swift, rocky habitat when available (Williams and Burgess 1999; Wheeler and Allen 2003; Stormer and Maceina 2009; Gocklowski et al. 2013; Sammons et al. 2015). Seasonal habitat use varies, with adult Shoal Bass often congregating in large shoal complexes to spawn in spring (Gocklowski et al. 2013; Bitz et al. 2015; Sammons 2015; Cottrell 2018), then dispersing to diverse habitats, including coastal plain river segments with little, if any, shoal habitat (Sammons 2015).

While the Shoal Bass is a popular sportfish species across its range (Taylor and Peterson 2014; Sammons et al. 2015), threats from multiple factors include habitat fragmentation (Dakin et al. 2015; Sammons and Early 2015; Taylor et al. 2018a) and degradation (e.g. sediment, Walser and Bart 1999; temperature, Porta 2011; and flow, Stormer and Maceina 2009) as well as hybridization with other *Micropterus* species (Dakin et al. 2015; Alvarez et al. 2015; Taylor et al. 2018b). Because of these factors, the Shoal Bass is considered a species of conservation concern by multiple groups. The State of Georgia considers the Shoal Bass both a High Priority Species and a Species of Concern (Georgia Department of Natural Resources 2015). Stormer and Maceina (2008) found declining abundance in three of four known populations in Alabama from 2005-2007. The state of Alabama now ranks Shoal Bass as a Level 1 Species of Greatest Conservation Need, with only one known population remaining (Alabama Department of Conservation and Natural Resources 2015). However, recent sampling efforts suggest that this population may now also be extirpated (S. Sammons, personal communication). The State of Florida considers the Shoal Bass Rare and Biologically Vulnerable (Florida Fish and Wildlife Conservation Commission 2012). The International Union for Conservation of Nature Red List considers them "Near Threatened", while the Endangered Species Committee of the American Fisheries Society considers it a species of special concern (Jelks et al. 2008). However, the shoal bass currently is not listed or petitioned for federal protection under the Endangered Species Act.

Prior to European settlement, the ACF basin was a free-flowing, interconnected system. The presence of Shoal Bass from mountainous reaches of the Upper Chattahoochee through the Piedmont, across the fall line, and into the Coastal Plain suggests some degree of connectivity, though there do appear to be

some natural genetic differences among populations across the range (Taylor et al. 2018c). Shoal Bass spawning migrations as far as 197 km have been recorded in the unregulated section of the Flint River (Sammons 2015), though these can be much shorter in sections of the basin with reduced effective distance due to dams or reservoirs (Stormer and Maceina 2009; Sammons and Early 2015; Cottrell 2018). A species distribution modeling exercise suggested that the distance of available free-flowing, interconnected stream length (comprised of third-order streams and larger) was important in explaining the current distribution of Shoal Bass, and that interconnected reaches of less than approximately 100 km rapidly lost their suitability for Shoal Bass presence (Taylor et al. 2018a). Fragmented tributary streams showed the greatest loss in Shoal Bass suitability, likely because longer free-flowing fragments connected to mainstem rivers confer access to critical habitats that are unevenly distributed within stream systems (e.g., spawning shoals or drought refugia; Taylor et al. 2018a). In stream segments with little effective reach, inbreeding depression and random genetic drift can result (Dakin et al. 2015; Taylor et al. 2018c), perhaps lowering fitness of remaining individuals. Where barriers to fish passage block smaller tributary populations from access to mainstem refugia, increased variability in year class strength (Taylor 2017) and high mortality during drought (Stormer and Maceina 2009) have also been documented.

Shoal Bass do not appear to prefer to utilize lentic habitats (e.g. reservoirs and backwaters). Sammons and Early (2015) found that fish from a large tributary of the Chattahoochee River entered the mainstem, but remained immediately below a dam where flow was present rather than entering a downstream reservoir. When Shoal Bass are released into reservoirs (e.g. following fishing tournaments), they typically return to lotic environments upstream of the reservoir (Taylor and Peterson 2015), and Ingram et al. (2013) found that survival of translocated shoal bass was 92% after 90 days, with most fish returning upstream to flowing portions of the headwaters river. Shoal Bass populations do exist/previously existed within some small impoundments on the Middle Chattahoochee River, though each of these systems typically receives some flow due to their high inflow to storage ratios (J. Slaughter, personal communication) in comparison with larger impoundments. In contrast, populations of Shoal Bass are so abundant and concentrated during spawning in the unregulated Upper Flint River that questions have actually been raised about potential angler overexploitation (Sammons and Goclowski 2012).

Discussion

Removal of barriers should generally benefit shoal bass populations for multiple reasons. Providing fish passage allows the effective reach available to a population to increase, which can open up access to quality habitat and resolve genetic diversity concerns across currently isolated populations. Therefore, the removal of barriers that open up the highest amount of quality habitat should be prioritized. In areas where non-native congener species (e.g. Alabama Bass *Micropterus henshalli*) exist below a barrier but not above it, however, managers should consider the potential impacts of hybridization and/or interspecific competition on shoal bass as a factor. Removal of barriers can also make populations more tolerant of environmental stressors by offering refugia during periods of drought or due to habitat degradation in a localized area as a result of land use impacts, particularly if access to mainstem rivers that are not as susceptible to critical reductions in flow is made available. This may include the

restoration of impounded reaches to more suitable, flowing habitat that shoal bass are more likely to utilize.

It is critical that barrier removal projects do not impede passage of fish due to excessive velocities at newly-established points of connectivity. While no published literature exists on the critical swim velocities of Shoal Bass, several studies have looked at similar criteria for Smallmouth Bass *Micropterus dolomieu*. Published U_{crit} values for various sizes of Smallmouth Bass range from 63 to 117 cm/s (Bunt et al. 1999; Cooke and Bunt 2001; Peake 2004). Peake (2004) also studied the ability of Smallmouth Bass to pass through culvert-style raceways and found that a high proportion of individuals (82-95%) were able to make complete ascents at velocities ranging from 40-120 cm/s. Smallmouth Bass are known to use riverine habitats throughout their range, and therefore should stand as a suitable, conservative proxy for Shoal Bass critical swim velocities.

Restoration of impounded reaches can also increase access to historic habitat. While removal of larger dams that create these impoundments is not always a feasible option, where possible, it could potentially increase the biological carrying capacity of a basin. If the impoundment covers historic spawning habitat, benefits can be two-fold in that spawning shoals are restored with appropriate flows while access is then provided to isolated, adjacent populations downstream of a dam. Even in cases where population equilibrium does not increase, population stability over multiple generations is likely to increase.

Barrier removal projects should always consider the biological needs of the species in concern and be based in sound science. If removals can ameliorate known threats to Shoal Bass populations (e.g. isolation, impoundment, habitat degradation, genetic isolation or hydridization) without creating a larger problem due to one of these threats, these projects should be pursued in a cost-effective approach that prioritizes species recovery both across the range and within priority sub-basins.

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On Mon, Jun 17, 2019 at 8:52 AM O'Rouke, Patrick Michael <PMOROUKE@southernco.com> wrote:

> Thanks!
>
> ---
>
> **From:** Taylor, Andrew <tandret@ostatemail.okstate.edu>
> **Sent:** Monday, June 17, 2019 9:30 AM
> **To:** O'Rouke, Patrick Michael <PMOROUKE@southernco.com>
> **Subject:** Re: Shoal Bass White Paper
>
> **EXTERNAL MAIL: Caution Opening Links or Files**
>
> ---
>
> Hi Patrick,
>
> Sounds great...I'll do my best to get this back to you by the end of the week.
>
> Thank you,
> Andrew
> **----------**
> **Andrew Taylor, Ph.D.**
> **Senior Research Specialist**
> Oklahoma State University
> OK Cooperative Fish and Wildlife Research Unit
> 007 Agriculture Hall
> Stillwater, OK 74078
> Email: Andrew.t.taylor@okstate.edu
> Website: www.andrewtaylor.fish [andrewtaylor.fish]
>
> *Follow me on ResearchGate [researchgate.net]*
> *"Like" the Black Bass Conservation Committee's Facebook page [facebook.com]*

On Thu, Jun 13, 2019 at 2:09 PM O'Rouke, Patrick Michael <PMOROUKE@southernco.com> wrote:

> Andrew, here is the document I texted you about last month. Fortunately it's only a couple of pages of text. Since you're probably the most up-to-speed on the current state of shoal bass literature after having gone through academic hazing, I've got a specific request for you. Can you please take a look at the references and 1) make sure I'm not misstating anything in there as far as you're aware (particularly the part where I editorialize a bit on your presence/absence model), and 2) make sure I'm not missing any references that you think need to be in there to bolster the substance of the paper? I don't need a ton of editorial help (unless you've got the time and desire), mostly just a quick check to make sure nothing throws up any red flags right out of the gate.
>
> For context, the plan here is to send this to the core NBBI folks for peer review, and, if the SARP Steering Committee is comfortable with it, have Vance put this out as a NBBI document that generally supports barrier removal and gives people a quick overview of the existing science on the subject.
>
> Thanks a bunch in advance for your help. Hope everything is going well this summer as you transition to the new gig.
>
> Patrick

From:	O"Rouke, Patrick Michael
To:	Kelly Schaeffer
Subject:	FW: Shoal Bass White Paper
Date:	Tuesday, August 18, 2020 10:22:50 AM
Attachments:	Expected Impacts of Barrier Removal on Shoal Bass Micropterus cataractae Within their Native Range_ATedits.docx

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From: Taylor, Andrew <tandret@ostatemail.okstate.edu>
Sent: Tuesday, June 18, 2019 11:54 AM
To: O'Rouke, Patrick Michael <PMOROUKE@southernco.com>
Subject: Re: Shoal Bass White Paper

Hi Patrick,

Here is what I came up with. I edited the section about the distribution models a good bit, mainly for accuracy as it relates to interpreting the modeling exercise and its results. I also added the citation for the published manuscript. Feel free to take or leave the rest.

I understand that there has been a great deal of pushback from local anglers on some of these planned dam removals. I think one thing to consider is that the shoal bass is just one example of a number of riverine species that are impacted negatively by habitat fragmentation. Many of the findings you highlight in your statement are grounded in classic metapopulation dynamics, the extinction vortex, and other fundamental concepts in population ecology and conservation biology. As an angler myself, I can understand the frustration in losing a local "honey hole" for fishing trips. What we can't lose sight of is the bigger picture of conserving the species across as much of its native range as possible.

Let me know if I can be of any further help.

Regards,
Andrew

Andrew Taylor, Ph.D.
Senior Research Specialist
Oklahoma State University

The Nature Conservancy
Protecting nature. Preserving life.

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Nature.org/Georgia

June 21, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Submitted via FERC eFiling System and via USPS

RE: The Nature Conservancy in Georgia's comments regarding Georgia Power's study plans nnder its application to surrender the Langdale (P-2341-033) and Riverview (P-2350-025) Projects

Dear Secretary Bose,

We appreciate the opportunity to review and comment as the Federal Energy Regulatory Commission (FERC) evaluates Georgia Power's application to surrender the Langdale and Riverview hydropower projects on the Chattahoochee River.

The Nature Conservancy (Conservancy) is a science-based conservation organization working in all 50 states and 70 countries to 'conserve the lands and waters on which all life depends.' We have worked in partnership with regulatory agencies and other non-profits for decades to restore aquatic habitat and hydrologic function in Georgia's rivers and streams. While the impact of hydropower projects can be mitigated somewhat through siting and operational best practices[1] it is essential that we properly assess the role of hydropower in providing low carbon, low cost, low impact power where better alternatives may exist[2].

The power generating units at the Langdale and Riverview Projects have not been operable since 2009; therefore, the benefits of the dam structures have not been realized for a decade, while their impacts on aquatic habitat and hydrologic function in the Chattahoochee River remained. The Conservancy joins with many other regulatory agencies[3], nongovernmental organizations, academic researchers, and corporations in advocating for the removal of obsolete barriers as "an effective approach to restoring river and stream structure, functions, and dynamics."

1. **The Conservancy supports the surrender of the Langdale and Riverview hydropower licenses prior to the end of their license terms aud the eventual removal of these barriers, aloug with the Crow Hop diversion dam.** The Conservancy would support retention of some elements of the in-stream structures for cultural and historic purposes if reasonable, feasible, and safe.

[1] Opperman et al. 2015. https://www.nature.org/content/dam/tnc/nature/en/documents/power-of-rivers-report.pdf
[2] Opperman et al. 2019. https://www.nature.org/en-us/explore/newsroom/wwf-tnc-free-flowing-rivers/
[3] U.S. Army Corps of Engineers. 2018. https://www.army.mil/article/211916/assistant_secretary_of_the_army_for_civil_works_announces_regulatory_guidance_letter_18_01

2. **The Conservancy supports the scope of the study plan, tasks and schedule. In addition the Conservancy has the following recommendations on three aspects of the study plan:**

   a. Hydraulic & Hydrologic (H&H) Modeling
      i. The applicant should include a visual rendering of the river post de-commissioning and structural removal, using the H&H results to the extent possible. This will provide community members concerned with the loss of river access with a vision for the future of this section of the Chattahoochee River. Commonly heard misconceptions about removing low-head dams have included statements that it will "dry up the river," there will be a loss of flood protection, or unsightly mudflats will be present along the exposed shoreline for years.
         a) Example: https://www.americanrivers.org/2018/06/now-is-the-time-to-restore-the-mississippi-river-gorge/

   b. Water Quality (WQ) Study
      i. This portion of the study must address the quantity, quality and composition of the sediment contained in the reservoir area above each structure. As noted by the Chattahoochee Riverkeeper in their comment letter dated March 4, 2019:

> "The Eagle and Phenix Mill Dam was the first major dam built across the Chattahoochee River in 1834 before significant land disturbing activity began in the upper Chattahoochee River basin. This could explain why there was little sediment discovered during the structure's removal in 2013. Langdale was the second structure constructed in the region in 1860, followed by North Highlands (1900), City Mills (1900) and Riverview (1902). Significant sediment flows in the region would have remained high until 1975 when West Point Dam was constructed. Given this timeline, the age of these structures, and the agricultural history of the region, it is plausible that there may be more legacy sediment than anticipated behind the structures Georgia Power proposes to remove."

Considering the long and intensely industrial history of the Columbus riverfront and decades of military training activities at Fort Benning, it also seems plausible that legacy contaminants in the sediment are present and may require remediation prior to removal of these structures. Refer to Section 404 of the Clean Water Act as it relates to the removal of obsolete dams[4] and the Advisory Committee on Water Information Subcommittee on Sedimentation's Dam Removal Analysis Guidelines for Sediment[5].

   c. Shoal Bass Literature Review Study
      i. The Conservancy supports the study and methodology proposed. The Native Black Bass Initiative (NBBI) since 2010 has worked to conserve and restore regionally-endemic black bass populations through a collaborative partnership of local, state, and federal agencies; universities; nongovernmental organizations;

[4] U.S. EPA Office of Water. 2016. https://www.epa.gov/cwa-404/frequent-questions-removal-obsolete-dams
[5] U.S. Department of the Interior. 2017. https://acwi.gov/sos/pubs/dam_removal_analysis_guidelines_for_sos_final_vote_2017_12_22_508.pdf

and corporations. The NBBI has gathered the most comprehensive information base on the genetics, life history, habitat requirements, distribution, and threats to native southeastern black bass including Shoal Bass[6].

ii. In addition, the conservancy recommends that a step be included to incorporate the results of the H&H model to inform the study report findings. In other words, the applicant should consult with members of the NBBI to provide an assessment of the suitability of in-stream habitats as modeled by the H&H Study to determine the potential impact on Shoal Bass population, distribution and availability as a target for game fishing in this section of the river.

The Nature Conservancy is grateful for this opportunity to provide input on Georgia Power's application to surrender the Langdale and Riverview hydropower projects on the Chattahoochee River, and we look forward to continued partnership opportunities with the Federal Energy Regulatory Commission to mitigate the impacts of hydropower operations in the Chattahoochee River and other river systems in Georgia.

Sincerely,

Sara J. Gottlieb
Director of Freshwater Science & Strategy, Georgia Chapter

[6] Birdsong et al. 2015. https://www.researchgate.net/publication/275354943_Native_Black_Bass_Initiative_Implementing_watershed-scale_approaches_to_conservation_of_endemic_black_bass_and_other_native_fishes_in_the_southern_United_States

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
WILDLIFE RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

RUSTY GARRISON
DIRECTOR

June 24, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

RE: Comments on Georgia Power Company (GPC) Response to Additional Information Request and Proposed Study Plan (May 2019) Langdale Project, FERC # 2341 and Riverview Project FERC # 2350

Dear Secretary Bose:

The Georgia Department of Natural Resources, Wildlife Resources Division (WRD) Fisheries Section has reviewed Power Company (GPC) Response to Additional Information Request and Proposed Study Plan (May 2019) Langdale Project, FERC # 2341 and Riverview Project FERC # 2350. In our February 27, 2019 comment letter, we pledged support for the proposed studies outlined in GPC Notice of Application for Surrender of License, Soliciting Comments, Motions to Intervene and Protests, Langdale Project, FERC # 2341 and Riverview Project FERC # 2350.

Georgia Power has since proposed to develop a 'white paper', based on literature review and consultation with resources experts, discussing the potential effects dam removal on Shoal Bass (*Micropterus cataractae*). As noted in the study proposal, significant Shoal Bass research has been conducted since its formal description in 1999. We expect that distilling this research into a single, comprehensive, 'white paper' should adequately inform the dam removal process.

Georgia Power remains in consultation with WRD regarding the decommission and removal of these projects and we support the proposed studies and actions. The removal of these projects is expected to restore connectivity and riverine characteristics in this reach of the Chattahoochee River benefiting fish, wildlife and aquatic resources. The WRD will continue to engage in this process, evaluate study results to better understand the potential range of conditions resulting from this project, provide substantive comment and request additional studies, as needed.

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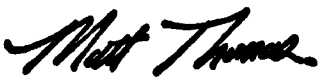
We appreciate the opportunity to comment on the proposal and look forward to continued consultation with Georgia Power and other stakeholders as this process moves ahead. If additional information is needed, please contact Thom Litts (thom.litts@dnr.ga.gov).

Sincerely,



Matt Thomas
Chief

cc. Jon Ambrose
Steve Schleiger

Chris Manganiello, Atlanta, GA.
June 26, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Submitted via FERC eFiling System

RE: COMMENT regarding Georgia Power Companyâ€™s Proposed Study Plan for Langdale and Riverview Hydroelectric Project Numbers 2341-033 & 2350-025

Dear Secretary Bose,

Chattahoochee Riverkeeper appreciates the opportunity to file comments in response to the Georgia Power Companyâ€™s request for comments on the Proposed Study Plan for Langdale and Riverview Hydroelectric Project Numbers 2341 & 2350, dated May 2019.

Established in 1994, Chattahoochee Riverkeeper (CRK) is an environmental advocacy and education organization with more than 8,600 members dedicated solely to making the Chattahoochee River a sustainable resource for the five million people who depend on it. Our mission is to advocate and secure the protection and stewardship of the Chattahoochee River, its lakes, tributaries, and watershed, in order to restore and preserve their ecological health for the people and wildlife that depend on the river system.

Hydraulic and Hydrologic Modeling Plan
CRK looks forward to reviewing the results of the Hydraulic and Hydrologic Modeling Plan.
Ensuring that that there is enough flow in the river for municipal water supply and wastewater assimilation is critically important.

CRK understands that the projects are run of river dams, and that West Point Damâ€™s discharges drive the overall volume of flow in this stretch of river. However, CRK believes removing parts or all of the dams will alter the velocity, duration, and timing of water flow through the project areas.

The proposed barrier removals may result in a more-flashy and less regular stream flow that could be a problem for municipalitiesâ€™ raw water supply withdrawal points and the East Alabama Water, Sewer and Fire Protection Districtâ€™s wastewater discharge. There are other wastewater dischargesâ€”including West Point (Ga.), Lanett (Al.), and inflow from Long Cane Creek (which supports multiple wastewater discharges in Georgia)â€”that must also be considered when evaluating comprehensive assimilative capacity for this stretch of the Chattahoochee River.

In the Methodology section, please explain why some dams would be partially or entirely removed in some scenarios but not in others.

Shoal Bass Literature Review
CRK recognizes that barrier removal and the constructed whitewater course in Columbus, Georgia has not improved aquatic connectivity for shoal bass. However, because the Georgia Power Companyâ€™s proposed removal will ultimately result in a natural streambed (as opposed to a manufactured streambed), CRK anticipates improved aquatic function. The proposed removal could create an 11-mile stretch of river shoal habitat. Georgia Power should make shoal bass habitat restoration a priority in the section of the Chattahoochee River.

Water Quality Plan
The USACE Clean Water Action Section 404 permitting and Section 401 Water Quality Certification processes are critical steps for addressing public and agency concerns about the nature, volume, and other characteristics of legacy sediment contained in the project areas. In August 2016, stakeholders and regulatory staff from the Savannah District, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the Georgia Environmental Protection Division discussed the new Nationwide Permit A for low head dam removal. Regulatory staff expressed specific concern about legacy sediment as one reason for not developing regional conditions for or immediately implementing Nationwide Permit A. Instead, the Savannah District ultimately did not adopt NWP-A, but rescinded NWP-A for five years.

The Eagle and Phenix Mill Dam was the first major dam built across the Chattahoochee River in 1834 before significant land disturbing activity began in the upper Chattahoochee River basin. This could explain why there was little sediment discovered during the structureâ€™s removal in 2013. Langdale was the second structure constructed in the region in 1860, followed

by North Highlands (1900), City Mills (1900) and Riverview (1902). Significant sediment flows in the region would have remained high until 1975 when West Point Dam was constructed. Given this timeline, the age of these structures, and the agricultural history of the region, it is plausible that there may be more legacy sediment than anticipated behind the structures Georgia Power proposes to remove.

Cultural Resources Plan
CRK continues to support the complete or partial removal of the three dams and the Riverview Powerhouse (P-2350-025), and the intent to repurpose the Langdale Powerhouse (P-2341-033). CRK would support retention of some elements of the dams or other properties for cultural and historic purposes if reasonable, feasible, and safe. Will underwater surveys (for example, divers) be used to evaluate the damâ€™s physical condition?

If you have any questions, please do not hesitate to contact us.

Sincerely,
/JU/
Jason Ulseth
Riverkeeper
404.352.9828
julseth@chattahoochee.org

From:	O"Rouke, Patrick Michael
To:	Kelly Schaeffer
Subject:	FW: Shoal bass white bass
Date:	Tuesday, August 18, 2020 10:24:20 AM
Attachments:	Expected Impacts of Barrier Removal on Shoal Bass Micropterus cataractae Within their Native Range_V2.docx

Here are the comments from the former Chief of Fisheries at Georgia WRD on this document.

From: Thomas, Matt <Matt.Thomas@dnr.ga.gov>
Sent: Friday, June 28, 2019 10:36 AM
To: Slaughter, Joe Ernest <JESLAUGH@southernco.com>
Cc: O'Rouke, Patrick Michael <PMOROUKE@southernco.com>
Subject: Shoal bass white bass

Thanks for providing the shoal bass paper. Overall looks good. Thom and I reviewed and a few minor suggestions for consideration are on the attached.

Thanks, Matt

Hey,

Attached is the whitepaper that the NBBI is working on to help answer some of the public questions about benefits to shoal bass. Wanted you to take a look at it and make any comments you see fit, particularly about the overall tone and direction.

Let us know what you think. Thanks!

Joey

From: O"Rouke, Patrick Michael
To: Kelly Schaeffer
Subject: FW: Shoal Bass Summary-Request for Peer Review
Date: Tuesday, August 18, 2020 10:28:58 AM

This is correspondence I had with Vance Crain from NBBI. I think the original email I sent to the agency folks on June 27 (seen below) has disappeared from our server, as I can't find it.

From: O'Rouke, Patrick Michael
Sent: Thursday, August 29, 2019 3:18 PM
To: Vance Crain <vance@southeastaquatics.net>
Cc: Slaughter, Joe Ernest <JESLAUGH@southernco.com>
Subject: RE: Shoal Bass Summary-Request for Peer Review

Hey, following back up on this…I got a few minor edits from Matt Thomas and Thom Litts that I'll work in. Never heard anything back from Steve Ryder or Andy Strickland nor were any edits provided. Brent Hess got me a copy of a flow study on the Ocmulgee that referenced shoal bass, and I'll probably integrate that with one of Matt/Thom's comments to bolster the species as a fluvial specialist.

Copying Joey to see what we may want to do here as a next step. We've got a little more time than initially expected as we've pushed our meeting back later in the fall due to some FERC questions.

Patrick

From: Vance Crain <vance@southeastaquatics.net>
Sent: Friday, July 26, 2019 8:20 AM
To: O'Rouke, Patrick Michael <PMOROUKE@southernco.com>
Subject: Re: Shoal Bass Summary-Request for Peer Review

Hey Patrick, I'm so sorry that this slipped away from me. We had a baby come along and I'm just now getting back up to speed. Given I am not the species expert like the others in this email I am hoping I didn't mess you up too much.

I was able to skim the document yesterday, but when I tried to open it again this morning it said I no longer had permission. In regards to the citations and missing information, I didn't have any major comments based on my first scan. We have already discussed the organization feedback question, and as long as our reps are good with it then we should be good. I think it's well written, sticks to the facts, and leaves out anything that could be controversial. If you want me to take another look please let me know, and again I apologize for missing this.

Thank you,
Vance

On Thu, Jun 27, 2019 at 3:58 PM O'Rouke, Patrick Michael <PMOROUKE@southernco.com> wrote:

> Folks:
>
> If you'll recall, I talked about this concept at the NBBI meeting in Tallahassee last month. First, some background/recap.
>
> One of the major environmental reasons that Georgia Power proposed the surrender and expected removal of our Langdale and Riverview projects is the expected benefit it would have on shoal bass populations in that section of the Chattahoochee River. Since filing with FERC, our dockets have received a surprising number of comments from anglers disputing that thinking and calling into question the science behind it. In an effort to respond, it was quickly evident that despite a lot of research done on shoal bass in the past, particularly over the last decade, there wasn't a single place to point them to help synthesize the existing science in this area. Beyond just this particular FERC process, I think that shows a need for some sort of document that can be given to regulators (FERC, USACOE, etc.) or stakeholders to explain the issues succinctly yet scientifically.
>
> The link below will take you to a draft document that is intended to provide a synthesis of the existing science around shoal bass and barriers as well as a discussion about the impacts we would expect from removal of those barriers. While this document would ultimately be filed on the FERC docket for Langdale and Riverview proceedings, I think you'll see that it is written to apply to a number of situations, from small culverts to FERC-regulated dams and everything in between.
>
> https://soco365-

my.sharepoint.com:443/:w:/g/personal/pmorouke_southernco_com/EVQmMHe_dixNs3W5JwNgJuABfezuOCvmi8I2nYD_RD7xog?e=j4Vumh [soco365-my.sharepoint.com]

My request to the four of you is to provide a basic peer/agency review of the document. It's short (two and a half pages plus citations) and hopefully direct, so it shouldn't take long to review. Please let me know if you think this is something you could tackle within the next few weeks. When we can get this to a point where everyone feels comfortable, the revised version will then be forwarded to the SARP steering committee to decide whether or not this is something the NBBI can put out as a white paper and would ultimately be available for reference. The goal isn't to get to something that would be published in Transactions or NAJFM, but just to pull everything together in one place to help others who aren't as immersed in the black bass literature as we are to understand the reason anyone would pursue barrier removal in the name of shoal bass. I think the three biggest things to keep in mind while reviewing are 1) is anything inaccurately cited or are any statements unsupported?; 2) are any sources or other information that you're aware of missing?; 3) is there anything in there that would be problematic for your respective agency?

Thanks in advance for your help. I'm fairly certain the cloud link will work for everyone, but please let me know if you're able to open it since y'all are outside of my corporate organization. Click "Open in Word" in the center of the top gray ribbon, and then turn on track changes. When you close out, it will automatically save everything back to the cloud. If this doesn't work, I'll send the document via attachment and consolidate reviews, but this should make it easier for us to collaborate. Hopefully you'll have as much fun as I did with this...it's fairly awesome to work on a literature review where you know so many of the people you're citing and have had a small hand in some of the foundational science for a species.

Thank you,
Patrick

Patrick O'Rouke
Fisheries Biologist
Georgia Power

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Atlanta, GA 30308
(404) 506-5025 (Office)
(470) 426-5322 (Cell)

--
Vance Crain
NBBI/Watershed Coordinator
Southeast Aquatic Resources Partnership
http://southeastaquatics.net [southeastaquatics.net]
757-292-6718

Langdale and Riverview Hydroelectric Projects
FERC Projects #2341 and #2350

Communication Date:

10/10/19

Communication Type *(telephone, email, in-person meeting, other):*

In-person (Chattahoochee River Conservancy office – Spencer Environmental Center)

List and attach pertinent written correspondence:

(i.e. letter, fax, meeting notes/handouts, printed materials, etc.)

Printed materials and general discussion

List persons attending from Southern Company/Georgia Power:

Joey Slaughter – GPC

Dawson Ingram – GPC

List organization name and persons attending from other organization:

Chattahoochee Rver Conservancy – Henry Jackson; Auburn University – Steve Sammons; Adjacent Landowner/Local Fisherman – Kendall Andrews; Local Fisherman – Chris Funk.

Subject:

Review and discuss the Langdale and Riverview Decomissiong Projects; H&H surveying and modeling activities; discuss fishing and access concerns.

Comments/Discussions/Requests:

- Joey opened the meeting with introductions, provided a project overview, discussed the efforts taken to date, and then opened discussion with the attendees.
- Kendall Andrews asked about the 2 rounds of surveys. Joey explained that the surveys were for modeling purposes and the second round was for more detailed survey data.
- Kendall Andrews also asked about the status of the December filing and it was acknowledged that the final decommissioning plan was still a work in progress and that more discussion/meetings with landowners and other agencies would take place before finalizing the plan.
- Kendall Andrews asked about the public meeting delay. It was explained that this was due to the additional work on the modeling referenced earlier.

- Kendall Andrews was concerned about his property value, especially if he loses boat access to the river.
- Kendall Andrews and Chris Funk were concerned about negatively impacting the Shoal Bass population contained between Riverview and Langdale Dams.
- Chris Funk asked about sedimentation impacts from the removal on the dams.
- Kendall Andrews asked to be included on future stakeholder communication.

Form Completed By:

Dawson Ingram

Chris Manganiello, Atlanta, GA.
May 1, 2020
Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Submitted via FERC eFiling System

RE: COMMENT regarding Georgia Power Companyâ€™s February 28, 2020 License Surrender Filings re Langdale and Riverview Hydroelectric Project Numbers 2341-033 & 2350-025

Dear Secretary Bose,

Chattahoochee Riverkeeper appreciates the opportunity to file comments in response to the Georgia Power Companyâ€™s (Georgia Power) request for comments on the Progress Report, Draft Potential Effects of Dam Removal on Shoal Bass Study Report, and Draft Water Quality Report, dated February 28, 2020. We are submitting these comments despite Georgia Powerâ€™s cancellation due to COVID-19 social distancing measures of an April 1 public meeting to discuss this information. We contacted Georgia Powerâ€™s project contact twice by email (April 27) and telephone (April 29) to determine if the May 1 deadline was a hard deadline, and did we not get a response.

Established in 1994, Chattahoochee Riverkeeper (CRK) is an environmental advocacy and education organization with more than 10,000 members dedicated solely to making the Chattahoochee River a sustainable resource for the five million people who depend on it. Our mission is to advocate and secure the protection and stewardship of the Chattahoochee River, its lakes, tributaries, and watershed, in order to restore and preserve their ecological health for the people and wildlife that depend on the river system.

Progress Report
CRK looks forward to reading a draft of the Hydraulics and Hydrology Study to learn more about why some dams would be partially or entirely removed in some scenarios but not in others.

CRK is pleased to learn that the Cultural Resources Study will be â€œcompleted prior to and included with the Dam Decommissioning Plan filing.â€ [page 6-2]

Draft Potential Effects of Dam Removal on Shoal Bass Study Report
CRK agrees that dam removal can produce enhanced habitat. Georgia Powerâ€™s proposed removal will ultimately result in a natural streambed as opposed to a manufactured streambed as found downstream in some areas that were part of dam removal in the Columbus area. CRK anticipates improved aquatic function because the proposed removal will create an 11-mile stretch of natural river shoal habitat with connectivity to the Flat Shoals Creek tributary, which is known to support shoal bass populations.

As noted in the Draft Report, â€œIf the impoundment covers historic spawning habitat, benefits can be two-fold in that spawning shoals are restored with appropriate flows while access is then provided to isolated, adjacent populations downstream of a dam....Even in case where population equilibrium does not increase, population stability over multiple generations is likely to increase.â€ [Appendix A, no page number]

The Draft Report indicates removal may be good for adult shoal bass by providing optimal depth and velocity conditions. However, removal may not be so beneficial for young-of-year shoal bass because the main channelâ€™s depth may be optimal and the velocity may not be. Georgia Power asserts â€œRemoval of the Projectsâ€™ dams will result in a net increase in suitable habitat for Shoal Bass.â€ [page 11] We agree that overall removal will enhance connectivity between the newly exposed shoals and tributaries.

CRK agrees â€œit is critical that barrier removal projects do not impede passage of fish due to excessive velocities at newly-established points of connectivity.â€ According to a single post-removal assessment of the Eagle and Phenix dam, barrier removal and the constructed whitewater course in Columbus, Georgia may not have improved aquatic connectivity for shoal bass in the main channel, see: Steven M. Sammons (Auburn University) for Uptown Columbus, Inc., Responses of Fish Assemblages to Dam Removal on the Chattahoochee River, Georgia (September 13, 2017). Anecdotal stories from anglers indicate shoal bass and other species are present in this section of the river and have benefited from the damsâ€™ removal. Clearly more study and evaluation are necessary to determine the long-term implications of barrier removal for shoal bass and other species.

CRK agrees that barrier removal projects â€œshould be pursued in a cost-effective approach that prioritizes species recovery both across the range and within priority sub-basins.â€ However, this Draft Report does not indicate how Georgia Power will advance this approach or what specific tasks will take place to advance shoal bass habitat beyond removal of the Langdale and Riverview barriers. For example, is there a plan or schedule to re-stock shoal bass in the affected areas?

Draft Water Quality Report
CRK is pleased to learn that the Draft Water Quality Report indicates:

If the run-of-river dams are removed, â€œthe resulting lower water levels and higher water velocities in the affected reach of the Chattahoochee River would provide an alternative means of physical aeration as the water passes through the exposed shoals,â€ [9] and

That â€œdecommissioning and removal of the Projects will not impact theâ€ the East Alabama Lower Valley Wastewater Treatment Plant Valley WWTP permitted effluent discharge.â€ [14]

CRK remains concerned that sedimentation surveys upstream of the Langdale and Riverview barriers have not been, and may not be, conducted. When the Eagle and Phenix Mill Dam and City Mills Dam were removed, it was assumed that little sediment would be released. However, there are concerns that sediment transport did occur from upstream to a downstream area on river right (the west bank in Alabama) below the former Eagle and Phenix Dam.

What is Georgia Powerâ€™s justification for not conducting these sedimentation surveys and/or evaluations prior to removal of the Langdale and Riverview dams?

If you have any questions, please do not hesitate to contact us.

Sincerely,
/JU/
Jason Ulseth
Chattahoochee Riverkeeper

APPENDIX B

GEORGIA POWER BRIEF: EXPECTED OUTCOMES OF BARRIER REMOVAL ON SHOAL BASS (*MICROPTERUS CATARACTAE*) WITHIN THEIR NATIVE RANGE

Expected Outcomes of Barrier Removal on Shoal Bass *Micropterus cataractae* Within their Native Range

The removal of barriers to migration is one of the actions that resource managers have commonly focused on to further Shoal Bass *Micropterus cataractae* conservation. This briefing is intended to summarize existing research and literature to approximate expected outcomes from removals of dams, culverts, and other barriers to fish passage on Shoal Bass populations. While research needs remain regarding the natural history and habitat needs of the species, recent research helps shine light on the potential for future barrier removal projects.

Background

The Shoal Bass is a riverine, freshwater fish species endemic to the Apalachicola-Chattahoochee-Flint (ACF) river basin in Georgia, Alabama, and Florida (Williams and Burgess 1999). This fish is typically found in mainstem rivers and their larger tributaries (Ramsey 1975). True to its name, the Shoal Bass typically prefers swift, rocky habitat when available (Williams and Burgess 1999; Wheeler and Allen 2003; Stormer and Maceina 2009; Gocklowski et al. 2013; Sammons et al. 2015). Seasonal habitat use varies, with adult Shoal Bass often congregating in large shoal complexes to spawn in spring (Gocklowski et al. 2013; Bitz et al. 2015; Sammons 2015; Cottrell 2018), then dispersing to diverse habitats, including coastal plain river segments with little, if any, shoal habitat (Sammons 2015).

The Shoal Bass is a popular sportfish across its range (Taylor and Peterson 2014; Sammons et al. 2015), but threats from multiple factors include habitat fragmentation (Dakin et al. 2015; Sammons and Early 2015; Taylor et al. 2018a) and degradation (e.g. sediment, Walser and Bart 1999; temperature, Porta 2011; and flow, Stormer and Maceina 2009) as well as hybridization with other *Micropterus* species (Dakin et al. 2015; Alvarez et al. 2015; Taylor et al. 2018b). Because of these factors, the Shoal Bass is considered a species of conservation concern by multiple groups. The State of Georgia considers the Shoal Bass both a High Priority Species and a Species of Concern (Georgia Department of Natural Resources 2015). Stormer and Maceina (2008) found declining abundance in three of four known populations in Alabama from 2005-2007. The state of Alabama now ranks Shoal Bass as a Level 1 Species of Greatest Conservation Need, with only one known population remaining (Alabama Department of Conservation and Natural Resources 2015). However, recent sampling efforts suggest that this population may now also be extirpated in Uchee Creek (AL) (S. Sammons, personal communication). The International Union for Conservation of Nature Red List considers them "Near Threatened," while the Endangered

Species Committee of the American Fisheries Society considers it a species of special concern (Jelks et al. 2008). However, the shoal bass currently is not listed or petitioned for federal protection under the Endangered Species Act (ESA). Projects which enhance connectivity such as dam removals could help prevent a future ESA listing.

Prior to European settlement, the ACF basin was a free-flowing, interconnected system. The presence of Shoal Bass from mountainous reaches of the Upper Chattahoochee through the Piedmont, across the fall line, and into the Coastal Plain suggests a high degree of connectivity, though there do appear to be some natural genetic differences among populations across the range (Taylor et al. 2018c). Shoal Bass spawning migrations as far as 197 km (122 mi) have been recorded in the unregulated section of the Flint River (Sammons 2015), though these can be much shorter in sections of the basin with reduced effective distance due to dams or reservoirs (Stormer and Maceina 2009; Sammons and Early 2015; Cottrell 2018). A species distribution modeling exercise suggested that the distance of available free-flowing, interconnected stream length (comprised of third-order streams and larger) was important in explaining the current distribution of Shoal Bass, and that interconnected reaches (i.e., cumulative miles of all connected tributaries) of less than approximately 100 km rapidly lost their suitability for Shoal Bass presence (Taylor et al. 2018a). Fragmented tributary streams showed the greatest loss in Shoal Bass suitability, likely because longer free-flowing fragments connected to mainstem rivers confer access to critical habitats that are unevenly distributed within stream systems (e.g., spawning shoals or drought refugia; Taylor et al. 2018a). In stream segments with little effective reach, inbreeding depression and random genetic drift can result (Dakin et al. 2015; Taylor et al. 2018c), perhaps lowering fitness of remaining individuals. Where barriers to fish passage block smaller tributary populations from access to mainstem refugia, increased variability in year class strength (Taylor 2017) and high mortality during drought (Stormer and Maceina 2009) have also been documented. It is important to note, however, that Taylor et al. (2018a) did not differentiate between stream sizes in their analysis, and it is likely that connectivity to large, mainstem rivers with higher discharge could reduce the effective reach threshold at which shoal bass populations would reach sustainability/stability.

Shoal bass are a fluvial specialist, requiring swift water and rocky outcrops throughout their life cycles (Williams and Burgess 2019; Taylor and Peterson 2013). Shoal Bass do not appear to prefer to utilize lentic habitats (e.g., reservoirs and backwaters). Sammons and Early (2015) found that fish from a large tributary of the Chattahoochee River entered the mainstem but remained immediately below a dam where flow was present rather than

entering a downstream reservoir. When Shoal Bass are released into reservoirs (e.g., following fishing tournaments), they typically return to lotic environments upstream of the reservoir (Taylor and Peterson 2015), and Ingram et al. (2013) found that survival of translocated shoal bass was 92% after 90 days, with most fish returning upstream to flowing portions of the headwaters river. Shoal Bass populations exist within some small impoundments on the Middle Chattahoochee River, though each of these systems typically receives some flow due to their high inflow to storage ratios (J. Slaughter, personal communication) in comparison with larger impoundments. In contrast, populations of Shoal Bass are abundant and concentrated during spawning in the unregulated Upper Flint River (Sammons and Goclowski 2012) and populations in unregulated reaches above Lake Lanier on the Chattahoochee and Chestatee Rivers appear stable (Taylor 2017). In the Upper Flint and Upper Chattahoochee Rivers, professional guides offer Shoal Bass trips, supporting the presence of healthy fisheries.

Discussion

Removal of barriers should generally benefit shoal bass populations for multiple reasons. Providing fish passage allows the effective reach available to a population to increase, which can open up access to quality habitat and resolve genetic diversity concerns across currently isolated populations. Therefore, the removal of barriers that open up the highest amount of quality habitat should be prioritized. In areas where non-native congener species (e.g., Alabama Bass *Micropterus henshalli*) exist below a barrier but not above it, however, managers should consider the potential impacts of hybridization and/or interspecific competition on shoal bass as a factor. Removal of barriers can also make populations more resilient in the face of environmental stressors by offering refugia during periods of drought or due to habitat degradation in a localized area as a result of land use impacts, particularly if access to mainstem rivers that are not as susceptible to critical reductions in flow is made available. This may include the restoration of impounded reaches to more suitable, flowing habitat that shoal bass are more likely to utilize.

It is critical that barrier removal projects do not impede passage of fish due to excessive velocities at newly-established points of connectivity. While no published literature exists on the critical swim velocities of Shoal Bass, several studies have looked at similar criteria for Smallmouth Bass *Micropterus dolomieu*. Published U_{crit} values for various sizes of Smallmouth Bass range from 63 to 117 cm/s (Bunt et al. 1999; Cooke and Bunt 2001; Peake 2004). Peake (2004) also studied the ability of Smallmouth Bass to pass through culvert-style raceways and found that a high proportion of individuals (82-95%) were able

to make complete ascents at velocities ranging from 40-120 cm/s. Smallmouth Bass are known to use riverine habitats throughout their range, and therefore should stand as a suitable, conservative proxy for Shoal Bass critical swim velocities.

Restoration of impounded reaches can also increase access to historic habitat. While removal of larger dams that create these impoundments is not always a feasible option, where possible, it could potentially increase the biological carrying capacity of a basin. If the impoundment covers historic spawning habitat, benefits can be two-fold in that spawning shoals are restored with appropriate flows while access is then provided to isolated, adjacent populations downstream of a dam. For instance, removal of a low-head dam on the Milwaukee River resulted in increased abundance of native smallmouth bass and decreased abundance of invasive common carp, not only within the footprint of the former reservoir, but also in adjacent study reaches (Kanehl et al. 1997). Even in cases where population equilibrium does not increase, population stability over multiple generations is likely to increase.

Barrier removal projects should always consider the biological needs of the species in concern and be based in sound science. If removals can ameliorate known threats to Shoal Bass populations (e.g., isolation, impoundment, habitat degradation, genetic isolation or hydridization) without creating a larger problem due to one of these threats, these projects should be pursued in a cost-effective approach that prioritizes species recovery both across the range and within priority sub-basins.

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