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September 13, 2019

Ms. Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
Mail Code PJ-12.3
888 First Street, NE
Washington, DC 20426

Re: Conservation Groups' Response to APC's Response to FERC's Request for Additional Information

Dear Ms. Bose:

Below, please find the Alabama Rivers Alliance, Coosa Riverkeeper, and American Rivers' response to Alabama Power's April 8, 2019 Response to FERC's January 8, 2019 Request for Additional Information.

Last summer, the D.C. Circuit Court vacated the license for the Alabama Power Coosa Hydroelectric relicensing project (project No. 2146-111) in *Am. Rivers v. Fed. Energy Regulatory Comm'n*. After this decision, FERC agreed to complete an Environmental Impact Statement (EIS) for the project. FERC issued a final scoping document for this new EIS on January 8, 2019. In April, Alabama Power submitted more recent dissolved oxygen information in response to FERC's request. This scoping document and Alabama Power's dissolved oxygen information highlight the need to reinforce the Court's ruling. Fish passage and dissolved oxygen levels must be sufficiently reviewed.

FERC must adequately study impeded fish passage in the EIS and Biological Opinion. The Court stated that FERC did not take a "hard look" as was required because it failed to reasonably consider the "effects on fish passage." *Am. Rivers v. Fed. Energy Regulatory Comm'n*, 895 F.3d 32, 49 (D.C. Cir. 2018). And the Court was very clear that the lack of fish passage must be studied as an effect. The Court reprimanded,

> While the [Biological] Opinion at least acknowledged dissolved oxygen levels as a potential issue, it largely omitted fish passage and seasonal flows — that is, the effects the lack of fish passage and minimal flow requirements might have on aquatic species — from the effects analysis. *Am. Rivers*, 895 F.3d 32, 47 (D.C. Cir. 2018).

Yet, FERC's final scoping document states, "Because upstream fish passage was not identified by the court as a standalone, project-specific issue needing further analysis, the focus of any new and additional upstream fish passage analysis in the EIS will be included as part of the

cumulative effects analysis."[1] However, the Court did identify fish passage as a standalone issue needing further analysis; it did not discriminate between downstream and upstream fish passage. It simply instructed FERC and Fish and Wildlife to study fish passage as a whole.[2] Studying upstream migration is important at the Coosa because the movements of migrating paddlefish, blue catfish, and striped bass in the lower Coosa Rivers have been documented by Alabama Power.[3] The migrating blue sucker has also been found in the lower parts of the Coosa.[4] We are hopeful that FERC will adequately perform this important study for both upstream and downstream fish passage.

More importantly, fish passage on the Alabama River needs to be thoroughly studied. We appreciate that FERC has expanded the geographic scope to include the ACT River Basin in its entirety, especially since the dams on the Alabama River affect the fisheries on the Coosa.[5] Fish passage on the Alabama will be one of the most significant mitigation measures that will be able to be prescribed by the Fish and Wildlife Service. For the aged populations of mussels in the Coosa that depend on migrating fish for reproduction, significant improvement in passage past dams on the Alabama River is critical. Lock operations and limited fish attraction flows could provide a low-cost option for moving some fishes past Claiborne and Millers Ferry during spring migrations.[6] Additionally, a fish ladder, pool and weir, or fish elevator would be the best option for moving significant numbers of fish upstream in the Alabama River and eventually to the Coosa River. Fish migration on the Alabama is important because the lack thereof affects the cumulative impacts on the fish and fauna on the Coosa.

Based on the academic literature, at least 16 fish species have the potential to benefit with improved Alabama River passage and potential access to the Coosa: Gulf Sturgeon (threatened), Alabama Sturgeon (endangered), Alligator Gar, Alabama Shad (petitioned for federal listing), Skipjack Herring, Striped Bass, Crystal Darter (petitioned for federal listing), Freckled Darter, Southern Walleye, Paddlefish, Quillback, Highfin Carpsucker, Southeastern Blue Sucker, Smallmouth Buffalo, River Redhorse, and White Bass.[7] Multiple species in the list are anadromous, needing inland connection of waterways to spawn. For migration of suckers (Quillback, Highfin Carpsucker, River Redhorse, Southeastern Blue Sucker), the "shoal areas in the Cahaba and Coosa rivers in Mobile Basin...are some of the largest and best-known spawning

[1] FERC, Revised Scoping Document for Coosa, Mitchell Dam, and Jordan Dam Hydroelectric Projects, P-2146, P-82, and P-618, Jan. 8, 2019, at 14.
[2] *Id.* at 47, 49.
[3] Mettee, Maurice; O'Neil, Patrick; Shepard, Thomas; McGregor, Stuart, *Fish Movements and Fish Passage at Claiborne and Millers Ferry Locks and Dams on the Alabama River, Alabama*, Aug. 1, 2005, 2.
[4] Mettee, Maurice; O'Neil, Patrick; Shepard, Thomas; McGregor, Stuart, *Biology, Spawning and Movements of Cycleptus meridionalis in the Lower Alabama River, Alabama,* Southeastern Naturalist, 14(1), 2015, 147, 166.
[5] Scoping Document, 15.
[6] Mettee, Maurice; O'Neil, Patrick; Shepard, Thomas; McGregor, Stuart, *Fish Movements and Fish Passage at Claiborne and Millers Ferry Locks and Dams on the Alabama River*, Alabama, Aug. 1, 2005.
[7] *Id.* at 1, 2; Metttee, Maurice; O'Neil, Patrick; Rider, Steven, *Paddlefish Movements in the Lower Mobile River Basin, Alabama*, American Fisheries Society Symposium 66: 63, 75 (2009).

areas in Alabama."[8] Additionally, River Redhorse for instance is found below Millers Ferry, but has been observed "spawning in the lower Coosa River".[9] It's been reported that "Fish passage at Claiborne and Millers Ferry would likely increase the ability of [species] to reach spawning habitats in the upstream 165 miles of the Alabama River and perhaps the lower Coosa and Tallapoosa Rivers."[10]

These species are at risk with nine found around the Corps' Lock and Dams in the Alabama River considered imperiled by the American Fisheries Society.[11] Eight of these species have a "global priority" conservation ranking according to the International Union for the Conservation of Nature; four are critically imperiled or imperiled according to the State; six are on the State "watch list; and three are the state's top priority" for conservation.[12] Likely, there are other species that could benefit from increased waterway connection. All species that would benefit from better access to spawning habitat should be studied to understand the full effects of the dams.

[8] *Mettee*, Maurice, O'Neil, Patrick, Pierson, Malcom, Fishes of Alabama and the Mobile Basin (1996), p. 320.
[9] *Id.* at 359.
[10] Mettee, Maurice; O'Neil, Patrick; Shepard, Thomas; McGregor, Stuart, *Fish Movements and Fish Passage at Claiborne and Millers Ferry Locks and Dams on the Alabama River*, Alabama, Aug. 1, 2005, at 23.
[11] Jelks, H.L. et al., *Conservation Status of Imperiled North American Freshwater and Diadromous Fishes*, 33 Fisheries, (July 2011) 372, 387-407, https://prd-wret.s3-us-west-2.amazonaws.com/assets/palladium/production/s3fs-public/atoms/files/AFSESCFish3308.pdf.
[12] Alabama Department of Conservation and Natural Resources, Alabama's Wildlife Action Plan 2015-2025 (2015), 407-23, https://www.outdooralabama.com/sites/default/files/Research/SWCS/AL_SWAP_FINAL%20June2017.pdf.

Species	Federal Legal status	State Protection (SP)	State Rank[13]	AL Species of Greatest Conservation Need[14]	American Fisheries Society Ranking[15]	Global Rank – International Union for the Conservation of Nature[16]
Gulf Sturgeon	Threatened	SP	S1	P2	T (1.2)	G3T2
Alabama Sturgeon	Endangered	SP	S1	P1	E (1,2)	G1
Alligator Gar			Watch list	P3	V (1,2)	G3G4
Alabama Shad	Petitioned	SP	S2	P1	T (1,2)	G2G3
Skipjack Herring			Watch list	P3		
Paddlefish		SP			V (1,2)	G4
Crystal Darter	Petitioned		Watch list	P3	V (1)	G3
Freckled Darter			Watch list	P3	T (1)	G2
Southern Walleye		Game Fish	S3	P1		
Quillback						
Highfin Carpsucker						
S.E. Blue Sucker			Watch list	P3	V (1,4)	G3G4
Smallmouth Buffalo						
River Redhorse						
Striped Bass			Watch list	P3	V (1,4)	
White Bass						

[13] S1 Critically Imperiled - Critically imperiled in Alabama because of extreme rarity (5 or fewer occurrences of very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation from Alabama; S2 Imperiled - Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from Alabama. *Id.* at 438.

[14] P1-Priority 1/Highest Conservation Concern- taxa critically imperiled and at risk of extinction/extirpation because of extreme rarity, restricted distribution, decreasing population trend/population viability problems, and specialized habitat needs/habitat vulnerability. Immediate research and/or conservation action required; P2- Priority 2/High Conservation Concern - taxa imperiled because of three of four of the following: rarity; very limited, disjunct, or peripheral distribution; decreasing population trend/population viability problems; or specialized habitat needs/habitat vulnerability. Timely research and/or conservation action needed; P3-Priority 3/Moderate Conservation Concern - taxa with conservation problems because of insufficient data or because of two of four of the following: small populations; limited, disjunct, or peripheral distribution; decreasing population trend/population viability problems; or specialized habitat needs/habitat vulnerability. Research and/or conservation action recommended. *Id.* at 4.

[15] E-Endangered; T-Threatened; V-Vulnerable; 1-present or threatened destruction, modification, or reduction of a taxon's habitat or range; 2 - over-exploitation for commercial, recreational, scientific, or educational purposes including intentional eradication or indirect impacts of fishing; 4 - other natural or anthropogenic factors that affect a taxon's existence. Jelks at 387.

[16] G1 Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 Imperiled – At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 Vulnerable – At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 Apparently Secure – Uncommon but not rare; some cause for long-term concern due to declines or other factors; G#T# Infraspecific Taxon (trinomial) – The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above for global conservation status ranks. ACDNR, AL Wildlife Action Plan, at 438.

When completing analysis about upstream passage, FERC should pay special attention to the needs of the affected fishes and the potential design of passage; the scientific literature suggests that passage efficiency must be close to 90-100% to properly restore a species.[17] The final EIS must also properly analyze the species affected by fragmentation and evaluate potential solutions that would benefit the project area and mitigate the harm caused by the Coosa project. For example, many species of snails and mussels—that have a migratory host fish—should be studied further when determining the impacts of the project scope. For many of these species the most basic aspects of their biology are unknown, including the effects of modified flows and habitat fragmentation. In addition to the Alabama system, other waterbodies need to be examined for impacts and potential mitigation projects. The Coosa has multiple tributaries that house imperiled species and serve necessary ecological functions, such as Terrapin Creek, which itself has an impoundment suitable for a restoration project.

Fish passage is important as the D.C. Circuit opinion explicitly mentioned the high entrainment rate within the Coosa Project, citing the original Environmental Assessment's estimate that 1.3 million fish are killed in the project's turbines every year. *Am. Rivers*, 895 F.3d 32, 53 (D.C. Cir. 2018). The EIS must properly analyze the existing impacts and proper solutions. From the filings in the docket, it is unclear how FERC and APC are readjusting their studies to more fully identify the extent of entrainment. How will larval and juvenile fish be included in the final number? Are certain species or sizes more at risk than others? The final EIS must give an accurate and updated description of the entrainment rate, for only then can the correct solution be identified. In addition to both upstream and downstream passage, the document should evaluate the costs and benefits of various engineering solutions like entrainment screens; a host of academic literature exists to help guide those analyses.[18] Like fish passage, the EIS must evaluate these engineering alternatives to satisfy the provisions of NEPA.

A sufficient EIS will also properly consider dissolved oxygen levels during nongeneration periods; it must take a "hard look" at the noncompliance data and examine the feasibility of other engineering solutions. Alabama Power Company's April 8, 2019 Response to FERC's Request for Additional Information demonstrates that each dam in the Coosa Project is still plagued by alarmingly low dissolved oxygen (D.O.) levels. That data revealed that levels dropped below 4.0 mg/L on hundreds of occasions—with levels staying below 4.0 mg/L for up to 17-18 hours at a time.[19] Some of these results show D.O. routinely plunged below the lethal levels of 2.0 mg/L and even 1.0 mg/L.[20] While the new aeration systems may have improved D.O. conditions, the data suggests that a significant impact still remains.

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[17] Noonan, Michael; Grant, James; Jackson, Christopher, *A Quantitative Assessment of Fish Passage Efficiency*, 13 Fish and Fisheries 450, 456 (2012).
[18] For an overview, *see* Federal Energy Regulatory Commission, *Preliminary Assessment of Fish Entrainment at Hydropower Projects* (1995).
[19] Accession, 20190408-5198, Alabama Power's Response to the Jan. 8, 2019 Additional Information Request, Answer 11, p. 6, 7, 9, 10.
[20] *Id.* at 4, 5.

Moreover, D.O. is still suboptimal for a large percentage of the time. According to Alabama Power Company, at Logan Martin, "the total percent of time that DO was above 4.0 mg/L increased from 57.7% to 81.6%."[21] On its face, being below 4.0 mg/L for one-fifth of the time is a serious environmental problem, especially given that the state standard is 5.0 mg/L for this type of waterway during nongeneration and for all other industries.[22] The percentage of time that the D.O. dropped below 4.0 mg/L and 5.0 mg/L for the other dams should also be reported. In fact, APC should be required to report actual hourly plots for D.O. for each month in order to fully understand the pattern of the low D.O. levels. Additionally, D.O. should be reported and monitored throughout the year, not just for a few months. Finally, all of this data should be analyzed by a third party.

The final environmental document must consider those lengthy time periods of underperformance at all the dams and consider the feasibility of (1) additional technology, (2) further improvements to the new aeration systems, (3) changes in operations, (4) a new flow regime to improve D.O. conditions at the various dams, and (5) increasing the D.O. standard to 5.0 mg/L. With the understanding that the aeration rings and forebay diffusers at the projects need water flow to increase oxygen levels, special attention should be given to considering a pulsing regime and a continuous minimum flow approach.

The Alabama Rivers Alliance, Coosa Riverkeeper, and American Rivers would appreciate the ability to sit down with FERC, Fish and Wildlife, and Alabama Power so that we can share ideas on potential study topics and mitigation measures. Please feel free to reach out with any questions.

Sincerely,

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Sarah Stokes
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[21] Accession, 20190408-5198, Alabama Power's Response to the Jan. 8, 2019 Additional Information Request, Answer 14, p. 3.
[22] Ala. Admin. Code 335-6-10.09 (5)(e)4.