From: alcondir@aol.com
To: APC Harris Relicensing
Subject: Re: Harris Relicensing - Initial Study Report meeting agenda and call-in details
Date: Monday, May 11, 2020 1:06:09 PM

I am leaving the State so please forward any further communications to Eddie Plemons, our President. His email is eddieplemons@charter.net Thanks.

Jim Howard

-----Original Message-----
From: APC Harris Relicensing <g2apchr@southernco.com>
To: APC Harris Relicensing <g2apchr@southernco.com>
Sent: Mon, Apr 27, 2020 9:51 am
Subject: FW: Harris Relicensing - Initial Study Report meeting agenda and call-in details

Good morning,

Attached is the presentation for tomorrow's Initial Study Report meeting. This presentation can also be found on the relicensing website: www.harrisrelicensing.com [harrisrelicensing.com].

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: APC Harris Relicensing
Sent: Friday, April 24, 2020 10:24 AM
To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Subject: Harris Relicensing - Initial Study Report meeting agenda and call-in details

Good morning

Please join us for the Initial Study Report (ISR) meeting on **April 28, 2020, starting at 9 am central time**. The agenda for the meeting is attached. On Monday April 27th, the presentation will be made available on our website (www.harrisrelicensing.com [harrisrelicensing.com]) and distributed to stakeholders as a pdf.

If you have questions regarding the ISR that you would like Alabama Power to address during the meeting, please send your questions to harrisrelicensing@southernco.com by 4 pm on April 27th. There will also be an opportunity to ask questions during the meeting.

Below is the Skype link and call in instructions. Participating via the Skype link is preferred in order to reduce audio issues. However, if you don't have access to Skype, you can call the number below and follow along with the presentation we'll send out on April 27th.

Join Skype Meeting

To join the ISR Meeting via phone, please call (205) 257-2663 OR (404) 460-0605. At the prompt, enter conference ID 489472 followed by the pound (#) sign.

When you join the call, you will be in the virtual lobby and directed that you are waiting on the leader to admit you. As you are admitted, you will be instructed that you are now joining the meeting and that the meeting has been locked. As soon as everyone has joined, we will conduct a roll call of attendees by organization (for example, I will ask who is on the call from the Alabama Department of Conservation and Natural Resources, etc.). If you do not belong to an organization, you will be given a chance at the end of the roll call to state your name and affiliation. Once the roll call is over, your phone will be muted and the first presentation will begin. As noted above, Alabama Power will take questions following each study review and will unmute participants during that time. Once the phones are unmuted, you will have to press star 6 (*6) in order to be heard.

Please let me know if you have any questions.

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: APC Harris Relicensing

To: "harrisrelicensing@southernco.com"

Bcc: eddieplemons@charter.net; 1942jthompson420@gmail.com; 9sling@charter.net; alcondir@aol.com; allan.creamer@ferc.gov; alpeeple@southernco.com; amanda.fleming@kleinschmidtgroup.com; amanda.mcbride@ahc.alabama.gov; amccartn@blm.gov; ammcvica@southernco.com; amy.silvano@dcnr.alabama.gov; andrew.nix@dcnr.alabama.gov; arsegars@southernco.com; athall@fujifilm.com; aubie84@yahoo.com; awhorton@corblu.com; bart_roby@msn.com; baxterchip@yahoo.com; bboozer6@gmail.com; bdavis081942@gmail.com; beckyrainwater1@yahoo.com; bill_pearson@fws.gov; blacklake20@gmail.com; blm_es_inquiries@blm.gov; bob.stone@smimail.net; bradandsue795@gmail.com; bradfordt71@gmail.com; brian.atkins@adeca.alabama.gov; bruce.bradford@forestry.alabama.gov; bsmith0253@gmail.com; butchjackson60@gmail.com; bwhaley@randolphcountyeda.com; carolbuggknight@hotmail.com; celestine.bryant@actribe.org; cengstrom@centurytel.net; ceo@jcchamber.com; cggoodma@southernco.com; cgnav@uscg.mil; chad@cleburnecountychamber.com; chandlermary937@gmail.com; chiefknight2002@yahoo.com; chimneycove@gmail.com; chris.goodell@kleinschmidtgroup.com; chris.greene@dcnr.alabama.gov; chris.smith@dcnr.alabama.gov; chris@alaudubon.org; chuckdenman@hotmail.com; clark.maria@epa.gov; claychamber@gmail.com; clint.lloyd@auburn.edu; cljohnson@adem.alabama.gov; clowry@alabamarivers.org; cmnix@southernco.com; coetim@aol.com; colin.dinken@kleinschmidtgroup.com; cooper.jamal@epa.gov; coty.brown@alea.gov; craig.litteken@usace.army.mil; crystal.davis@adeca.alabama.gov; crystal.lakewedoweedocks@gmail.com; crystal@hunterbend.com; dalerose120@yahoo.com; damon.abernethy@dcnr.alabama.gov; dbronson@charter.net; dcnr.wffdirector@dcnr.alabama.gov; decker.chris@epa.gov; devridr@auburn.edu; dfarr@randolphcountyalabama.gov; dhayba@usgs.gov; djmoore@adem.alabama.gov; dkanders@southernco.com; dolmoore@southernco.com; donnamat@aol.com; doug.deaton@dcnr.alabama.gov; dpreston@southernco.com; drheinzen@charter.net; ebt.drt@numail.org; eilandfarm@aol.com; el.brannon@yahoo.com; elizabeth-toombs@cherokee.org; emathews@aces.edu; eric.sipes@ahc.alabama.gov; evan.lawrence@dcnr.alabama.gov; evan_collins@fws.gov; eveham75@gmail.com; fal@adem.alabama.gov; fredcanoes@aol.com; gardenergirl04@yahoo.com; garyprice@centurytel.net; gene@wedoweelakehomes.com; georgettraylor@centurylink.net; gerryknight77@gmail.com; gfhorn@southernco.com; gjobsis@americanrivers.org; gld@adem.alabama.gov; glea@wgsarrell.com; gordon.lisa-perras@epa.gov; goxford@centurylink.net; granddadth@windstream.net; harry.merrill47@gmail.com; helen.greer@att.net; henry.mealing@kleinschmidtgroup.com; holliman.daniel@epa.gov; info@aeconline.com; info@tunica.org; inspector_003@yahoo.com; irapar@centurytel.net; irwiner@auburn.edu; j35sullivan@blm.gov; james.e.hathorn.jr@sam.usace.army.mil; jason.moak@kleinschmidtgroup.com; jcandler7@yahoo.com; jcarlee@southernco.com; jec22641@aol.com; jeddins@achp.gov; jefbaker@southernco.com; jeff_duncan@nps.gov; jeff_powell@fws.gov; jennifer.l.jacobson@usace.army.mil; jennifer_grunewald@fws.gov; jerrelshell@gmail.com; jessecunningham@msn.com; jfcrew@southernco.com; jhancock@balch.com; jharjo@alabama-quassarte.org; jhaslbauer@adem.alabama.gov; jhouser@osiny.org; jkwdurham@gmail.com; jlowe@alabama-quassarte.org; jnyerby@southernco.com; joan.e.zehrt@usace.army.mil; john.free@psc.alabama.gov; johndiane@sbcglobal.net; jonas.white@usace.army.mil; josh.benefield@forestry.alabama.gov; jpsparrow@att.net; jsrasber@southernco.com; jthacker@southernco.com; jthroneberry@tnc.org; judymcrealtor@gmail.com; jwest@alabamarivers.org; kajumba.ntale@epa.gov; karen.brunso@chickasaw.net; kate.cosnahan@kleinschmidtgroup.com; kcarleton@choctaw.org; kechandl@southernco.com; keith.gauldin@dcnr.alabama.gov; keith.henderson@dcnr.alabama.gov; kelly.schaeffer@kleinschmidtgroup.com; ken.wills@jcdh.org; kenbarnes01@yahoo.com; kenneth.boswell@adeca.alabama.gov; kmhunt@maxxsouth.net; kmo0025@auburn.edu; kodom@southernco.com; kpritchett@ukb-nsn.gov; kristina.mullins@usace.army.mil; lakewedoweedocks@gmail.com; leeanne.wofford@ahc.alabama.gov; leon.m.cromartie@usace.army.mil; leopoldo_miranda@fws.gov; lewis.c.sumner@usace.army.mil; lgallen@balch.com; lgarland68@aol.com; lindastone2012@gmail.com; llangley@coushattatribela.org; lovvornt@randolphcountyalabama.gov; lswinsto@southernco.com; lth0002@auburn.edu; mark@americanwhitewater.org; matt.brooks@alea.gov; matthew.marshall@dcnr.alabama.gov; mayo.lydia@epa.gov; mcoker@southernco.com; mcw0061@aces.edu; mdollar48@gmail.com; meredith.h.ladart@usace.army.mil; mhpwedowee@gmail.com; mhunter@alabamarivers.org; michael.w.creswell@usace.army.mil; midwaytreasures@bellsouth.net; mike.holley@dcnr.alabama.gov; mitchell.reid@tnc.org; mlen@adem.alabama.gov; mnedd@blm.gov; monte.terhaar@ferc.gov; mooretn@auburn.edu; mprandolphwater@gmail.com; nancyburnes@centurylink.net; nanferebee@juno.com; nathan.aycock@dcnr.alabama.gov; orr.chauncey@epa.gov; pace.wilber@noaa.gov; partnersinfo@wwfus.org; patti.powell@dcnr.alabama.gov; patty@ten-o.com; paul.trudine@gmail.com; ptrammell@reddyice.com; publicaffairs@doc.gov; rachel.mcnamara@ferc.gov; raebutler@mcn-nsn.gov; rancococ@teleclipse.net; randall.b.harvey@usace.army.mil; randy@randyrogerslaw.com; randy@wedoweemarine.com; rbmorris222@gmail.com; rcodydeal@hotmail.com; reuteem@auburn.edu; richardburnes3@gmail.com; rick.oates@forestry.alabama.gov; rickmcwhorter723@icloud.com; rifraft2@aol.com; rjdavis8346@gmail.com; robert.a.allen@usace.army.mil; robinwaldrep@yahoo.com; roger.mcneil@noaa.gov; ron@lakewedowee.org; rosoweka@mcn-nsn.gov; russtown@nc-cherokee.com; ryan.prince@forestry.alabama.gov; sabrinawood@live.com; sandnfrench@gmail.com; sarah.salazar@ferc.gov; sbryan@pci-nsn.gov; scsmith@southernco.com; section106@mcn-nsn.gov; sforehand@russelllands.com; sgraham@southernco.com; sherry.bradley@adph.state.al.us; sidney.hare@gmail.com; simsthe@aces.edu; snelson@nelsonandco.com; sonjahollomon@gmail.com; steve.bryant@dcnr.alabama.gov; stewartjack12@bellsouth.net; straylor426@bellsouth.net; sueagnew52@yahoo.com; tdadunaway@gmail.com; thpo@pci-nsn.gov; thpo@tttown.org; timguffey@jcch.net; tlamberth@russelllands.com; tlmills@southernco.com; todd.fobian@dcnr.alabama.gov; tom.diggs@unq.edu; tom.lettieri47@gmail.com; tom.littlepage@adeca.alabama.gov; tpfreema@southernco.com; trayjim@bellsouth.net; triciastearns@gmail.com; twstjohn@southernco.com; variscom506@gmail.com; walker.mary@epa.gov; william.puckett@swcc.alabama.gov; wmcampbell218@gmail.com; wrighr2@aces.edu; wsgardne@southernco.com; wtanders@southernco.com

Subject: Harris Relicensing - Initial Study Report Meeting Summary
Date: Tuesday, May 12, 2020 12:16:34 PM
Attachments: 2020-05-12 ISR Meeting Summary.pdf

Harris relicensing stakeholders,

The meeting summary from the April 28th Initial Study Report meeting, including a list of attendees and the meeting presentation, was filed with FERC today. The meeting summary is attached and can also be found at www.harrisrelicensing.com.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Alabama Power

600 North 18th Street
Hydro Services 16N-8180
Birmingham, AL 35203
205 257 2251 tel
arsegars@southernco.com

May 12, 2020

VIA ELECTRONIC FILING

Project No. 2628-065
R.L. Harris Hydroelectric Project
Initial Study Report Meeting Summary

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

Dear Secretary Bose,

Alabama Power Company (Alabama Power) is utilizing the Federal Energy Regulatory Commission's (FERC) Integrated Licensing Process (ILP) to complete the relicensing process for the Harris Hydroelectric Project (FERC No. 2628-065). On April 28, 2020, Alabama Power held an Initial Study Report Meeting pursuant to 18 C.F.R. Section 5.15 (c) of the ILP. Due to concerns with COVID-19, Alabama Power held the Initial Study Report meeting via conference call.

The meeting summary, including a list of attendees and the meeting presentation, is attached.

If there are any questions concerning this filing, please contact me at arsegars@southernco.com or 205-257-2251.

Sincerely,

Angie Anderegg
Harris Relicensing Project Manager

Attachment - Initial Study Report Meeting Summary

cc: Harris Stakeholder List

Meeting Summary

Initial Study Report Meeting via Conference Call

April 28, 2020 ~ 9:00 AM to 4 PM

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APPENDICES

1 OVERVIEW

Angie Anderegg (Alabama Power) opened the Harris Project (FERC No. 2628) (Project) Initial Study Report (ISR) meeting and reviewed the ISR meeting purpose. Angie conducted a roll call, reviewed phone etiquette, and presented a safety moment. A list of participants is included in Appendix A[1]. Alabama Power presented information on the progress of each study, which included applicable study results, requested variances, and any additional studies or requested study modifications. The ISR presentation was made available to all participants on the Harris Relicensing website (www.harrisrelicensing.com) prior to the meeting and is included in this report as Appendix B.

In this ISR Meeting Summary, Alabama Power presents the questions and comments that were provided prior to and during the ISR meeting[2]. Each question or comment is followed by Alabama Power's responses and discussion in **bold** text. FERC staff as well as three stakeholders submitted written questions/comments in advance of the ISR meeting via email. Where appropriate, Alabama Power provides a full response. However, many responses to the questions will be addressed in the applicable Final Study Reports and in additional analyses (Phase 2) to be conducted in 2020/2021.

FERC staff raised three general questions in its April 27, 2020 email to Alabama Power. Alabama Power's responses to FERC's general questions are provided below.

1.1 FERC's Questions submitted in advance of the meeting

- Q1 - Comments on all the studies should be filed with the Commission by 6/11/20, as stated in the cover letter of the ISR, and not (solely) sent directly to Alabama Power via email, as stated in the cover letters of the Draft Downstream Release Alternatives Phase 1 Report, Draft Operating Curve Change Feasibility Analysis Phase 1 Report, Draft Erosion and Sedimentation Study Report, Draft Water Quality Study Report, Draft T&E Species Assessment, Draft Phase 1 Project Lands Evaluation Study Report, and the Traditional Cultural Properties Identification Plan and Inadvertent Discovery Plan.

  Alabama Power emphasized that all stakeholders should file comments with FERC on the Harris Project (P-2628-065) on or before June 11, 2020. Alabama Power also noted that if any stakeholder has a question about filing comments with FERC, they could email those questions to harrisrelicensing@southernco.com.

- Q2 - Several of the studies reference the use of Geographic Information System (GIS) data. To facilitate stakeholder review and analysis of the study results it would be helpful if all GIS data collected or developed as part of the studies is filed with the study reports.

[1] Because this meeting was conducted over Skype, there may be participants who joined after the roll call and are not listed in Appendix A.

[2] These notes summarize the major items discussed during the meeting and are not intended to be a transcript or analysis of the meeting.

Alabama Power will file GIS data, as applicable, with the Final Study reports.

- Q3 - Please describe whether you have experienced or anticipate any delays to studies as a result of COVID-19 related closures or social distancing measures.

  Alabama Power has experienced delays conducting field work and meeting with the Harris Action Teams (HATs) due to COVID-19 closures and restrictions. Alabama Power anticipates that it may be months before HATs can meet in person. However, meetings can still occur using teleconferencing.

2 CULTURAL RESOURCES PROGRAMMATIC AGREEMENT AND HISTORIC PROPERTIES MANAGEMENT PLAN STUDY

Amanda Fleming (Kleinschmidt) presented the Cultural Resources documents that were filed with the ISR: the Inadvertent Discovery Plan (IDP) and the Traditional Cultural Properties (TCP) Identification Plan. Amanda reviewed the study purpose, data collection to date, initial results, and a variance request to file the Area of Potential Effects (APE) in June 2020.

2.1 FERC's Questions submitted in advance of the meeting

- Q1 - Staff recommend changing the term "historic properties" to "cultural resources" because at the time a previously-undocumented resource is discovered, it has not been assessed for eligibility for the National Register of Historic Places, and cannot, by definition, be considered a "historic property" until its eligibility is determined.

  Alabama Power will make adjustments to the term "historic properties" and will include both the Inadvertent Discovery Plan (IDP) and Traditional Cultural Properties (TCP) Identification Plan as appendices to the Historic Properties Management Plan (HPMP).

- Q2 - Item 2.3.1(b) seems to indicate that at some point after discovery, an evaluation of eligibility for a newly discovered cultural resource will occur. The process for determining National Register-eligibility should be outlined in the plan.

  Alabama Power will add this process to the IDP. The National Register-eligibility process will also be addressed in the Historic Properties Management Plan (HPMP) being developed by Alabama Power.

- Q3 - Rachel McNamara asked about defining the area of potential effects (APE) and the possibility of extending the APE downstream. Rachel stated there is a need for more discussion.

  Alabama Power noted that it intends to schedule a Harris Action Team (HAT) 6 meeting in May to further discuss the APE.

2.2 Carol Knight's Questions submitted in advance of the meeting

- Q4 - How far down river from the dam does Alabama Power have responsibility for the river?

  Alabama Power's responsibility downstream of Harris dam is the Harris Project Boundary below the dam.

- Q5 - How far up each side of the bank does Alabama Power have below the dam?

The State of Alabama owns the river channel, and the riverbanks are private property.

- Q6 - How do they (Alabama Power) enforce their responsibilities?

  Alabama Power follows all guidelines and regulations for lands and waters within the Harris Project Boundary.

- Q7 - Are they [Alabama Power] aware of archaeological sites that are endangered below the dam? That each time they open the flood gates, erosion occurs washing away cultural remains?

  Alabama Power is reviewing potential effects of Harris Project operations on cultural resources downstream of the dam in the Tallapoosa River. However, Alabama Power cannot enforce preservation policies on private lands. If a landowner encounters a burial site, they should report it immediately to the State Historic Preservation Officer (SHPO)/Alabama Historical Commission (AHC). The SHPO or AHC can provide additional details on regulations and authority regarding archaeological properties or cultural remains.

- Q8 - Are they [Alabama Power] aware of the destruction of the fish weirs down river?

  Alabama Power is reviewing potential effects of Harris Project operations on cultural resources downstream of the dam in the Tallapoosa River. In addition, Alabama Power may work with stakeholders to develop best management practices related to cultural resources.

2.3 Participant Questions

- Q9 - Elizabeth Toombs (Cherokee Nation) – Do the HPMP, TCP Identification Plan, and IDP documents apply to the Skyline portion of the Project or is this limited to the reservoir?

  Yes, all of the cultural resources documents and procedures apply to all lands within the Harris Project Boundary.

3 RECREATION EVALUATION STUDY

Amanda Fleming (Kleinschmidt) presented the Recreation Evaluation Study progress. Amanda reviewed the study purpose, data collection to date, initial results, and a variance request to file the draft Recreation Evaluation Study Report in August 2020 instead of June 2020.

3.1 Donna Matthews' Questions submitted in advance of the meeting

- Q1 - Increased downstream, Alabama Power managed, public access. An impediment to public use of the river to swim, fish or float is lack of access. What plans are underway to correct this omission?

  Alabama Power is evaluating downstream use as part of the recreation study, and any additional access needs will be discussed with HAT 5 and addressed in the licensing proposal.

- Q2 - Safety from Rapid Water Level Rises. Over the last 40 years, even locals have been dissuaded from using their river because of erratic and dramatic variations in water levels. Completely aside from the issue of how unnaturally the river is distended from pre-dam normals on an hour by hour basis remains the unaddressed danger to humans recreating in/on the river during episodes of rapid water level rise. The potential threat is created by water release at the dam. APC must alert downstream subscribers of planned and imminent water release. Current cell phone technology is well suited to send safety alerts.

  Alabama Power is evaluating downstream flows and recreation use as part of the recreation evaluation study as well as gathering information/input from public access sites, downstream landowners, and Tallapoosa River users.

  Alabama Power uses the Smart Lakes App and the Alabama Power website to inform stakeholders of water releases. There are times, however, that system demands require a change in the generation schedule. Prior to any generation releases, Alabama Power sounds a notification siren. The generating units will not load unless the siren activates.

3.2 Participant Questions

- Q3 - Ken Wills (Alabama Glade Conservation Coalition) - Why was the operating schedule reduced for Flat Rock and will the operating schedule be modified in 2020 due to COVID-19?

  The operating schedule in August 2019 was condensed based on low attendance. Last year's schedule is not indicative of the 2020 summer schedule. Currently, no changes from the normal operating schedule are proposed, and the goal is to open

by Memorial Day. Alabama Power will follow all state and federal guidelines related to COVID-19.

- Q4 - Several questions and comments were raised by participants about flood control operations and water releases downstream.

  Alabama Power addresses operational questions in Section 6 of this meeting summary.

- Q5 - Keith Henderson, Alabama Department of Conservation and Natural Resources (ADCNR) - Why did the Lake Harris questionnaires start in May 2019 (rather than March 2019) and what were the four survey questions?

  In its April 2019 Study Plan Determination, FERC requested that Alabama Power add the Lake Harris questionnaire. Therefore, Alabama Power started those surveys in May 2019. The study questions are listed in Appendix C to the Recreation Evaluation Study Plan, which can be found at www.harrisrelicensing.com.

4 PROJECT LANDS EVALUATION STUDY

Kelly Schaeffer (Kleinschmidt) presented the Project Lands Phase 1 Evaluation Study Report progress. Kelly reviewed the study purpose and data collection to date, which included the development of maps showing Alabama Power's proposal to add, remove, or modify lands in the Project Boundary. Kelly also reviewed the remaining activities in this study, which include the use of other relicensing studies to develop the Phase 2 Wildlife Management Program (WMP) and the Shoreline Management Plan (SMP). Kelly noted that no variances to this study plan are requested. Alabama Power distributed the Draft Phase 1 Project Lands Evaluation Report to stakeholders in April 2020, concurrently with filing the ISR.

4.1 FERC's Questions submitted in advance of the meeting

- Q1 - On page 9, the proposed definition for the "Recreation" classification includes a reference to permitting processes for various types of recreations activities. Will the permitting processes be updated as part of the revised Shoreline Management Plan (SMP)?

  Alabama Power will review the existing permitting processes during development of the SMP and determine if any updates are needed.

- Q2 - On page 9, the proposed definition of the "Hunting" classification includes a reference to the existing Harris Project Wildlife Mitigation Plan. How do you envision the existing Project Wildlife Mitigation Plan relating to the proposed Wildlife Management Plan that is to be developed as part of Phase 2 of the Lands Evaluation?

  Any existing information (i.e., the existing Wildlife Mitigation Plan) will be reviewed to determine if any portion of the plan might apply to the new WMP, which would be implemented in the next license term.

- Q3 - On page 9, the proposed definition of the "Natural/Undeveloped" classification mentions that one of the allowable uses would be "normal forestry management practices." Please clarify what these practices would include.

  All forestry practices that would be allowable in the Natural/Undeveloped land use classification will be included in the WMP, which will be filed with the final license proposal.

- Q4 - Rachel McNamara (FERC) - Some lands classified as "Recreation" are proposed to be changed to "Natural/Undeveloped". She noted that it may be helpful in the final report for Alabama Power to be very clear about the project purpose in retaining those lands rather than removing from the project boundary.

  Alabama Power intends to clearly state the project purpose of all lands proposed to be reclassified in the Final Licensing Proposal.

- Q5 - On page 10, there are descriptions of two new proposed land use classifications, including "Flood Storage" which would include lands between the 793 ft and 795 ft msl

contours, and "Scenic Buffer Zone" which would include lands between the 795 ft and 800 ft msl contours. Would these classifications overlap with other land use classifications? Also, are there any buildings/structures currently within these elevation bands around Lake Harris?

The land use classifications will not overlap. In areas where the lands above the 800 ft msl contour (i.e. "back acreage") are project lands, the project lands below the 800 ft msl contour would be classified to match the back acreage. In areas where the lands above the 800 ft msl contour are non-project lands, the lands below the 800 ft msl contour would consist of these two classifications. However, the classifications would not overlap but would be adjacent (one band in front of the other). Alabama Power could not confirm at the meeting whether any buildings or structures currently exist within those contours, but current permitting practices allow property owners to build piers, etc. in these bands.

- Q6 - Page 11 discusses the results of the desktop evaluation and site visit to identify any suitable bobwhite quail habitat within the project boundary at Skyline WMA. Could you elaborate on the methods for evaluating the availability of bobwhite quail habitat and how it was determined that no suitable habitat occurred within the project boundary at Skyline WMA? Also, could the report include a figure showing a map of the 7 locations in the Skyline WMA where Alabama DCNR conducts spring/fall quail call surveys, and has documented quail, relative to the project boundary at Skyline WMA?

  The Final Phase 1 Project Lands Evaluation Report will contain detailed methods for the evaluation of suitable bobwhite quail habitat at Skyline. Alabama Power will also include a figure showing the ADCNR's quail call survey locations.

- Q7 - Appendix B provides maps and general descriptions of proposed changes in land use classifications at Lake Harris that were also discussed during the 9/11/19 HAT 4 meeting. It would be helpful if the maps of the proposed changes in land use classifications included legends to identify the various classifications, as well as north arrows and scale bars to facilitate orientation and review.

  Alabama Power will add a legend, north arrows, and a scale bar to the final maps in the Final Phase 1 Project Lands Evaluation Report.

- Q8 - In addition, during the 9/11/19 HAT 4 meeting, we (FERC staff) asked if terrestrial and cultural resource surveys were being conducted on lands proposed for removal from the project boundary and Alabama Power staff responded that they were. Could you provide descriptions of the terrestrial and riparian habitat types for areas that you are proposing to remove from the project boundary. Could you also describe the terrestrial and riparian habitat types for area "RC4" that you propose to reclassify from "Recreation" to "Commercial Recreation"? Do these areas contain suitable habitat for any of the T&E species that may occur at the Harris Lake portion of the project? What were the results of the cultural resource surveys for areas proposed to be removed from the project boundary?

Many other resource studies are being conducted concurrently with the development of the Project lands proposal. Alabama Power intends to use information from other relicensing studies to inform the final decision on the Project lands proposal, which will be included in the final licensing proposal. Additionally, Alabama Power will include within its final licensing proposal descriptions of the terrestrial and riparian habitat types for all areas proposed to be removed from the Project as well as the area "RC4" proposed to be reclassified to "Commercial Recreation".

- Q9 - Sarah Salazar (FERC) - Alabama Power needs to be sure to get information on the record so that FERC can use that information to inform their decision on the project related effects. The Final Phase 1 Project Lands Evaluation should explain the rationale for adding, removing or reclassifying lands in the Project Boundary. Also, it would be helpful if the map of area A6 included the existing birding trail and the proposed extension of the trail.

  The project purpose for the lands to be removed, added, or reclassified will be included in the final licensing proposal. Alabama Power will also add the birding trail and trail extension on the respective map as included in the Final Phase 1 Project Lands Evaluation Report.

- Q10 - Appendix C provides the Anniston Museum of Natural History's Flat Rock Botanical Inventory (inventory) report and the consultation record includes the Anniston Museum of Natural History's letter transmitting the report, Ken Wills' (Coordinator of the Alabama Glade Conservation Coalition) emails, along with several additional observations and recommendations from them.

  Approximately 365 plant species, including some rare species were documented at the site during the botanical inventory. The surveyors, Ken Wills, and FERC staff observed damages caused by vehicles traversing the site (SUV observed by surveyors; ATVs tire marks on granite outcrops observed by Ken Wills and FERC staff during scoping/environmental site review). The consultation record for this study includes recommendations from Anniston Museum of Natural History and Ken Wills' to manage/preserve/restore the site. The proposed definition of the "Natural/Undeveloped" classification, proposed for the rare plant site, does not indicate what types of recreation activities/vehicle access would be prohibited or how Alabama Power would manage such a site. Considering all of this, do you think that Alabama Power's proposed definition of "Natural/Undeveloped" would be effective in protecting this site? Could the definition of this classification be expanded/more detailed, or would you consider another, more protective land use classification type/designation for this site?

  Also, what has Alabama Power done to protect the rare plants that were identified during the inventory and were subsequently damaged by ongoing ATV use observed by Ken Wills? Can vehicles be excluded from these sensitive areas to protect rare plants while the relicensing process proceeds?

Alabama Power noted that that it has SMPs for its other projects that contain different classifications because of unique areas and circumstances. Therefore, the Natural/Undeveloped land use classification may need to be modified to address the rare plants at Flat Rock Park. Alabama Power will work with the HAT on reviewing the classifications and their definitions.

Sheila Smith (Alabama Power) noted that Alabama Power has been working with a contractor to barricade the area to prevent vehicle traffic. The barricade work has been completed. Alabama Power plans to continue monitoring the site to discourage vehicle and all-terrain vehicle (ATV) access.

- Q11 - Sarah Salazar (FERC) asked if the area also gets a lot of mountain bike use?

  Ken Wills (AGCA) noted that vehicles are the primary issue in that area and that mountain biking would not likely cause the effects they are seeing. He also noted that in the rural areas, ATVs were much more common.

- Q12 - Has the request from Randolph County regarding the proposed water treatment intake/plant been resolved/processed?

  Alabama Power is working with Randolph County to find an acceptable site that is similar to their original request. Alabama Power intends to file a land use variance request with FERC's Division of Hydropower Administration and Compliance, and, therefore, this request would not be a part of the relicensing process.

4.2 Participant Questions

- Q13 - Maria Clarke (EPA): It was my understanding there was a court case that involved Skyline Property. What happened? Why was the Skyline property reduced? Is this case closed?

  Alabama Power filed an application with FERC to amend its current Harris Project Boundary at Skyline (Accession No. 20200302-5424), which would add 13.1 acres of land and remove 62.2 acres of land, all within the approximately 15,063 acres of the Harris Project Boundary at Skyline.

5 OPERATING CURVE CHANGE FEASIBILITY ANALYSIS STUDY

Kelly Schaeffer (Kleinschmidt) presented the Operating Curve Change Feasibility Analysis Phase 1 Report progress. Kelly reviewed the study purpose and data collected to date, which included the development of models and the initial modeling results. Kelly also reviewed the remaining activities for this study, including the use of other relicensing studies to conduct the Phase 2 analyses. Kelly noted that no variances to this study plan are requested. Alabama Power distributed the Draft Operating Curve Change Feasibility Analysis Phase 1 Report to stakeholders in April 2020, concurrently with filing the ISR.

5.1 FERC's Questions submitted in advance of the meeting

- Q1 - As we understand it, downstream effects with regard to flooding were assessed for a 100-year design flood. However, the relationship between the downstream flow alternative analysis and the Harris Reservoir winter flood pool analysis is not clear under alternative flood scenarios. What would happen in a scenario other that a 100-year flood? Would operations at Harris Dam under the alternative flood scenario, including different flow release scenarios, have any impact on the Harris Reservoir winter pool analysis, or vice versa?

  The "100-year flood" scenario used for modeling is based on an actual local storm event in the Tallapoosa River basin that is scaled up to equal a 100-year flood event. Other flood flow scenarios would likely have downstream flooding effects but at a smaller amount and duration. Alabama Power evaluated the effects of the 100-year flood, because FEMA uses the 100-year flood for its analysis and is the "gold standard". This is also consistent with modeling efforts that Alabama Power has conducted in previous relicensing processes. Kenneth Odom (Alabama Power) explained that if a 50-year flood scenario is used, there will still be downstream flooding. It will just result in less of an impact than the 100-year scenario. If Alabama Power used a 25-year flood, there would be fewer impacts than the 50-year flood scenario. Ultimately, reducing the flood frequency interval reduces the total amount of flow. However, there is no way to determine the differences in the total amount of flow downstream without modeling.

- Q2 - Table 5-2, page 51 of the report…What is it about RM 115.7 that appears to create a hydraulic control, such that the maximum increase in depth under any winter pool elevation scenario occur about mid-way down the Tallapoosa River?

  The surveyed bathymetric transects of the river indicate that the channel bottom rises at RM 113.63 and RM 114.5, constricting the channel area and creating a hydraulic control. Examination of aerial imagery shows what appears to be a shoal across the river at RM 114.5 and a shoal and island complex at RM 113.63.

- Q3 - Figures 5-20 and 5-21 appear incomplete, as they only show the results for one alternative…baseline (? based on color). Please address this apparent omission.

These figures are complete. However, Alabama Power will review them to determine if the information can be presented with more clarity. The Y axis shows the different winter curve change alternative elevations (+1 is 786 ft, +2 is 787 ft, etc.). For example, at the 786 ft msl winter pool elevation, there are 12 additional days of spill over baseline. Figure 5-21 is similar but includes the additional days of capacity operations for each alternative.

5.2 Participant Questions

- Q4 - Jimmy Traylor, Donna Matthews, and Albert Eiland (Downstream Landowners) expressed concern regarding how Alabama Power is operating the Harris Project, particularly during high flow events. All expressed that flood control has been worse since the dam has been in place. There were specific comments regarding various dates where flow conditions were a concern including February 6, 11, and 13, 2020. There were also questions regarding operations and use of flood gates on April 9, 2020. This discussion on operations during high flow events transitioned to comments and questions on the efficiency of the turbines at Harris and whether Alabama Power ever evaluated the efficiency of the turbines. Does raising the winter pool help with the generation efficiency, or are there any studies ongoing to improve the efficiency of generation for the dam? What about the dam turbines or equipment upgrades?

  Alabama Power operates Harris in accordance with U.S. Army Corps of Engineers flood control procedures provided in the Harris Reservoir Regulation Manual. Alabama Power follows these procedures and cannot evacuate water in anticipation of a high flow event. Kenneth Odom (Alabama Power) explained that raising the winter pool to the levels being evaluated in this study does not appreciably affect the efficiency of generation. Turbine or powerhouse equipment upgrades have a much greater impact on efficiency. However, the order of magnitude for total generation capacity for Harris would remain the same regardless of any equipment upgrades. Kenneth noted that the efficiency of the turbines is addressed during a turbine upgrade, which typically occurs at the end of the useful life of the turbine. There are no planned turbine upgrades during this relicensing.

  Additionally, Kenneth Odom reviewed the reservoir levels that were raised by a stakeholder earlier in the meeting. He noted that on February 6, 2020, the reservoir level was 785 ft msl. A large rain event had occurred, and both units were generating at best gate. The reservoir's elevation rose to 790 ft msl (5 feet above winter curve) on February 11, 2020 and both units began operating at full gate. The reservoir continued to rise. On February 13, 2020, the Harris reservoir was 6.5 feet above the winter curve elevation of 785 ft msl. In accordance with Harris flood control procedures, Alabama Power opened flood gates. Kenneth further confirmed that Alabama Power was not using any flood gates to pass water downstream of Harris Dam on April 9, 2020.

- Q5 - Donna Matthews (Downstream Landowner): Is the public ever involved in discussions regarding turbine or equipment upgrades; why not consider using the HEC-RAS modeling to redesign the turbines? Could you find the optimal solution to turbine

design and flow scenarios to solve those issues? How do we know what to ask for if all the possible solutions aren't offered for us to consider?

Angie Anderegg (Alabama Power) stated that the public is not usually involved with discussions on equipment upgrades. She noted that there seemed to be confusion between the turbine design/efficiency versus the downstream flow scenarios. The two existing turbines have a specific capacity and generate a finite number of megawatts with the amount of water that passes through them, which is inherent in the design of the turbines. When it is time to upgrade, Alabama Power desires to achieve more power with less water, creating an increase in efficiency. It is not possible to completely redesign the turbines, because the Harris Project was originally designed to generate a certain number of megawatts using a certain amount of water at specific times (i.e., peak) to support system operations. Angie gave an example of the system peak that happens during a hot summer afternoon and how hydropower is used to meet the system demand. As part of the downstream release alternatives study, the benefit or impact of providing a continuous minimum flow are being analyzed (a continuous minimum flow would also ideally produce power). Angie reiterated that the results from this study, as well as the other studies, will be analyzed together to develop the best proposal.

Kenneth Odom (Alabama Power) added that a redesign of the turbines or new "runners" would focus on improving the efficiency but deliver the same general number of megawatts.

FERC staff stated that, if a licensee determines that upgrades are necessary, it must file a license amendment application with FERC. She explained that license amendment applications are subject to the NEPA process, and depending on the potential for environmental effects, FERC would issue a public notice and solicit public input.

- Q6 - Donna Matthews: Who controls the amount of number of megawatts generated? What if the number of megawatts is too much for the river? Why can't you change it?

  The number of megawatts that a project is authorized to generate is set by FERC, as described in the original license order. Changing the generating capacity would affect the energy grid beyond Harris, because Alabama Power is required to supply a certain amount of power across the entire system. There is a reliability factor from the Harris Project that supports the entire power grid.

- Q7 - Question from Instant Messenger, Martha Hunter (Alabama Rivers Alliance): Wasn't there a turbine upgrade a few years ago?

  No, a turbine upgrade has not been completed at the Harris Project.

- Q8 - James Hathorn (USACE): How were the intervening flows considered in the Harris model?

The intervening flow hydrograph for the contributions to the Tallapoosa River from the drainage area between Harris and Wadley was calculated by Alabama Power, as described in Section 4.4 of the study report. The hydrograph was included in the model as a uniform lateral hydrograph entering the river between RM 136.6 and 122.97. Kleinschmidt developed an intervening flow hydrograph for the contributions to the river from the drainage area between Wadley and Horseshoe Bend by comparing the daily flood hydrographs from the Wadley and Horseshoe Bend gages for the March 1990 event. A comparison of the daily average flow hydrographs gages showed a similar shape for both gages. The hourly hydrograph for the Wadley intervening flow, calculated by Alabama Power, was adjusted by multiplying each hourly ordinate of the hydrograph by a ratio of the Horseshoe Bend to Wadley gages. The data was then adjusted to subtract out the flow from the Wadley gage so that the lateral inflow was only equal to the flow intervening between the two gages. The hydrograph was included as a uniform lateral inflow between RM 122.97 and RM 93.66. The development of the hydrograph is described in Section 4.5.3 of the report.

- Q9 - James Hathorn: What types of structures will be analyzed in the phase 2 structure study? Will there be any crop/farmland analysis?

  Alabama Power has not conducted a full economic analysis of each structure, land type, or property type. Crop or farmland analysis is not currently in the FERC-approved methodology.

- Q10- James Hathorn: For the HEC-RAS modeling, it only uses a 100-year design flood, or different types of storms?

  Alabama Power has not proposed to model other storm events. However, if FERC needs this information for its analysis, Alabama Power can model other storm events.

  Angie Anderegg (Alabama Power) explained that the 100-year flood has been used as the standard by FEMA. To move forward with other flood scenarios, Alabama Power will need to know exactly which additional floods need to be modeled.

  Sarah Salazar (FERC) reiterated that the process is in the information gathering stage, and no decisions are being made right now. However, we do want to know all of the alternatives that are possible moving forward in order to make the best decision later. She encouraged all stakeholders to file comments on or before June 11, 2020.

- Q11 - Alan Creamer (FERC) - Regarding the flood design, what would the downstream flows look like using a 50-year or 25-year flood scenario? I know the worst-case scenario is the 100-year flood. I'm wondering if it would present as a straight line, or a curve in terms of how it presents downstream? Maybe the 100-year flood isn't the end–all.

Kelly Schaeffer (Kleinschmidt) asked if FERC was requesting that Alabama Power add specific flood events other than the 100-year flood to the study plan (the 25 and 50-year flood scenarios).

Alan Creamer (FERC) answered that he thought it would be helpful to see how the flows would work under different scenarios.

Kelly Schaeffer responded that if there are additional modeling requests, Alabama Power would need to know those scenarios as soon as possible to avoid getting to December 2020 (after completing the majority of the Phase 2 analysis) and have to re-run the model for additional flood events and revisit the Phase 2 analyses.

Kenneth Odom (Alabama Power) explained that the "100-year flood" scenario that Alabama Power uses for modeling is based on a local storm event in the Tallapoosa River basin, but it is scaled up to equal a 100-year flood event. If it is a 50-year flood scenario, downstream flooding will still occur. It is just less impact than the 100-year scenario. If Alabama Power used a 25-year flood, there would be fewer impacts than the 50-year flood scenario. FEMA bases its flood maps on the 100-year flood. Other storms can be examined, but ultimately, reducing the flood frequency interval reduces the total amount of flow. However, there is no way to determine what the differences would be in the total amount of flow downstream without modeling.

Angie Anderegg (Alabama Power) commented that Alabama Power's intent is to use the 100-year flood to determine whether it will propose a lake level change.

- Q12 - Regarding the 100-year flood, are they taking climate change into account when they're looking at these scenarios? Martha Hunter also added that along with additional rains we are seeing we need to anticipate the different droughts that are coming and wants that to be part of the decision for how the river is operated in the next 50 years.

  Alan Creamer (FERC) stated that he did not recall that climate change was part of the study design or approved study plan.

- Q13 - Maria Clark (EPA) noted that that the EPA, U.S. Geological Survey, and FEMA have been working together to address data shortfalls on climate information. She noted that the 100-year event may not be appropriate at this point or if Alabama Power does use the 100-year, they should also supplement with local events. Maria plans to pass along this information from EPA.

  Kelly Schaeffer (Kleinschmidt) asked if Maria could include that information or provide a reference in its comments on the ISR. Kenneth Odom (Alabama Power) also noted that the 100-year design flood used in the Harris modeling was based on an actual storm event that was scaled up to equal a 100-year event.

- Q14 – Charles Denman via email following the meeting: I believe a comparison of historical (pre-dam) and recent flooding downstream of the dam would help stakeholders understand the effectiveness of the Dam for flood control. Also include a model with

same parameters (land use, storm intensity and duration, etc.) but without the dam attenuation. This would help downstream stakeholders understand what effects the Dam has on flooding downstream. Are the original studies and permitting materials available for stakeholders to review?

The Harris Project, as it exists today, is considered baseline with regard to FERC analyses and is used in FERC's decision whether to issue a new operating license and under what conditions. Alabama Power structured this study to review and analyze flood conditions with the Harris Dam in place, consistent with FERC's guidance on existing projects and the evaluation of pre-project conditions. FERC approved this study plan in April 2019. All Harris Relicensing study plans, meeting documentation, and other permitting materials are available to stakeholders at www.harrisrelicensing.com. These documents may also be provided upon request if needed.

6 DOWNSTREAM RELEASE ALTERNATIVES STUDY

Kelly Schaeffer (Kleinschmidt) presented the Draft Downstream Release Alternatives Phase 1 Study Report progress. Kelly reviewed the study purpose and the data collected to date, which included the development of models and initial modeling results. Kelly also reviewed the remaining activities for this study, including the use of other relicensing studies to conduct the Phase 2 analyses. Kelly noted that no variances to this study plan are requested. Alabama Power distributed the Draft Downstream Release Alternatives Phase 1 Report to stakeholders in April 2020, concurrently with filing the ISR.

6.1 FERC's Questions submitted in advance of the meeting

- Q1 - Modeling scenarios…as it stands now, the report presents the results for three downstream release alternatives: Pre-Green Plan operation, Green Plan operation, and Pre-Green Plan operation with a 150 cfs continuous minimum flow. Why was modelling of minimum flow limited to 150 cfs? Also, have you considered modeling Green Plan releases with continuous minimum flow scenarios? On what basis did you choose not to do so?

  Alabama Power proposed these three modeling scenarios for downstream releases in the study plan. These scenarios have been discussed for at least 18 months with stakeholders and were developed in the study plan process and approved by FERC in its April 12, 2019 Study Plan Determination.

6.2 Alabama Rivers Alliance's Questions submitted in advance of the meeting

- Q2 - Why is the only continuous minimum flow regime being studied a 150 cfs flow? Why was this particular value chosen? Previous commenters have encouraged the study of a wide variety of flow conditions and operational scenarios. Does Alabama Power plan to study a broader range of continuous minimum flows?

  As noted above, the various flow scenarios were determined in the development of the study plan. The 150 cfs minimum flow is equal to the same daily volume as three 10-minute Green Plan pulses. If stakeholders desire additional flow conditions and operational scenarios, they need to request additional modeling per the FERC study plan modification process. Kelly Schaeffer (Kleinschmidt) explained that the modeling is resource intensive and while the HEC-RAS model is built and functioning, the process to review other flow scenarios is resource intensive.

- Q3 - The study report states that with full power storage available, Harris is programmed to generate 3.84 hours per day. Is all of that peaking generation, or is some percentage of the programmed operation for non-peaking generation?

  Yes, that number is in the daily Res-SIM model. It is really an average of all the plants in Alabama Power's system at full pool. That number is not connected to peaking operations.

- Q4 - In the Green Plan Release Criteria attached as Exhibit B, item 4 concerns Spawning Windows and states that "Spring and Fall spawning windows will be scheduled as conditions permit. The operational criteria during spawning windows will supersede the above criteria." Can you elaborate on when "conditions permit" for scheduling spawning windows?

  It is dependent on where the reservoir elevation is in relation to its rule curve and what flows are coming into the reservoir to provide stable operations. Keith Chandler (Alabama Power) gave an example: Alabama Power tried to hold a spawning window and only ran 10-minute pulses to see what it would do downstream. By going by the criteria (three 10-minute pulses) Alabama Power wanted to see if it would create a spawning window for the downstream fishery.

- Q5 - Jack West (Alabama Rivers Alliance) asked if Alabama Power had data that permitted for the spawning windows.

  There is some data. Alabama Power's Reservoir Management group has summaries of each year, and the effort in the most recent year is summarized in the baseline report included with the Pre-Application Document (PAD). A portion of this analysis is being done as part of the aquatic resources study and will be detailed in the Draft Aquatic Resources Report.

6.3 Participant Questions

- Q6 - Lisa Gordon (EPA) asked if she could be directed to the 3 downstream release alternative scenarios to find the document where the analysis occurred to model 150 cfs continuous minimum flow. So continuous minimum flow means there is no pulsing?

  Correct; there will not be pulsing with a continuous minimum flow. The flow scenarios are documented in the meeting summaries from December 2018, as well as meetings and filings in 2019 prior to the FERC Study Plan Determination (April 12, 2019). Angie Anderegg (Alabama Power) noted that all the meeting summaries and presentations (from PAD to present) are available on the Harris relicensing website.

- Q7 - Lisa Gordon asked if flows would be adaptively managed. Would these be set, locked in flows, or would there be modified flows when needed?

  Alabama Power is evaluating a continuous minimum flow with no variations or modifications; however, Alabama Power is currently in the data gathering and analysis phase. With this information, a decision about flows can be made. What Alabama Power has been doing in the years leading up to relicensing is an adaptive management process. Alabama Power also has another project that flows are being adaptively managed in a bypassed reach.

- Q8 - Sarah Salazar recalls during the study plan meeting that we discussed alternatives and the stakeholders generally didn't feel comfortable proposing alternatives at that point but said they would once they saw results from the three modeled scenarios included in

Alabama Power's study plan. The information gathering stage does not last forever so now is the time to propose other flow scenarios for modeling. Alabama Power needs those flow scenarios now.

- Q9 - Alan Creamer (FERC) said he agreed with Sarah's summary. Alan would like to see an operating scenario that includes the Green Plan with minimum flows. Alan acknowledged that the fisheries studies have not been completed, so stakeholders do not currently have that information. Once all the studies are complete and reports are available, Alan noted that there should be another opportunity for stakeholders to revisit phase 1 in terms of modeling and not simply go to phase 2 once all the information is presented to stakeholders. Also, what does the 150 cfs represent in terms of percentage of average annual flow? Where does it fall on flow duration curve?

  Alabama Power is in the process of getting that additional information by conducting the FERC approved studies. However, Alabama Power needs to hear from stakeholders now—based on the extensive amount of data currently available on the project—regarding alternative flow scenarios. Any additional scenarios are needed now. Once the phase 2 portions of the operations studies begin, any need to come back to modeling various flow scenarios may result in delays and an incomplete application, which is not acceptable to Alabama Power. There is a lot of data on the Harris Project that has been compiled and presented, and Alabama Power wants stakeholders to meet halfway with regard to putting forward additional flow alternatives to analyze.

- Q10 - Alan Creamer agreed but also reiterated that he doesn't believe we have complete information and that stakeholders should have the opportunity to modify the study plan after receiving and reviewing the study results. Alan noted that there are three studies that are not complete, and FERC and Alabama Power will have to work through this issue so that there is an additional opportunity. Normally at an ISR, Alan stated that all the first-year studies are done. In this case, there are still outstanding studies. He indicated that he doesn't think there is adequate information for stakeholders to make suggestions on alternative flow scenarios.

  The due dates in the studies were approved by FERC. Alabama Power and FERC discussed the draft study reports that were not scheduled to be included in the ISR and discussed the two studies for which Alabama Power is requesting a variance. Angie Anderegg (Alabama Power) noted that the Recreation Evaluation Draft Report is delayed, because Alabama Power incorporated a stakeholder request for an additional survey, which was just completed in April. However, the original due date approved by FERC for the Draft Recreation Evaluation Report was June 2020. Alabama Power stated that there are some reports that were not scheduled to be filed as part of the ISR. The ILP may anticipate that studies will be completed in one year and reports filed as part of the ISR, but that is not a requirement of the ILP or the ISR.

- Q11 - Sarah said that in Alabama Power's proposed and revised study plan that the schedule listed the ISR as a milestone and FERC interpreted that to mean that all the first

phases of the study would be complete by then. Any other milestone that went beyond that phase would be a follow up of that report. FERC sets up the study seasons for one year. There are usually two study seasons in each ILP, and she noted that perhaps this accounts for the disparity between FERC and Alabama Power's understanding of where we should be at this moment. Maybe we need to have another discussion.

Six study reports are available for review and comment. If there is disagreement after stakeholder review and comment of the remaining three reports and cultural documents, Alabama Power would enlist FERC for a dispute resolution. Alabama Power desires that everyone has the opportunity to comment on these study reports. Angie Anderegg (Alabama Power) referred to the study schedule and noted that Alabama Power has met the ILP obligations and, where necessary, Alabama Power has asked for a variance on two studies (Recreation and Cultural APE document).

- Q12 - Rachel McNamara agreed with Alabama Power's characterization of the Recreation Evaluation and understood the rationale for modifying the schedule. For the Recreation Evaluation Draft Report, Rachel emphasized that there's need for adequate time for stakeholders to comment on the draft report and that all comments be filed with FERC. There are ways we [FERC] can handle the comment period and I think FERC staff needs to discuss that and figure out the best strategy to address comments and study plan modifications.

  Angie Anderegg (Alabama Power) assured the participants that they would have ample time to comment on the remaining draft study reports (Recreation, Aquatic Resources, Downstream Aquatic Habitat, and the Cultural APE document).

- Q13 - Jimmy Traylor raised the issue of the downstream temperature and the relationship with the minimum flow. He noted that the Tallapoosa River below Harris Dam is not supposed to be a cold-water fishery. If Alabama Power is going to release a 150 cfs continuous minimum flow, it has to be at a temperature that more like that of a warm water fishery.

  Angie Anderegg (Alabama Power) indicated that temperature would be addressed in the aquatic resources' studies (HAT 3) and requested that this question be addressed later in the meeting.

- Q14 - Barry Morris (LWPOA) asked if he was right in assuming these alternative releases would have no impacts on the lake level. Barry asked if 150 cfs was equivalent to the Green Plan flow, would it be twice as much water?

  Based on the model, a 150 cfs minimum flow would not affect the lake level. However, a larger continuous minimum flow could impact lake levels. Regarding the amount of water, Kenneth Odom (Alabama Power) stated that in response to Barry's second question, no, it is not twice as much water. Kenneth stated that the part of generation that is now used solely for Green Plan flows would be replaced by 150 cfs continuous flow. Alabama Power would not pass a continuous minimum flow and continue to pulse.

- Q15 - Rachel asked if you are generating with minimum flow.

  Yes, ideally the minimum flow would be generating, not spill. Chris Goodman (Alabama Power) said that a 150 cfs minimum flow would not affect lake levels but would constrain Alabama Power's ability to peak with the same flexibility as they currently have.

- Q16 - Maria Clark (EPA) encouraged Alabama Power to review their March 2019 comments on this issue. She asked why 2001 was selected as an average year.

  2001 was an average or normal water year determined by the Flood Frequency Analysis study for the Tallapoosa. Additionally, 2001 was pre-Green Plan, which provided pre-Green Plan operations and hourly data to run through HEC-RAS model.

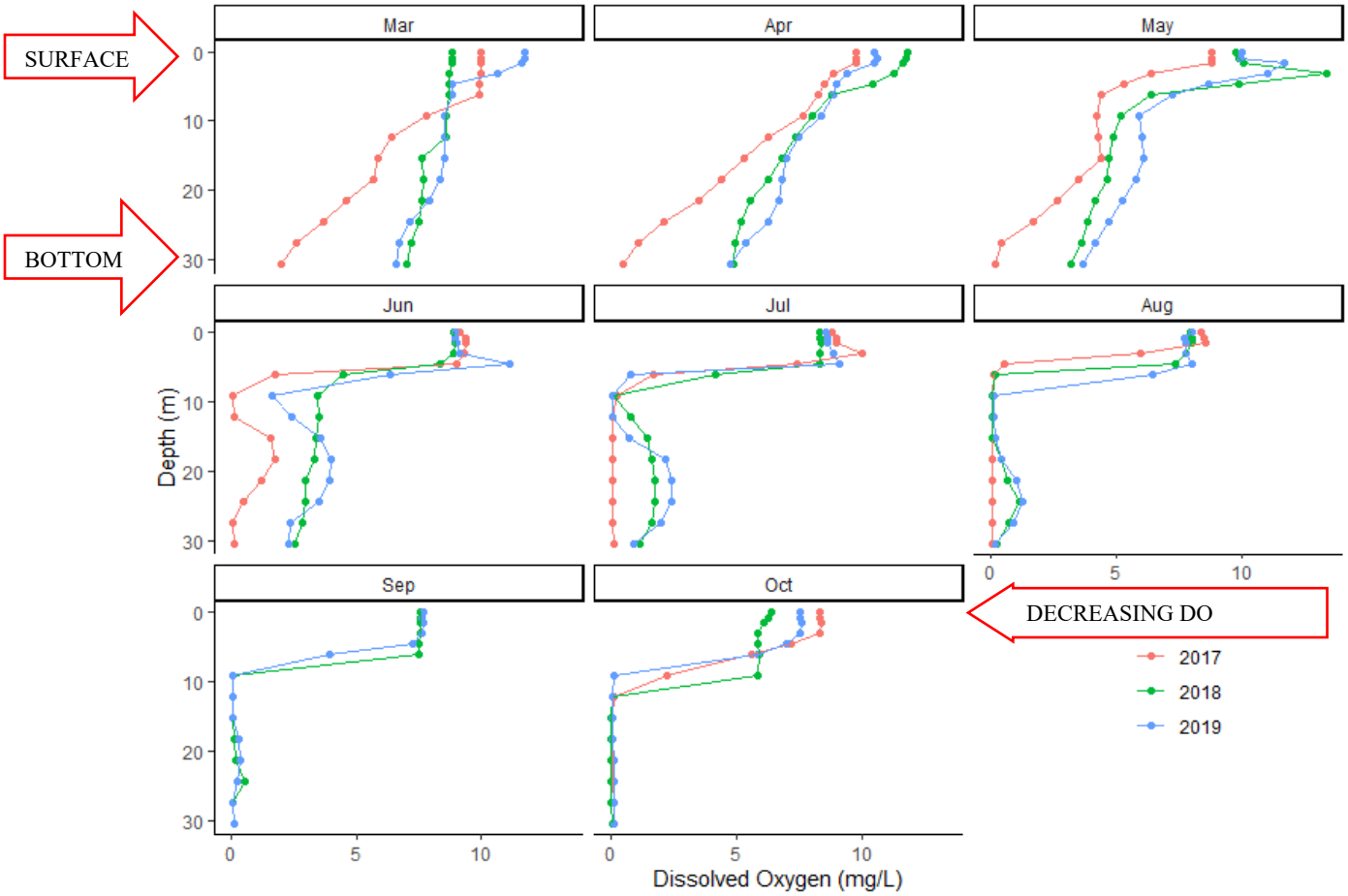
7 WATER QUALITY STUDY

Jason Moak (Kleinschmidt) presented the progress on the Draft Water Quality Study, which included the study purpose, data and activities collected to date, and remaining activities. Jason noted that no variances to this study plan are requested. However, the schedule has been updated to reflect Alabama Power's plan to file the 401 Water Quality Certification application in April 2021. Alabama Power distributed the Draft Water Quality Study report to stakeholders on March 9, 2020, and also in April 2020, concurrently with filing the ISR.

7.1 FERC's Questions submitted in advance of the meeting

- Q1 - Page 18…figure 3-8…please explain what is happening with the vertical DO profiles where DO increases in May, June, July, and August, where otherwise the DO should be declining.

  Jason Moak (Kleinschmidt) said it could be how the graphs are interpreted. The data shows the reservoir stratifying as expected in a reservoir during the warmer months of the year. Jason recommended an offline discussion but stated that Alabama Power will also try to clarify in the Final Water Quality Study Report.



- Q2 - Page 23 discusses Alabama DEM monitoring data for the Harris Dam tailrace (i.e., immediately downstream from Harris Dam). Was this data collected during generation, or does it also reflect non-generation periods?

  These were events when ADEM went out monthly and took a grab sample. All samples were completed during non-generation. Alabama Power will clarify this in the Final Water Quality Study Report.

- Q3 - Pages 39-41 present DO and temperature data for downstream continuous water quality monitoring station. On page 16 of the ISR, Alabama Power is not proposing any additional monitoring beyond what was approved in the Commission's SPD. Why is there not a second year of monitoring for the downstream continuous monitoring station? How confident are Alabama Power and the HAT 2 members that 1 year of monitoring at the downstream station includes a worst-case scenario?

  A second year of monitoring was not included in the FERC-approved study plan. Alabama Power is confident in the data collected thus far. Regarding a worst-case scenario, Alabama Power could monitor for 5 years and may not see a worst-case scenario. Although 2017 may have been a bad year, Alabama Power missed that opportunity to collect a continuous data set at the approved location in the study plan.

7.2 Alabama Rivers Alliance's Questions submitted in advance of the meeting

- Q4 - Previous data from 2017-2019 mentioned in Table 1-1 is not continuous, year-round data. Is Alabama Power now collecting continuous, year-round data at multiple locations?

  No. The study plan approved collecting continuous data at the downstream monitor during 2019.

- Q5 - The Alabama Power data listed on Table 1-1 shows monitoring during generation only. Is data during non-generation periods available prior to 2019?

  No.

- Q6 - The report states that a continuous monitor was "recently installed" at Malone. Was it installed on March 12, 2019 corresponding to the "Downstream Monitor 2019" tab of the WQ data excel spreadsheet?

  The monitor at Malone is owned and operated by ADEM. Data from the Malone monitor was not included in the spreadsheet. However, Alabama Power can add it to the Final Water Quality Report.

- Q7 - Is there only the one continuous monitoring station downstream from Harris Dam at Malone?

  Yes.

- Q8 - The Draft Water Quality Study Report contains significant water temperature data, but the discussion and conclusions focus almost exclusively on dissolved oxygen levels, and do not discuss temperature. Will the effects of temperature be discussed in the final report or reported on in the Aquatic Habitat or Aquatic Resources study reports?

  The effects of temperature on aquatic resources will be addressed in the Aquatic Resources Report.

- Q9 - Is Alabama Power studying, or planning to study, methods to account for low water temperatures, including using an alternative intake structure that would allow for mixing of warmer and cooler water to raise average temperatures or withdrawing water from a higher depth in the reservoir to allow for warmer releases?

  Alabama Power intends to study technologies that can address temperature, as needed, once a temperature issue has been determined and defined through on-going study and data analyses.

7.3 Participant Questions

- Q10 - Alan Creamer (FERC) noted that there was only one year of continuous monitoring data. How confident is Alabama Power that the data represents what could be a worst-case drought or is truly reflective of the worst water quality could be? Also, Alan asked why Alabama Power couldn't get more than one year of continuous data? If stakeholders want to look at this and want to know how confident Alabama Power is in this data and that it truly represents a drought period.

  Jason Moak (Kleinschmidt) said he does not think 2019 was a worst-case scenario and that it is not known if 2020 would be either. Angie Anderegg (Alabama Power) said that Alabama Power proposed one year of monitoring in the study plan, which was approved. Angie also noted that it is time consuming and expensive to service the continuous monitor but that will not prevent further monitoring should it be required.

  Alan stated that when FERC approved the Water Quality Study Plan, it was with the intent that collectively, we would use year one data to determine if additional data were needed. Angie Anderegg (Alabama Power) asked if FERC sees a need for an additional year. Alan said there are instances where we drop below what we are trying to achieve, so if this is not the worst-case scenario, you could have more years where the DO drops below that criteria. Alan further stated that it is hard to make decisions on just one year. Alan also pointed out that the one year included in the report was not one that could be considered a drought, so in a drought Alabama Power may only meet water quality criteria 90% of the time. Angie noted that because Alabama Power is filing the 401 application in 2021, Alabama Power is collecting data at the tailrace monitor in 2020, resulting in an additional year of data. Alan Creamer noted that the tailrace monitor is only capturing generation. He indicated that FERC wants to know what happens to water quality during both generation and non-generation.

Keith Chandler (Alabama Power) noted that 2019 was not a drought year, but it was a hot year and that ADEM is continuing to collect data downstream. Keith further said Alabama Power ran only green plan flows a lot of the time during the monitoring season.

Alan Creamer said the most important part of this is what is happening right below Harris Dam or less than half a mile downstream. The other gages further downstream are also accounting for other influence. In reading this report Alabama Power met the criteria near 100% of the time but that may not be reflective of what's happening closer to the dam.

- Q11 - Jimmy Traylor (Downstream Landowner) asked if anyone has identified the sulfur smell in released water? Jimmy said he noticed it in the summer especially during the first 45 minutes or so of generation. Near Malone you get a foul smell. Seems to go hand-in-hand with drought conditions. As you get further into the summer months, it worsens.

  Alabama Power is not aware of a sulfur smell in the water. Jason Moak (Kleinschmidt) asked if there was a time of year that the smell is worse. Jason said he has noticed that smell at other hydro projects and said it probably had something to do with natural lake stratification and biological processes that occur on the lake bottom.

- Q12 - Sarah Salazar (FERC) asked if the Draft Water Quality Report covered where in the water column that Alabama Power is drawing water from in Lake Harris? This would be helpful to include in the report.

  The intake at Harris has a movable sill. Alabama Power will add this information to the Final Water Quality Report.

- Q13 - Albert Eiland (Downstream Landowner) asked to please summarize the conversation between him and Jason Moak about mercury. Has the content changed in the reservoir? How bad is it in the lake?

  Jason Moak (Kleinschmidt) said he was not sure. It could be coming from atmospheric deposition in the lake. Jason noted it is a widespread issue among reservoirs all over the country and an issue with large bodies of water and fish.

- Q14 - Maria Clark mentioned a Georgia Project where they do maintenance in the intake because a lot of debris accumulates, and they let the water run which causes the debris to mix into the water that is being released. Clearing that helped alleviate the smell. This was a smaller dam.

  Jason Moak (Kleinschmidt) said there is not much of a debris issue due to the size of the Harris Dam.

8 EROSION AND SEDIMENTATION STUDY

Jason Moak (Kleinschmidt) presented the progress on the Draft Erosion and Sedimentation Study, which included the study purpose, data and activities collected to date, and remaining activities. Jason noted that no variances to this study plan are requested. Alabama Power distributed the Draft Study report to stakeholders on March 17, 2020, and also in April 2020, concurrently with filing the ISR.

8.1 FERC's Questions submitted in advance of the meeting

- Q1 - Section 5.0, Discussion and Conclusions states that at some sites, "land clearing and landscaping, and other construction activities affecting runoff towards the reservoir" cause erosion. Is it possible to provide areal images showing the areas of active erosion in relation to the project boundary as part of the final study report?

  Yes. Alabama Power will add aerial photos showing the project boundary, winter pool, and summer pool contours.

- Q2 - Appendix D – photos…it would be helpful if the captions for the photos included better location descriptors (e.g., Harris Reservoir, Harris Reservoir-?? Embayment, Harris Reservoir-?? River Arm, Tallapoosa River, etc.). For the Harris Reservoir sites, it would be helpful if the contours within which peaking operations occur (lake fluctuation zone) could be identified.

  Alabama Power will add captions with location descriptors to the photos in Appendix D. Because Harris is a storage reservoir, there are no daily fluctuations in reservoir level, only seasonal fluctuations in accordance with the operating curve.

- Q3 - Could you make the video footage that was collected as part of this study available for stakeholders to view?

  Yes, Alabama Power is investigating how to make the video footage available.

- Q4 - Will the nuisance aquatic vegetation surveys still be possible to conduct in Lake Harris this summer?

  Yes, the nuisance aquatic vegetation surveys are scheduled for summer 2020.

- Q5 - On page 24, in section 3.2, the report includes the following statement: "A total of 20 sites, rather than 15 sites, were provided for the left bank segments as many segments were tied with a score of (slightly impaired)." Please explain what is meant by many of the streambank segments being "tied with a score of slightly impaired" and clarify the relationship between the number of streambank segments/sites and the bank condition score.

Alabama Power will edit the text to make this section clearer. All assessed streambank segments (each 0.1 mi of the study reach) were sorted based on their condition score, from lowest to highest. Sites with the 15 worst scores (i.e., ranked 1 through 15) were presented in Table 3-2. Since 14 of the left bank segments in the list had the same score for condition (3.0), they were included in the list.

- Q6 - On page 25, in Table 3-2, shouldn't the heading/label of the first column of the table be "Site Number" instead of "Rank" given that the rank options are only 1 through 5 (according to Table 3-1) and there appear to be 20 sites?

  Please see the response to Q5 above. Alabama Power understands that this table is confusing and will rework it to make the results clearer in the Final Erosion and Sedimentation Study Report.

- Q7 - On page 11, of the Tallapoosa River High Definition Stream Survey Final Report (Appendix E of the Erosion and Sedimentation Study Report), it states that prior to the survey, flows were monitored to ensure relatively normal flow conditions during the survey. For clarity, what were the "relatively normal flow conditions" during the survey? Were they slightly higher or lower than average?

  As seen in the graphs of discharge on page 12 of Appendix E, flows during the study were very close to the long-term median value.

- Q8 - In Figures 13 and 16 of the Tallapoosa River High Definition Stream Survey Final Report, the scale is small and so it appears that most of the riverbanks are unmodified and the modified banks identified on the individual site surveys are not visible. It would be helpful if the figures in the report showed labeled points for the erosion/sedimentation sites that are identified in the report.

  Alabama Power will provide figures with a larger scale and with labeled erosion sites in the Final Report.

- Q9 - Page 20 of Tallapoosa River High Definition Stream Survey Final Report states that a confidence rating was used to indicate the clarity of the streambanks in the video and figures 14 and 17 of that report show areas where the video clarity was impaired and therefore the confidence in the accuracy of the streambank conditions/classifications is lower. As stated above, it would be helpful if the figures in the report showed labeled points for the erosion/sedimentation sites that are identified in the report. Do any of the areas with impaired video clarity coincide with areas that stakeholders identified as erosion/sedimentation sites or other sites that Alabama Power identified as part of this study? Do you intend to take any steps to deal with the impaired clarity data? Is so, how?

  Alabama Power will reexamine these areas to determine if sites with lower confidence coincided with identified erosion sites. If so, we will perform targeted surveys of these areas and update the Final Report accordingly.

- Q10 - In Figure 18 of the Tallapoosa River High Definition Stream Survey Final Report, there appears to be a missing ranking at river mile 37 for the right streambank. Could you explain this gap in the ranking?

  Alabama Power is reexamining this area and will include rankings in the Final Report.

- Q11 - For Figures 20 through 23 of the Tallapoosa River High Definition Stream Survey Final Report, please label the river mile ranges on the maps to help reviewers understand the starting and ending points of the study area and which segments of river are included.

  In Figure 26 of the Tallapoosa River High Definition Stream Survey Final Report, please move the scale bar and sources so that they are not covering the river segment and bank conditions at the bottom of the map.

  Alabama Power will revise this figure accordingly.

- Q12 - Can you identify where peaking pulses are attenuated downstream from Harris Dam under the current operating regime and volume of typical downstream releases? If so, are there any patterns in the downstream streambank conditions and observed levels of erosion along the segments of streambanks within the attenuation zone? Where are the identified erosion sites in relation to the length of the attenuation zone?

  Alabama Power will incorporate a discussion of water level fluctuations and any potential correlations with streambank erosion into the discussion section of the Final Report.

8.2 Alabama Rivers Alliance's Questions submitted in advance of the meeting

- Q13 - Will we have access to the High Definition Stream Survey video created by Trutta Environmental Solution as part of the Downstream Bank Stability Report?

  Yes, Alabama Power is investigating how to make the video footage available.

- Q14 - Table 3-2 shows streambank scored for the 15 most impaired areas downstream of Harris Dam. How was the Average Combination Bank Condition score (final column) computed? It does not appear to be an average of the "Average Left Bank Condition" and "Average Right Bank Condition" scores, which would yield a lower average scored. The averages showing for the left and right banks are mostly 3.0 or higher while the average combined bank condition scores are mostly below 3.0.

  Jason Moak (Kleinschmidt) noted that one column looks only at left bank and the other the only right bank. Every tenth mile those scores were averaged and ranked. Jack West (Alabama Rivers Alliance) said it still doesn't make sense why you have larger averages on both sides, and they are reduced in combination. Sarah Salazar (FERC) said that part of the table was confusing as well, and she is not certain that last column is informative. Jason said he agrees and was thinking that it may only make sense when there are impacts on both sides, like a transmission line crossing.

- Q15 - The report concludes in Section 5.0 that "None of the erosion sites surveyed were the result of fluctuations due to project operations." This conclusion seems in conflict with the assessment in the HDSS that impairment areas "were due to the fluctuating flows eroding the streambank within a few feet of the water surface and streambank interface." (Pg. 43 of Trutta Report).

  This statement refers to the reservoir. Because Harris is a storage reservoir, most of the erosion occurring in the reservoir is due to wave action from boats or winds.

- Q16 - Is Alabama Power completing a total suspended sediment analysis during the pre-pulse, pulse, and post-pulse time periods to see what sediment is getting moved from and to various locations?

  No, Alabama Power is not completing a total suspended sediment analysis.

- Q17 - Is Alabama Power conducting a historical, cumulative effects study of erosion since the dam's construction?

  Alabama Power is not performing a cumulative effects study.

- Q18 - Is Alabama Power assessing whether having a continuous minimum flow downstream may help with erosion and sedimentation problems?

  Yes. Alabama Power will use the model outputs to assess the difference in water level fluctuations.

- Q19 - Jack West asked why it seems that none of the erosion sites are due to operations.

  Most of the erosion issues downstream are not due exclusively to operations. For example, areas where trees and vegetation are being cleared are not due exclusively to operations, but water fluctuations could exacerbate erosion.

8.3 Donna Matthews' Questions submitted in advance of the meeting

- Q20 - Better Visualization of Erosion over the Past 50 Years: Do the erosion studies conducted during this permitting period compare pre-dam (baseline) river shape/contour with the current status of the river? Pre-dam analog photographs exist for comparison to current satellite imagery.

  Alabama Power has not compared pre-dam conditions to current conditions. Historical photographs may provide useful information for the cumulative impacts section of the license application and for FERC's use.

8.4 Participant Questions

- Q21 - Jimmy Traylor (Downstream Landowner) said he has no trees on the bank at his property and has little bank remaining. He asked Jason what he would consider that? Mr. Traylor noted that his trees have been falling in and steps that his grandfather built are disappearing since the dam was built and operation.

Jason Moak said he would locate Mr. Traylor's property on the data file to see how that area was scored. Jimmy Traylor responded that the Draft Erosion and Sedimentation Report says, "not much erosion" at his property. Mr. Traylor also noted that there is significant sedimentation in areas like Cornhouse Creek and No Business Creek where the water backs up during generation. He characterized it as "a mud pit" and this has significantly affected these tributaries. He believes Alabama Power is missing the mark on erosion. Mr. Traylor also noted that since the inception of the Green Plan, erosion has decreased. He noted that a continuous minimum flow would also help reduce erosion. Jack West (ARA) asked about data Alabama Power may have regarding bank conditions and erosion from the 1980s (pre-project and just after project was constructed), 1990s, and in the 2000s to do a cumulative effects study. If there is data, he asked that Alabama Power make it available so we can assess the impacts on a larger scale.

Carol Knight concurs with Jimmy Traylor and Albert Eiland can give anecdotal evidence of how the banks have eroded. Carol indicated that she has old maps from 40s and 50s of conditions during that time to compare what it is now. Those trees weren't necessarily clear cut. People downstream know what it used to be, and they know what it is now. She noted that they are having a hard time reconciling these things. There is significant erosion. It is not just because somebody is cutting trees or that they are letting cows access the river.

Jason Moak (Kleinschmidt) explained that he was not suggesting that where erosion occurs it is the landowners' fault. Jason emphasized that it is very important for downstream property owners to comment on any areas that downstream property owners believe the Draft Erosion and Sedimentation Report has mischaracterized the erosion and source of the erosion.

Maria Clark wanted to know why not do a GIS study. We have a lot of data, including the areas that are impaired. We have pictures. What I can see by following the data you have looks like the erosion is mostly in the river bends. With other projects, we have seen landowners have a lot to do with it by cutting trees for their river view. If we analyze with GIS what happened when the dam was built and 50 years later, we will be able to see the development. It is important to bring this information out for Alabama Power to show more clearly these project impacts using GIS.

Donna Matthews said she's been playing with maps and someone took old aerial photos and coordinates from landowners when they came to a meeting and shared erosion hot spots. One set is from 1964 and one set is from the 1940s. Donna indicated that if anyone is interested, they can overlay the google earth pictures. There are certain markers that local people have put together.

Jimmy Traylor said that his land is undeveloped except for maybe 200 yards and said they have never cut the timber, one of the last virgin hardwood bottoms around. Losing trees and losing bank. That is erosion.

Albert Eiland noted he lives about 2 miles below Jimmy Traylor and is on the outside of a natural curve, which will experience more damage than an inside curve. Mr. Eiland noted that historically there were 7-8 islands in the Tallapoosa River. Those old maps will show that. There is only one island left. Jimmy asked if it's Hodge's island. Albert said the island is on an inside curve, that's why it's still there. In spring of 2017 we experienced a lot of flooding. I lost 2 big trees. Has been losing trees and the bank. We have hauled a lot of rocks in there to keep it from washing away. Would be eroded away without the rocks.

Relevant to this discussion, Carol Knight submitted a comment via IM from a participant that had to drop off the meeting conference call. Her issue is that there are serious erosion issue and has gotten worse this year with all the rain and the river fluctuating up and down. Several places have large holes in the banks and many of the trees have washed away. She indicated that the water is extremely high even if there isn't a scheduled release.

- Q29 - Lake Watch: Has there been assessment/consideration of sedimentation in the Tallapoosa where it enters Lake Martin, where the bulk of the sediment settles out as the river current declines, as seen by large sediment bars that have formed below where Hillabee Creek enters the river?

  An assessment has not been done in that area. The Study Area extends through Horseshoe Bend. It is likely that bedload sediment naturally transported down Hillabee Creek settles out as it enters the upper reaches of Lake Martin, similar to what happens in the Little Tallapoosa River at the headwaters of Lake Harris.

- Q30 - Rachel asked about erosion areas on the lake that are anthropogenically attributed: She recommended that Alabama Power include in the Final Study Report the shoreline management classifications in the area where it appears erosion is occurring. Rachel noted that FERC identified erosion and sedimentation as something they would analyze for cumulative effects. There is a sense that the license application will need information on cumulative effects. Some of this will be anecdotal and this information may go into the analysis. FERC does look at cumulative effects, but it may not be something addressed directly by study report.

  Summer and winter pool contours would also be helpful for cumulative effects analysis, and Alabama Power will add the suggested information to the Final Report.

- Q31 – Charles Denman via email following the meeting: I agree with other participants that a comparison of historical photos with current conditions of the river would help to understand the flushing effects operations of the dam have on downstream erosion.

9 THREATENED AND ENDANGERED SPECIES STUDY

Jason Moak (Kleinschmidt) presented the progress on the Draft Threatened and Endangered Species study, which included the study purpose, data and activities collected to date, and remaining activities. Additional fieldwork is planned for summer 2020 for this study. Jason noted that no variances to this study plan are requested. Alabama Power distributed the Draft Desktop Assessment Report to stakeholders in April 2020, concurrently with filing the ISR.

9.1 FERC's questions submitted in advance of the meeting

- Q1 - Have the GIS overlays of T&E species habitat information and maps been completed (i.e., the map figures in Appendix B of the draft T&E species study report)? Or are there still steps to complete this component of the study? We suggest including project features, recreation areas, and other managed areas (e.g., timber harvest areas, wildlife management areas, etc.) on the T&E species maps in order to help determine the proximity of species ranges/habitats to project-related activities and identify the need for species-specific field surveys.

  Those maps are completed. Alabama Power will consider making the suggested additions.

- Q2 - While the draft T&E species study report indicates that additional field surveys for the fine-lined pocketbook freshwater mussel are planned for May 2020, the report does not include a description of the criteria used to determine which of the species on USFWS's official (IPaC) list of T&E species would be surveyed in the field. Please describe which species will be surveyed in the field and explain how and why they were selected. In addition, please describe any correspondence Alabama Power has had with FWS and state agencies regarding the T&E species selected for additional field surveys.

  Alabama Power is consulting with USFWS to determine which species have known historical occurrences or critical habitat intersecting the Project boundary or could reasonably be found within the Project boundary. Surveys will be performed for the palezone shiner due to information from USFWS regarding the possibility of existence in some tributaries within Skyline. Surveys of fine-lined pocketbook are being performed due to existing critical habitat in the upper Tallapoosa River above Lake Harris. Correspondence between Alabama Power and USFWS and state agencies as of the ISR filing is included as Attachment 2 of the Draft Threatened and Endangered Species Desktop Assessment.

- Q3 - Page 7 lists the sources for the ESA species information. The sources included USFWS's Environmental Conservation Online System (ECOS) but did not include IPaC. The official list is obtained through the IPaC report. Has an IPaC report been downloaded or are you using the IPaC report filed to the record by FERC staff?

The ECOS website was used as a source for life history, habitat, and range information in preparation of the desktop assessment. The IPaC list was used to identify species to include in the desktop assessment and potential field surveys.

- Q4 - Page 8 states that the existing land use data is not specific enough to determine if the 3,068 acres of coniferous forest within the Project Boundary at Lake Harris would be suitable for red-cockaded woodpecker. How do you propose to assess the suitability for red-cockaded woodpecker?

  Field observation at these coniferous forests could determine whether these areas contain suitable habitat. Specifically, Alabama Power would look for areas with little or no hardwood mid-story and over-story trees. Alabama Power would also look for larger, older longleaf pines, which make ideal cavity trees for this species in areas that were lacking hardwood mid-story and over-story. Alabama Power will perform this field observation if USFWS deems it necessary.

- Q5 - On pages 3, 10, and 26 there is mention of additional fieldwork planned for two mussel species (i.e., fine-lined pocketbook and Southern pigtoe) for May 2020. Please elaborate on the details of the additional survey work (e.g., survey location(s), sampling protocols and methodologies employed, and clarify which species will be included in the May 2020 assessment, etc.).

  In November 2019, surveys were conducted for fine-lined pocketbook on a 3.75 mile stretch of the Tallapoosa River where critical habitat is known to occur from the County 36 bridge to a shoal below the Highway 431 bridge. This endpoint was chosen, because only pool habitat was available another half mile downstream of this bridge. Six surveyors including USFWS, Alabama Power, and Kleinschmidt searched for the target species in 20-minute to one-hour segments at areas containing critical habitat and searched for additional areas with suitable habitat. Silty areas and piles of shells left by muskrats and raccoons were also searched. The introduced *Corbicula fluminea* (Asian clam) was the only bi-valve species observed in these piles. Because high water impeded the search in some areas and the cold weather may have caused mussels to burrow out of site, USFWS suggested another effort be made in the spring. Surveyors will search for fine-lined pocketbook and suitable habitat again in late spring/summer 2020, pending any COVID-19 restrictions. Southern pigtoe is not a species that we would reasonably expect to find in the Project boundary. It is known to occur in Cleburne County, which overlaps the Project boundary. However, documented historical range in that county exists exclusively in the Coosa River drainage basin. The Lake Harris Project Area does not contain any critical habitat areas for Southern pigtoe identified by the USFWS.

- Q6 - The descriptions of Alabama lampmussel and rabbitsfoot mussel on pages 11, 13, and 14 do not provide these species' host fish species. Are the host fish species currently unknown, or was this an inadvertent omission?

  The host fish species are currently unknown. Suitable hosts for rabbitsfoot populations west of the Mississippi River are shiner species such as blacktail shiner, cardinal shiner, red shiner, spotfin shiner, and bluntface shiner. There is not much

available information about rabbitsfoot host fishes east of the Mississippi River. Research has shown that lampmussels can successfully utilize rock bass, green sunfish, bluegill, smallmouth bass, spotted bass, largemouth bass, and redeye bass as host fish. It has also been reported that banded sculpin are potential host fish for lampmussels.

- Q7 - There appears to be a typo on page 16, in the description of Southern pigtoe mussel. The middle of the first paragraph refers to the glochidia of the finelined pocketbook mussel. Is this sentence misplaced, or does the information pertain to the southern pigtoe mussel (the subject of section 3.12)? Please clarify.

  This is a typo, and the information refers to the Southern pigtoe. The host fishes are accurate.

- Q8 - On page 19, in the first paragraph about the northern long-eared bat (NLEB), it is unclear why the discussion includes the statement about a low occurrence of this species in the "…southwestern region of Alabama" given that the project areas are located in the northeastern and mid-eastern portions of Alabama. Please clarify or correct this statement.

  This information is correct. The sentence is intended to describe the general distribution of the species in Alabama.

- Q9 - The draft T&E species study report states that there are no known NLEB hibernacula or maternity roost trees *within the Project Boundary*. However, it does not include information on known NLEB hibernacula *within 0.25 mile of the Project Boundary* and known NLEB maternity roosts *within 150 feet of the Project Boundary* (i.e., at Harris Lake and Skyline). In addition, the report mentions a couple of best management practices (BMPs), protective of some bat species, that Alabama Power implements during timber harvest activities and states that the BMPs have been expanded but not incorporated in the existing license. However, the report does not include the locations of Alabama Power's timber harvesting and other tree removal activities, or detailed descriptions of timber harvesting protocols and BMPs currently implemented within the Project Boundary. This information is important to understanding the affected environment for Indiana bat, NLEB, and/or other T&E species. This information could also be used for the streamlined consultation option for analyzing the potential project effects on NLEB (including within the buffer areas for hibernacula and maternity roost trees).

  Please complete the USFWS's NLEB streamlined consultation form and include it in the final T&E species study report. This form can be found at: https://www.fws.gov/southeast/pdf/guidelines/northern-long-eared-bat-streamlined-checklist.pdf. We recommend using FWS's definition of "tree removal" to guide your responses on the form (i.e., "cutting down, harvesting, destroying, trimming, or

manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by northern long-eared bats").[3]

Also, please update figures 3.14-1, 3.14-2, 3.14-3, 3.15-1, 3.15-2, and 3.15-3 which currently show "forested area" or "karst landscape" in relation to NLEB and Indiana bat habitats, to show Alabama Power's timber management areas within the Project Boundary, and other proposed managed areas (e.g., new/improved recreation areas, new quail management areas). This type of information is needed to meet another component of this study (i.e., "determine if [T&E species habitat at the project] are potentially impacted by Harris Project operations", as described on slide 5 of the Aug. 27, 2019, HAT 3 meeting).

Alabama Power will complete the NLEB streamlined consultation form to be included in the Final T&E Species Report and update the requested figures.

- Q10 - On page 21 and 22, in section 3.17, the discussion mentions an occurrence of little amphianthus within the Project Boundary at Lake Harris (Flat Rock Park) that was documented in 1995 and may be extirpated. Did the botanical surveys in that area of the project target that species? The top of page 22, states that "Vernal pools were not identified due to a lack of available data." Did the botanical surveys identify vernal pools in this area?

  The botanical inventory targeted all plant species existing within the Inventory Area, which is defined as the Blake's Ferry Pluton and is located adjacent to Flat Rock Park. Of the 365 plant species documented in the Inventory Area. Vernal pools were observed during surveys performed in 2019, however little amphianthus was not found in any of the pools.

- Q11 - On page 22, in section 3.18, the report states that the National Wetland Inventory data is not detailed enough to identify wetlands within the project area that contain white fringeless orchid's unique wetland habitat characteristics. Do you propose collecting more data on this subject?

  Alabama Power is consulting with USFWS and Alabama Natural Heritage Program experts to determine if these habitats are present within the Project Boundary.

- Q12 - On page 23, in section 3.19, the report states that the 16 extant populations of Prices' potato bean in Jackson County, occur on Sauta Cave National Wildlife Refuge, and near Little Coon Creek in the Skyline WMA. Please clarify whether or not any of the 16 populations occur within the Project Boundary at Skyline WMA.

  One extant population intersects the Project Boundary at Skyline and comprises 11 percent of the extant population occurring at Little Coon Creek. However, 89 percent of this single population occurs outside of the Project Boundary.

[3] 81 Fed. Reg. 1902 (January 14, 2016).

- Q13 - In Appendix B, figure 3.19, showing Price's potato bean habitat range, there is a 100-foot Stream Buffer within the Limestone Landscape layer shown on the map and legend. Please explain the significance of this buffer, including any regulatory requirements associated with this buffer. Please include this information in the Final T&E Species Study Report.

  Price's potato bean is known to exist in Little Coon Creek. This species seems to prefer low areas along near or along the banks of streams and rivers. The buffer indicated on the figure is not regulatory. It is meant to depict areas where this species could potentially occur based on known habitat preferences. We will include this information in the final report.

- Q14 - In the August 27, 2019, HAT 3 meeting summary, please clarify the following: How does Alabama Power define terms such as "sensitive time periods" in the context of timber harvesting? Evan Collins, of FWS, stated that the palezone shiner may be present in some of the lower reaches of the Tennessee River tributaries. Please clarify where these tributaries are located in relation to the Project Boundary.

  Alabama Power will include its timber harvesting BMPs as an appendix to the Final T&E species study report. Alabama Power is consulting with USFWS to perform an assessment to determine if palezone shiner are present in Little Coon Creek, which flows through portions of the Project Boundary at Skyline.

9.2 Alabama Rivers Alliance's Questions submitted in advance of the meeting

- Q15 - Is the additional fieldwork to identify mussels scheduled for May being pushed back or proceeding on schedule?

  The mussel identification fieldwork is proceeding on schedule; however, fieldwork dates are subject to change due to COVID-19 restrictions. Alabama Power will proceed with fieldwork at the earliest possible date during the spring/summer 2020.

9.3 Participant Questions

- Q16 - Ken Wills (Alabama Glade Conservation Association) - Are the 138.4 acres of granite geology west of the Project Boundary on Alabama Power land, other private land, or public land? How much is public and private land and how much is Flat Rock?

  There are private property outcroppings in that area. The Flat Rock Park itself is approximately 25 acres.

- Q17 - Jimmy Traylor asked why there are no [Threatened and Endangered Species] studies below the dam and how Skyline effects water below the dam.

  Based on consultation with USFWS, no threatened or endangered species have been identified below the dam. Skyline does not affect the water below the dam.

- Q18 - Sarah Salazar (Federal Energy Regulatory Commission (FERC) asked if Alabama Power could elaborate on how they decided which species to perform field surveys for. How was the list of species being surveyed narrowed down with USFWS?

  Determining which species to search for in the field is an ongoing process. The consultation details will be in the final report. This desktop assessment is being used as an initial step toward determining which species to focus on in the field.

- Q19 - Sarah asked if IPaC was being used to determine which threatened or endangered species were in the Project Boundary. If USFWS makes any changes to the inventory of listed species in the Project Boundary, that needs to be considered.

  The ECOS website was used as a source for life history, habitat, and range information in preparation of the desktop assessment. The IPaC list was used to identify species to include in the desktop assessment and potential field surveys.

- Q20 - Sarah said that additional information is needed for a streamlined consultation on the Northern long-eared bat. The buffer zones, which are within 0.25 miles of a hibernaculum at any time or within 150 feet of a known occupied maternity roost tree from June through July, were not included in the report. The report seems to be focused on what has been reported in the Project Boundary, but the effects of tree removal need to be analyzed.

  Consultation on the Northern long-eared bat is ongoing.

- Q21 - Evan Collins (USFWS) said he does not have a copy of the best management practices for consultation on bats and that information would be beneficial to mapping the buffer zone.

  Alabama Power has this information and will provide it to Evan Collins.

- Q22 - Jimmy Traylor asked why no federally listed species below the dam are being studied.

  No listed species have been documented in the Tallapoosa River below the Harris Dam.

10 DOWNSTREAM AQUATIC HABITAT STUDY

Jason Moak (Kleinschmidt) presented the progress on the Downstream Aquatic Habitat Study, which included the study purpose, data and activities collected to date, and remaining activities. Jason noted that no variances to this study plan are requested, and the Draft Study Report will be distributed to stakeholders in June 2020.

10.1 Participant Questions

- Q1 - Jimmy Traylor (Downstream Landowner) asked if the temperature component would be included in the draft report? Jimmy commented that 3 months of data will not provide enough information.

  Depending upon the timeframe for date processing, Alabama Power may be able to include the temperature component in the draft report. Jason Moak (Kleinschmidt) clarified that the level loggers have been operational since June 2019 and will continue to gather data through June 2020.

- Q2 - Alan Creamer (FERC) stated that only a limited number of alternatives are being tested and that there may be additional scenarios that stakeholders would like to see modeled based on the outcomes of these studies. Alan suggested that FERC may need to meet with Alabama Power to decide how best to approach this study and decide whether a modified study plan is needed.

  Jason Moak (Kleinschmidt) indicated that once the model is complete, it would be possible to run different operational scenarios.

- Q3 - Donna Matthews asked if the completed model could analyze optimal conditions, or what would be needed to achieve optimal conditions. Could the model be adjusted to see the effects of change on the outputs?

  Alan Creamer (FERC) suggested that FERC may need to meet with Alabama Power to decide how best to approach this study and decide whether a modified study plan is needed.

- Q4 - Jimmy Traylor (Downstream Landowner) asked if Elise Irwin's studies are being considered.

  The previous studies conducted by Elise Irwin are being used in the Aquatic Resources study and in the desktop assessment.

11 AQUATIC RESOURCES STUDY

Jason Moak (Kleinschmidt) presented the progress on the Aquatic Resources Study, which included the study purpose, data and activities collected to date, and remaining activities. Auburn University has a primary role in conducting this study, which includes fieldwork and laboratory testing (i.e., bioenergetics). Jason noted that no variances to this study plan are requested, and the Draft Study Report will be distributed to stakeholders in July 2020.

11.1 Participant Questions

- Q1 - Ken Wills asked if there were any dates set for our next electronic meeting.

  Angie Anderegg said meetings have not been scheduled to-date, but Alabama Power will let the HAT participants know as soon as dates are selected.

12 NEXT STEPS IN THE ILP

Kelly Schaeffer reviewed the next steps in the ILP. She noted that participants should file their comments on the ISR meeting summary and the draft study reports with FERC no later than June 11, 2020.

- Q1 - Maria Clark asked if the questions or comments would be posted on the website?

  Alabama Power will file the ISR meeting summary with FERC on May 12, 2020, and the document will also be posted on the Harris relicensing website (www.harrisrelicensing.com).

APPENDIX A

ISR Meeting Participants

Harris Relicensing Initial Study Report Meeting
April 28, 2020

Attendees:

Alabama Department of Conservation and Natural Resources
Damon Abernethy
Todd Fobian
Keith Gauldin
Keith Henderson
Matt Marshall
Amy Silvano
Chris Smith

Alabama Department of Economic and Community Affairs, Office of Water Resources
Brian Atkins
Dow Johnston

Alabama Department of Environmental Management
Jennifer Haslbauer
Fred Leslie
David Moore

Alabama Glade Conservation Coalition
Ken Wills

Alabama Historical Commission
Amanda McBride
Eric Sipes

Alabama Power
Angie Anderegg
Dave Anderson
Wes Anderson
Jeff Baker
Jason Carlee
Keith Chandler
Jim Crew
William Gardner
Mike Godfrey
Chris Goodman
Stacey Graham
Rodger Jennings
Ashley McVicar
Tina Mills

Alabama Power (continued)
Kenneth Odom
Courtenay O'Mara (Georgia Power)
Alan Peeples
Jennifer Rasberry
Shelia Smith
Thomas St. John

Alabama Rivers Alliance
Martha Hunter
Jack West

Auburn University
Dennis Devries
Ehlana Stell
Rusty Wright

Cherokee Nation
Elizabeth Toombs

Downstream Property Owners
David Chandler, Historian
Albert Eiland, Wadley
Carol Knight, Wadley
Donna Matthews, Wedowee
Jimmy Traylor, Malone
Melissa Willis, Clay County Extension

Environmental Protection Agency
Maria Clark
Lisa Perras Gordon
Lydia Mayo

Federal Energy Regulatory Commission
Allan Creamer
Danielle Elefritz
Rachel McNamara
Sarah Salazar
Monte Terhaar

General Stakeholders
Charles Denman
Matthew Stryker

Kleinschmidt
Kate Cosnahan
Colin Dinken
Amanda Fleming
Mike Hross
Jason Moak
Kevin Nebiolo
Kelly Schaeffer
Dr. Kevin Hunt - Recreation Subconsultant

Lake Martin Resource Association
Steve Forehand
John Thompson

Lake Wedowee Property Owners Association
Barry Morris

Muscogee (Creek) Nation
RaeLynn Butler
Turner Hunt
LeeAnn Wendt

National Park Service
Jeff Duncan

U.S. Army Corps of Engineers
Cindy Donald
James Hathorn

U.S. Fish and Wildlife Service
Evan Collins

U.S. Geological Survey
Elise Irwin

APPENDIX B

ISR Meeting Presentation

R.L. Harris Dam Relicensing
FERC No. 2628

Initial Study Report Meeting
April 28, 2020

HARRIS DAM
RELICENSING

Welcome and Roll Call

Roll Call by Organization

HARRIS DAM
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Phone Etiquette

- ❑Be patient with any technology issues
- ❑Follow the facilitator's instructions
- ❑Phones will be muted during presentations
- ❑Follow along with PDF of presentations
- ❑Write down any questions you have for the designated question section
- ❑Clearly state name and organization when asking questions
- ❑Facilitator will ask for participant questions following each section of the presentation

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Agenda

- ❑ 9 AM Introduction/Roll Call/Safety Moment
- ❑ Initial Study Report Overview
  - Cultural Resources (HAT 6)
  - Recreation Evaluation (HAT 5)
  - Project Lands Evaluation (HAT 4)
  - Operating Curve Feasibility Analysis and Downstream Release Alternatives (HAT 1)
  - Water Quality and Erosion and Sedimentation (HAT 2)
  - Threatened and Endangered Species; Downstream Aquatic Habitat; Aquatic Resources (HAT 3)
- ❑ Next Steps in the FERC Process

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HAT 6 Cultural Resources

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Cultural Resources Programmatic Agreement and Historic Properties Management Plan

Study Purpose and Methods Summary

- ❑ Develop Historic Properties Management Plan and Programmatic Agreement.

Study Progress

- ❑ Identify Sites for Further Evaluation and Initial Evaluation Methods
- ❑ Propose Historic Properties Management Plan Outline
- ❑ Five HAT Meetings, including one Site Visit
- ❑ Inadvertent Discovery Plan, Traditional Cultural Properties Identification Plan Filed in April 2020

HARRIS DAM RELICENSING

Cultural Resources Programmatic Agreement and Historic Properties Management Plan

Variance from Study Plan and Schedule

- ❑ Alabama Power continues to work with the Alabama SHPO for concurrence regarding the Harris APE
- ❑ File the final APE (with maps) by June 30, 2020

Remaining Activities /Modifications/Other Proposed Studies

- ❑ Survey of Sites Identified for Further Evaluation (96 sites)
- ❑ Finalize Area of Potential Effects (June 2020)
- ❑ Continue developing Historic Properties Management Plan
- ❑ Complete survey work and TCP identification (February 2021)
- ❑ Complete eligibility assessments for known cultural resources (July 2021)
- ❑ Issue determination of effect on historic properties (July 2021)
- ❑ Draft HPMP (July 2021)
- ❑ No additional studies have been proposed beyond that in FERC's SPD

QUESTIONS?

HARRIS DAM RELICENSING

HAT 5 Recreation Evaluation

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Recreation Evaluation

Study Purpose and Summary of Methods

- ❑ Evaluate baseline recreation at the Harris Project and downstream
  - Gather baseline information on existing Project recreation facilities, existing Project recreational use and capacity, and estimated future demand and needs at the Harris Project
  - Determine how flows in the Tallapoosa River downstream of Harris Dam affect recreational users and their activity

Study Progress

- ❑ Lake Harris Public Access User Counts – March to December 2019
- ❑ Lake Harris Public Access Questionnaires – May to December 2019
- ❑ Tallapoosa River User and Surveys – May to October 2019
- ❑ Skyline Use Data from ADCNR – August 2019
- ❑ Recreation Facilities Inventory – October 2019
- ❑ HAT 5 Meeting to discuss Tallapoosa River Landowner Survey Research Plan (Research Plan) - December 11, 2019
- ❑ Downstream Landowner and Anonymous User Surveys – February – April 2020

HARRIS DAM RELICENSING

Recreation Evaluation –Details of Lake Harris Public Access, User Counts

- 1,368 Shifts
- Paper Forms Vehicle and Activity Counts
- “Instantaneous Count”
- Reduced Flat Rock Park Schedule
- Daylight Savings Time
- Data Cleaning
- Data Analysis

HARRIS DAM RELICENSING

Recreation Evaluation –Details of Lake Harris Public Access, Questionnaires

- 1,357 Completed
- Majority Collected at Highway 48, Flat Rock Park, and Big Fox Creek
- Four Questions
- Intercept Technique
- Paper Forms

HARRIS DAM RELICENSING

Recreation Evaluation – Tallapoosa River User, Methods

- Calculated Total Visitation (Effort) and Daily Use
- Measured User Attitudes/Perceptions About Instream Flow and Trip Satisfaction
- Obtained Catch Information from Anglers
- Determined How Instream Flow Affected Effort, Perception of Instream Flow and Trip Satisfaction, and Species of Fish Targeted, Caught, and Retained

HARRIS DAM
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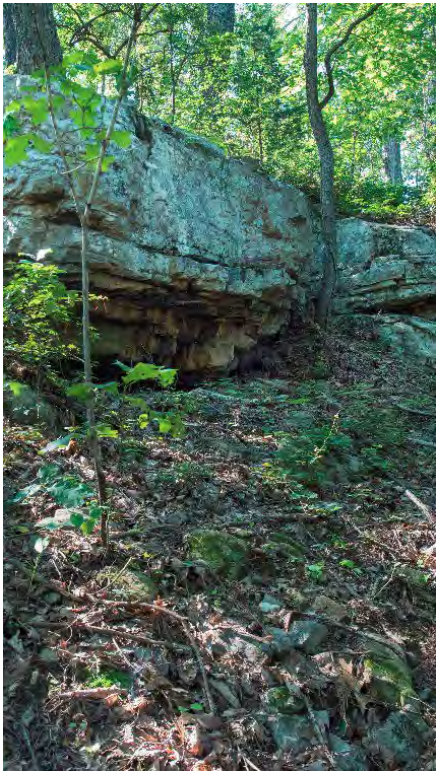
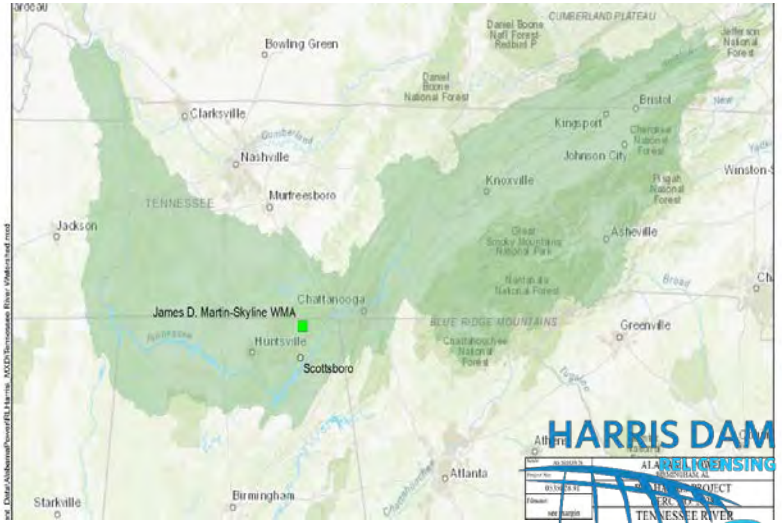
Recreation Evaluation- Skyline Use Data (ADCNR)





Recreation Evaluation –Details of Lake Harris Public Access, Inventory

- ❑ Inventoried and Mapped
- ❑ Summarized Who Owns, Operates, and Manages
- ❑ Evaluated the Condition of the Recreation Sites and Facilities
  - Opportunities for Persons with Disabilities to Participate in Recreation, Where Feasible
  - Public Safety Features

Recreation Evaluation – Tallapoosa River Landowners Survey Research Plan

- ❑ Downstream Landowners
- ❑ Recreational Users
- ❑ December 11, 2019 HAT 5 Meeting
- ❑ December 19, 2019 Tallapoosa River Landowner Survey Research Plan

Preview- Draft Recreation Evaluation Report

- Introduction
- Background
- Methods
  - Data Collection
  - Analysis
- Results
  - Existing Use
  - Future Use
  - Needs
- Conclusions
- References
- Appendices

HARRIS DAM RELICENSING

RECREATION EVALUATION

Variance from the Study Plan and Schedule

- ❑ Added the Tallapoosa River Downstream Landowner Survey and Tallapoosa River Recreation User Survey
- ❑ File the Draft Harris Project Recreation Evaluation report in August 2020 (rather than June 2020)
- ❑ March 2020 HAT 1 meeting cancelled due to COVID-19

Remaining Activities/Modifications/Other Proposed Studies

- ❑ Recreation Data Reports from Subcontractors
- ❑ Draft Recreation Evaluation Study Report
- ❑ No additional studies have been proposed beyond that in FERC's SPD

QUESTIONS?

HARRIS DAM RELICENSING

HAT 4 Project Lands Evaluation

HARRIS DAM
RELICENSING

PROJECT LANDS EVALUATION

Study Purpose and Methods Summary

- ❑ **Phase I**: Identified lands to be added to, removed from, or reclassified within the current Harris Project Boundary.
  - HAT 4 meeting, desktop analysis, draft map of changes
- ❑ **Phase II**: develop a Wildlife Management Program (WMP) and a Shoreline Management Plan (SMP) to be filed with License Application.
  - Utilizes results from Phase I evaluation, incorporation of study data

Study Progress

- ❑ Presented proposed land changes, including tract by tract description and maps
- ❑ HAT 4 meeting to discuss proposed changes (09/11/2019)
- ❑ Requested feedback from HAT 4 regarding the Project Lands proposal
- ❑ Evaluated acreage at Skyline to determine suitability for bobwhite quail habitat
- ❑ Prepared Draft Phase 1 Project Lands Evaluation Study Report
- ❑ Conducted a botanical inventory of a 20-acre parcel at Flat Rock (field work & final report complete)

HARRIS DAM RELICENSING

PROJECT LANDS EVALUATION

Variance from the Study Plan and Schedule

- ❑ No variance from the study plan or schedule.

Remaining Activities/Modification/Other Proposed Studies

- ❑ Review comments on Draft Phase 1 Project Lands Study Report and modify Final Report, as applicable
- ❑ Conduct the botanical inventory survey on additional 21 acres adjacent to previously surveyed area at Flat Rock Park (Spring and Fall 2020; report in January 2021)
- ❑ Complete Phase 2 methods and develop draft Wildlife Management Plan and Shoreline Management Plan
- ❑ No additional studies have been proposed beyond that in FERC's SPD

QUESTIONS?

HARRIS DAM RELICENSING

HAT 1 Project Operations

- ❑Operating Curve Change Feasibility Analysis
- ❑Downstream Release Alternatives

Operating Curve Change Feasibility Analysis

Study Purpose and Methods Summary

- ❑ To evaluate, in increments of 1 foot, from 786 feet msl to 789 feet msl, Alabama Power's ability to increase the winter pool elevation and continue to meet Project purposes

Study Progress

- ❑ RES-Sim outflow hydrographs developed
- ❑ HEC-RAS model complete; all four winter curve changes have been modeled with design flood
- ❑ Navigation, ADROP and Hydrobudget analyses
- ❑ Flood frequency analysis
- ❑ Draft report distributed to stakeholders

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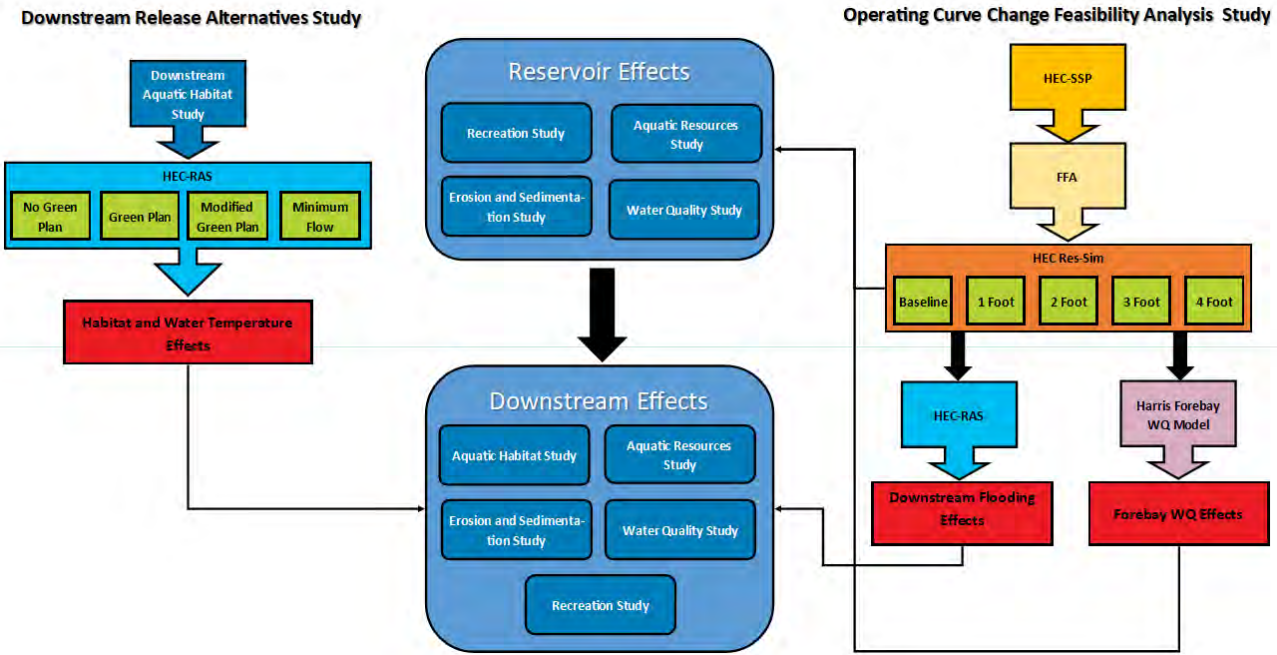

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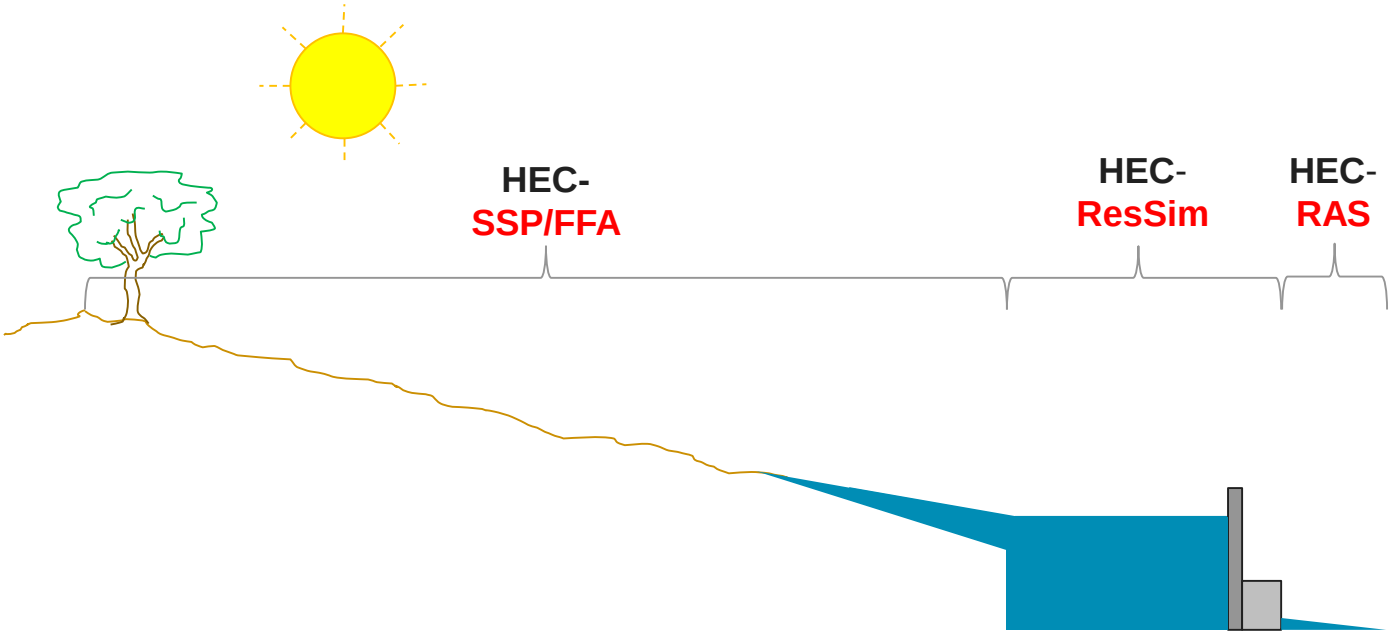
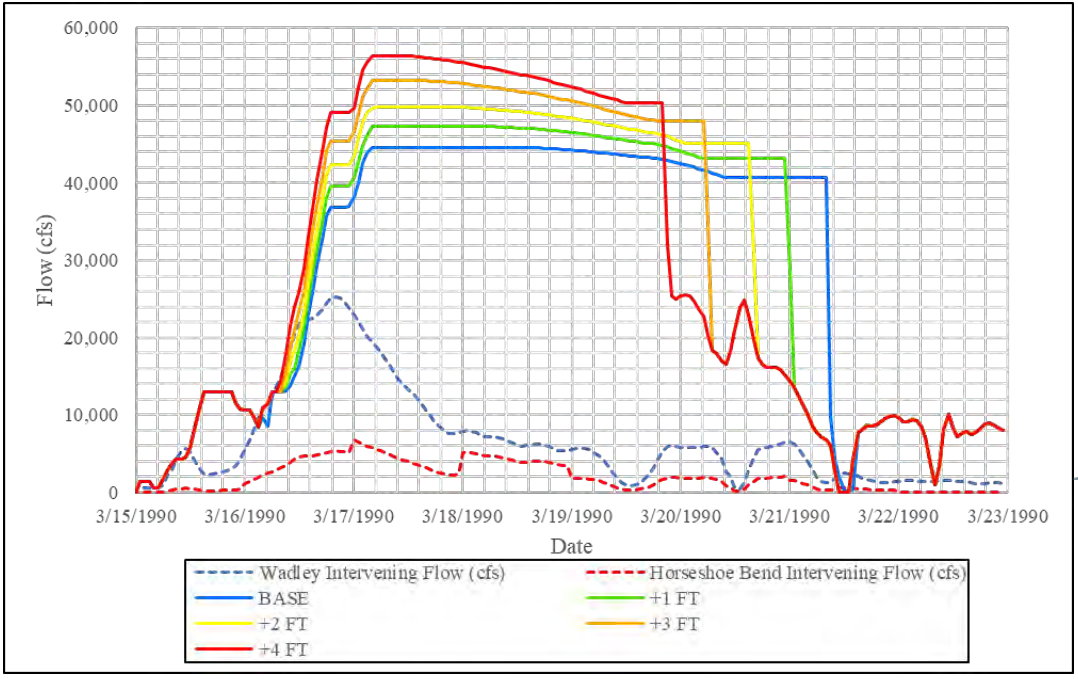
Where the models are used…



HARRIS DAM
RELICENSING

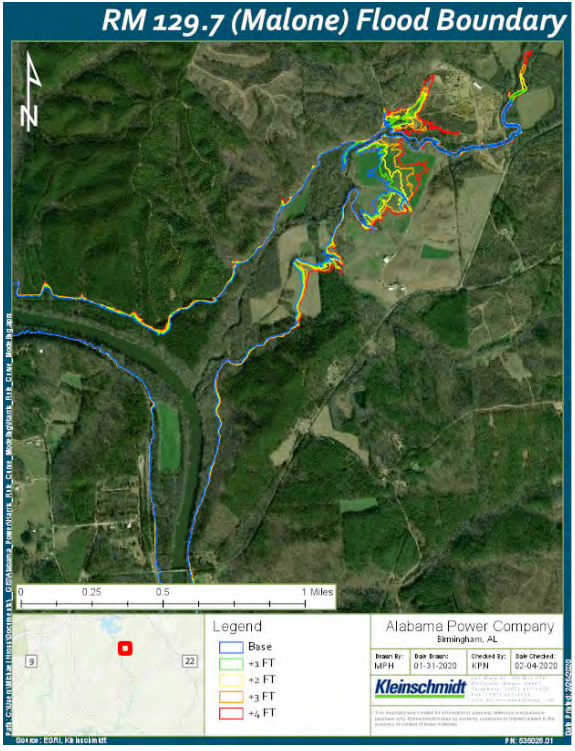
HEC-RAS – MODELED FLOWS

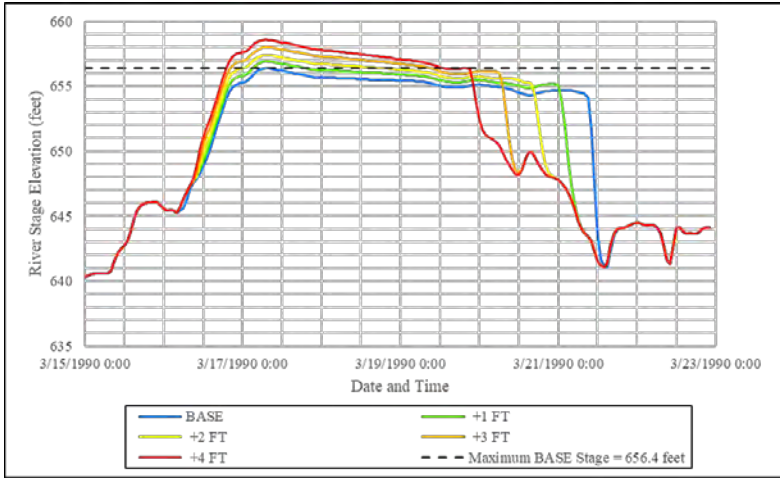
- Base scenario (i.e., existing) and 4 rule curve simulations
  - +1 ft, +2 ft, +3 ft, +4ft
- Intervening flows included in model
  - Flows contributed to river by watershed downstream of the dam
  - Between Harris Dam and Wadley, AL
  - Between Wadley, AL and Horseshoe Bend



HARRIS DAM RELICENSING

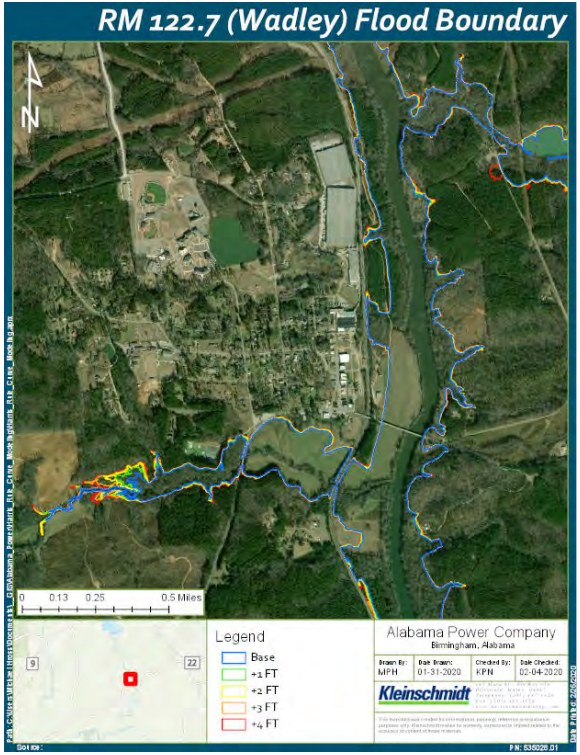
HEC-RAS – MODELING RESULTS

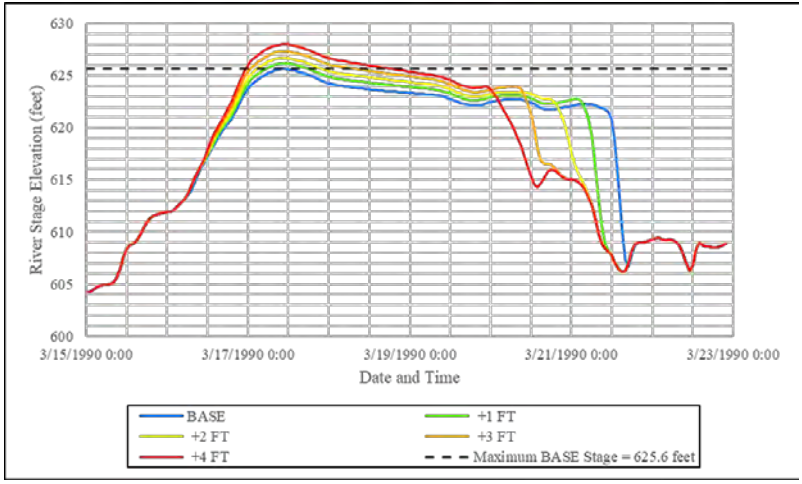




HARRIS DAM
RELICENSING

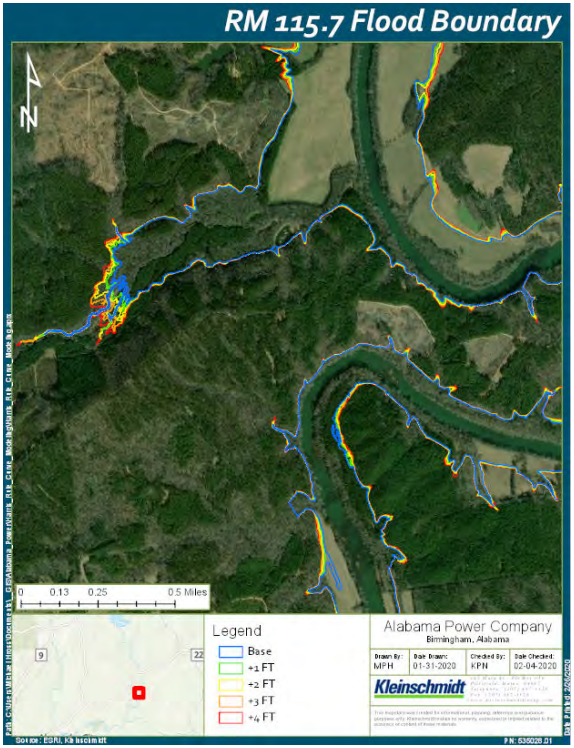
HEC-RAS – MODELING RESULTS

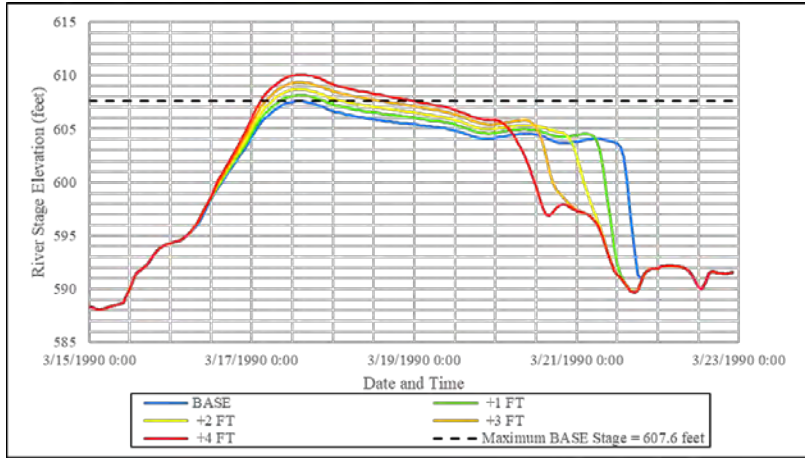




HARRIS DAM RELICENSING

HEC-RAS – MODELING RESULTS





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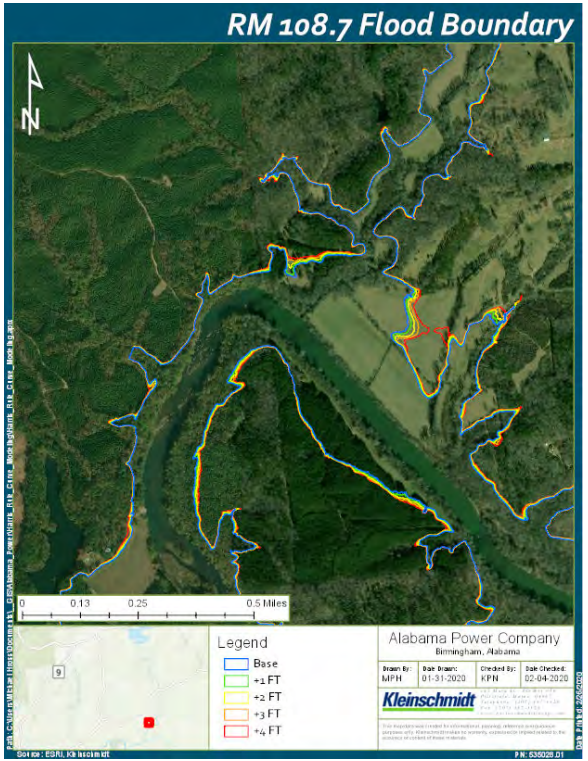
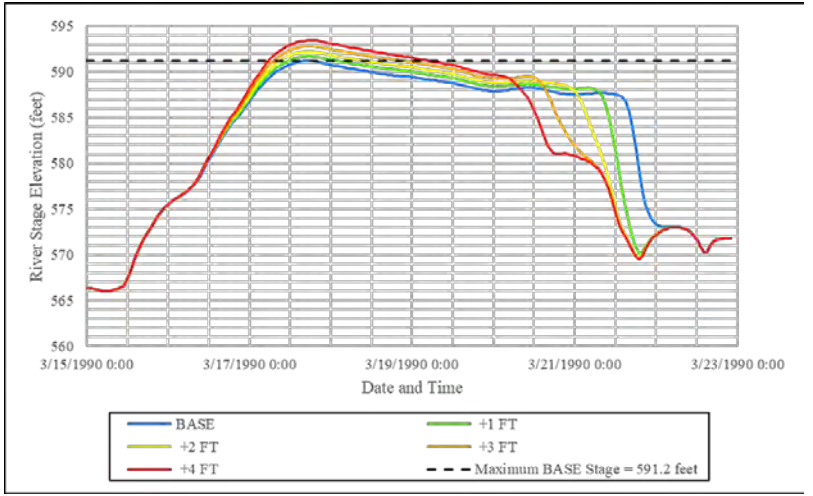
HEC-RAS – MODELING RESULTS





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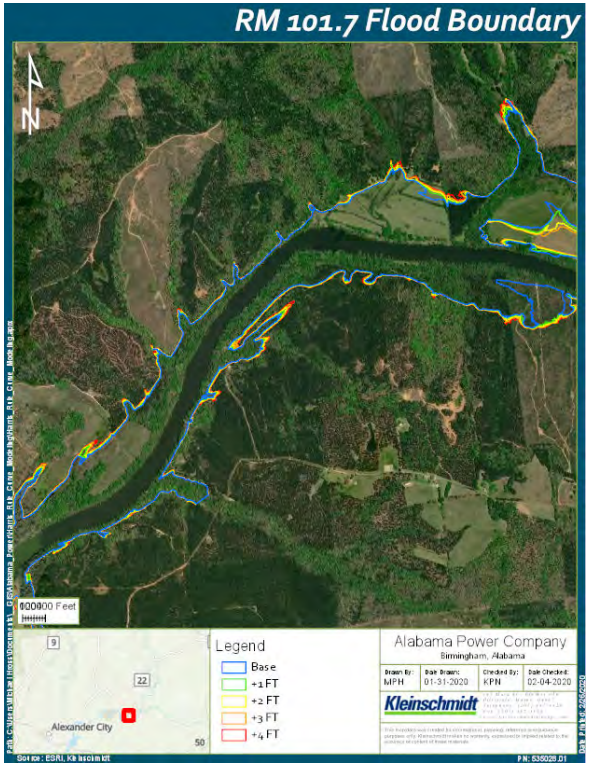
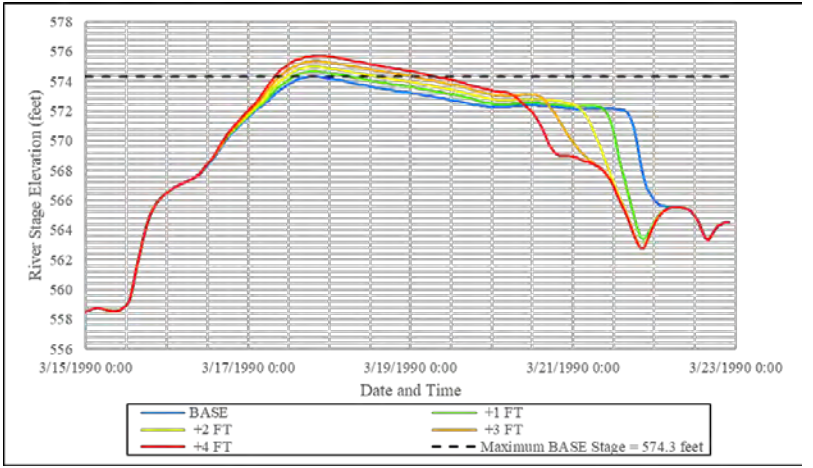
HEC-RAS – MODELING RESULTS





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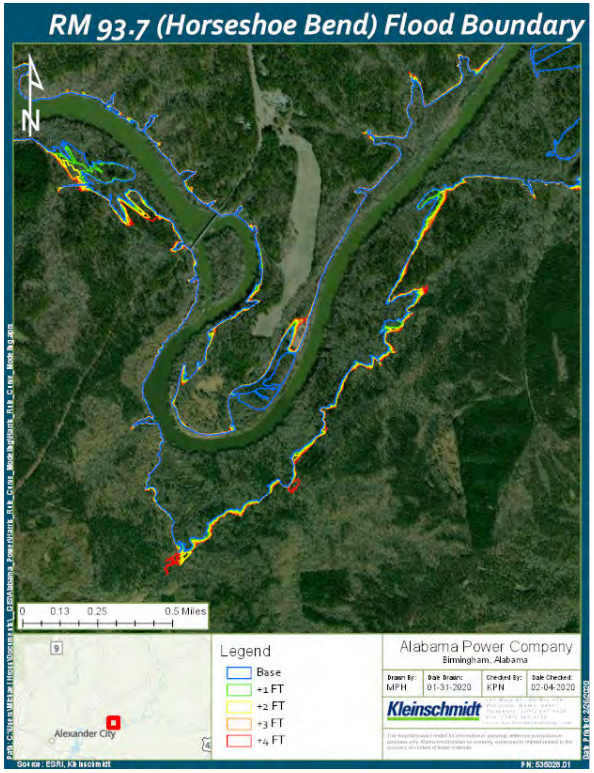
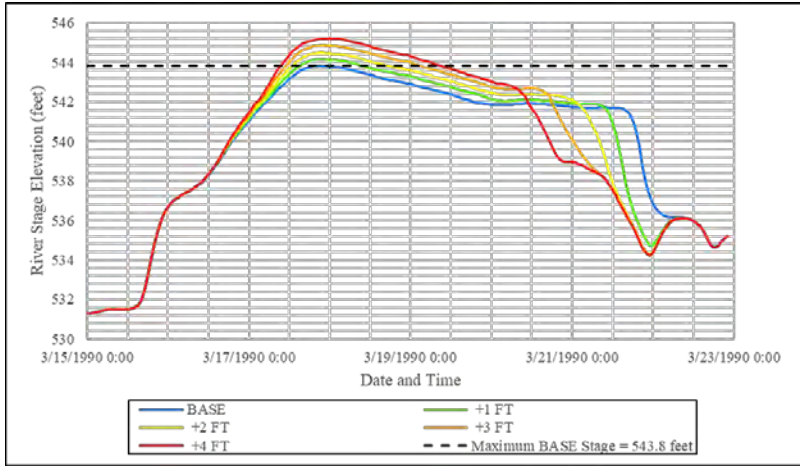
HEC-RAS – MODELING RESULTS





HARRIS DAM RELICENSING

HEC-RAS – MODEL RESULTS

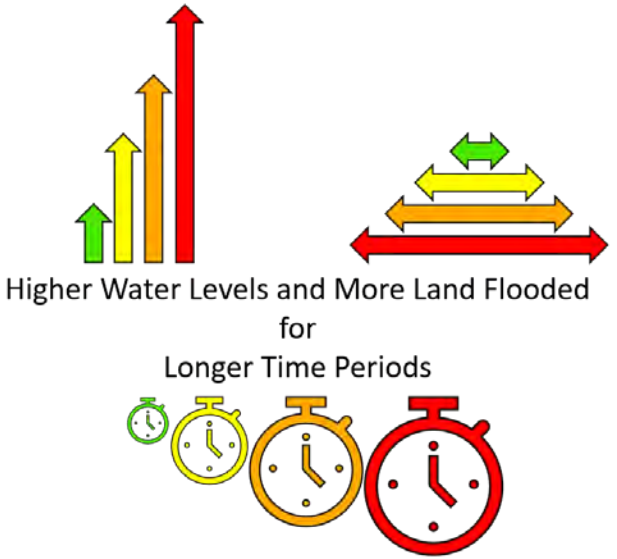
Location	Distance from Dam (miles)	Max Water Surface Rise (feet)			
		+ 1 foot	+ 2 feet	+ 3 feet	+ 4 feet
RM 129.7 (Malone, AL)	7	0.5	1.0	1.6	2.2
RM 122.7 (Wadley, AL)	14	0.5	1.1	1.7	2.4
RM 115.7	21	0.6	1.1	1.8	2.5
RM 108.7	28	0.5	1.0	1.6	2.2
RM 101.7	35	0.4	0.7	1.1	1.4
RM 93.7 (Horseshoe Bend)	43	0.3	0.7	1.0	1.4

Location	Distance from Dam (miles)	Duration above Baseline Condition Max Elevation (hours)			
		+ 1 foot	+ 2 feet	+ 3 feet	+ 4 feet
RM 129.7 (Malone, AL)	7	15	43	61	67
RM 122.7 (Wadley, AL)	14	12	19	32	43
RM 115.7	21	13	21	34	46
RM 108.7	28	14	26	38	48
RM 101.7	35	17	27	40	48
RM 93.7 (Horseshoe Bend)	43	18	29	39	47

HARRIS DAM
RELICENSING

HEC-RAS - SUMMARY

- ❑Any change in the operating curve causes:
  - ❑ increased maximum stage
  - ❑ increase in inundation,
  - ❑ increase in duration
- ❑ Most flooding occurs where tributaries enter Tallapoosa River
- ❑ Will need to evaluate effects on downstream structures



HARRIS DAM
RELICENSING

OPERATING CURVE CHANGE FEASIBILITY ANALYSIS

Variance from Study Plan and Schedule

- ❑ March 2020 HAT 1 meeting cancelled due to COVID-19

Remaining Activities/Modification/Other Proposed Studies

- ❑ Draft Phase 1 study report comments due June 11, 2020
- ❑ Begin Phase 2 analysis on effects of winter operating curve on other resources
- ❑ Present methods for the Lake Recreation Structure Usability at Winter Pool Alternatives phase 2 analysis to HAT 1 and HAT 5
- ❑ Present methods for evaluating effects on inundated structures downstream of Harris Dam
- ❑ No additional studies have been proposed beyond that in FERC's SPD

QUESTIONS?

HARRIS DAM RELICENSING

Downstream Release Alternatives

Study Purpose and Methods Summary

- ❑ To evaluate the effects of pre- and post- implementation of Green Plan operations, a continuous minimum flow of 150 cfs, and an alternative/modified Green Plan operation on Project resources.

Study Progress

- ❑ RES-Sim outflow hydrographs developed
- ❑ HEC-RAS model complete;
- ❑ Navigation, ADROP and Hydrobudget analyses
- ❑ Draft report distributed to stakeholders

HARRIS DAM RELICENSING

HEC-RAS – MODELED SCENARIOS

- 3 Downstream Release Alternative Plans
  - Pre-Green
  - Green Plan
  - 150 cfs Continuous Minimum Flow
- 2001 Selected as an average year
  - Intervening flows included in model
    - Flows contributed to river by watershed downstream of the dam
    - Between Harris Dam and Wadley, AL
    - Between Wadley, AL and Horseshoe Bend
  - Intervening flow data from USGS gages at Wadley, 02414500 and near Horseshoe Bend, 02414715

HARRIS DAM
RELICENSING

PHASE 1 MODELING RESULTS

- ❑Lake Level Impacts: none
- ❑Generation Impacts
  - Pre-Green Plan: + $357,000 per year
  - Green Plan: none (current operation mode)
  - 150 cfs Continuous Minimum Flow: undetermined
- ❑Flood Control Impacts: none
- ❑Navigation Impacts: none
- ❑Drought Operation Impacts: none

HARRIS DAM
RELICENSING

DOWNSTREAM RELEASE ALTERNATIVES

Variance from Study Plan and Schedule

- ❑ March 2020 HAT 1 meeting cancelled due to COVID-19

Remaining Activities/Modification/Other Proposed Studies

- ❑ Draft Phase 1 study report comments due June 11, 2020
- ❑ Begin Phase 2 analysis on effects of downstream release alternatives on other resources
- ❑ No additional studies have been proposed beyond that in FERC's SPD

QUESTIONS?

HARRIS DAM RELICENSING

HAT 2 Water Quality and Use

- ❑ Water Quality Study
- ❑ Erosion and Sedimentation Study

HARRIS DAM
RELICENSING

WATER QUALITY

Study Purpose and Methods Summary

- Summarizes data collected from 2017 through 2019 from Alabama Power, Alabama Department of Environmental Management (ADEM), and Alabama Water Watch (AWW)
- Supports the required 401 Water Quality Certification by conducting dissolved oxygen and water temperature monitoring in the tailrace and Harris Reservoir forebay
- Identifies any possible areas of water quality concern by HAT 2 participants

Study Progress

- Held HAT 2 meeting on September 11, 2019
- HAT 2 stakeholders identified one location of water quality concern: the Foster's Bridge area at Lake Harris
- Distributed Draft Water Quality Report March 9, 2020
- Collected dissolved oxygen (DO) and temperature data at two locations downstream of the dam and monthly vertical profiles in the Harris Reservoir forebay

HARRIS DAM RELICENSING

WATER QUALITY

Data Collection Results

- ❑ Generation data immediately downstream of Harris Dam in 2018 and 2019 had dissolved oxygen (DO) readings greater than 5 milligrams per liter (mg/L) for 94 percent of all measurements
- ❑Continuous monitoring for generation and non-generation in 2019 had DO levels greater than 5 mg/L for 99.9 percent of all measurements
- ❑Several low DO level readings in 2017 can be attributed to severe drought that impacted the Harris Reservoir in the summer and fall of 2016, where inflows to the lake were at historic lows, causing stronger stratification of Lake Harris
- ❑Data collected by ADEM at Harris Dam, Wadley, and Horseshoe Bend had DO levels above 5 mg/L at each sampling event
- ❑Continuous monitoring at Malone indicated that the DO levels were greater than 5 mg/L for 99 percent of the monitoring period

WATER QUALITY

Variance from the Study Plan and Schedule

- ❑Alabama Power intends to submit an application to ADEM for the 401 Water Quality Certification in April 2021, not in April 2020 as noted in the FERC SPD.

Remaining Activities/Modification/Other Proposed Studies

- ❑Comments on Draft Water Quality Study Report due June 11, 2020
- ❑Review comments on the Draft Water Quality Study Report and modify the Final Report, as applicable
- ❑ Prepare the 401 WQC application and submit to ADEM in April 2021
- ❑ No additional studies have been proposed beyond that in FERC's SPD

QUESTIONS?

HARRIS DAM RELICENSING

EROSION AND SEDIMENTATION

Study Purpose and Methods Summary

- ❑ Identify any problematic erosion sites and sedimentation areas and determine the likely causes
  - Identify erosion and sedimentation sites
  - Assess lake erosion sites using a qualified Erosion and Sediment Control Professional
  - Assess bank erosion susceptibility in Tallapoosa River from Harris Dam through Horseshoe Bend
  - Assess sedimentation sites by examining available lake photography and data (LIDAR) and analyzing with Geographic Information System (GIS)

Study Progress

- ❑ May 1, 2019 email to HAT 2 members distributed maps of sites identified for assessment and requested additional sites
- ❑ September 11, 2019 HAT 2 meeting – Reviewed study plan and last call for erosion and sedimentation sites
- ❑ Lake erosion site assessments performed in December 2019
- ❑ Bank erosion susceptibility assessment performed in May 2019
- ❑ Draft Erosion and Sedimentation Study Report distributed to HAT 2 on March 17, 2020

HARRIS DAM RELICENSING

Erosion and Sedimentation

Lake Harris Erosion Assessment

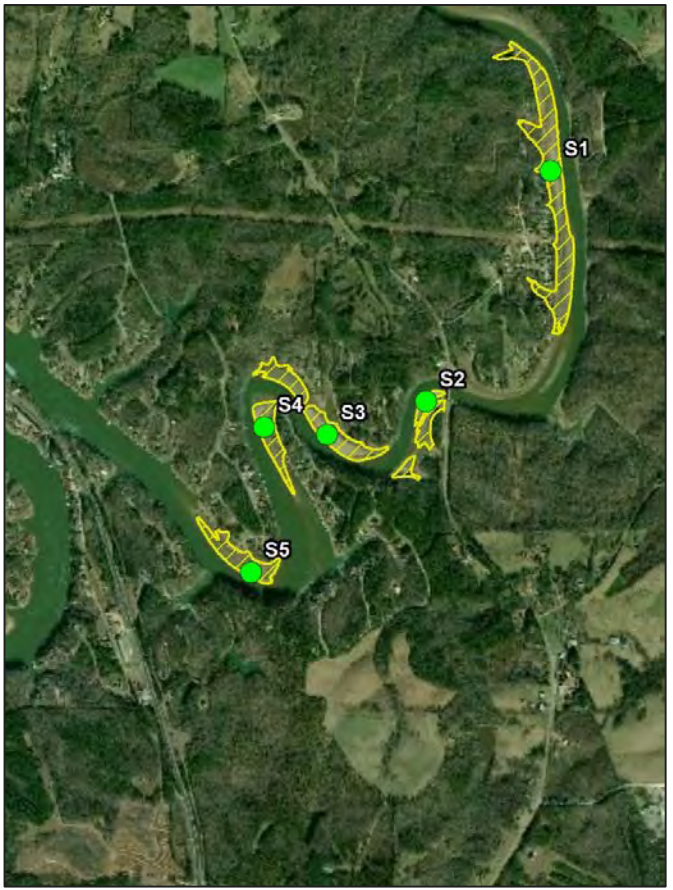
- ❑24 sites assessed
  - 8 sites – no erosion
  - 16 sites with erosion due to land use (12), anthropogenic (6), and/or natural factors independent of Project operations (8).

HARRIS DAM RELICENSING

Erosion and Sedimentation

Lake Harris Sedimentation Assessment

- 9 sites assessed – most in Little Tallapoosa arm
- GIS analysis estimated 120 acres
- 25% of Little Tallapoosa River basin is hay/pasture fields



Erosion and Sedimentation

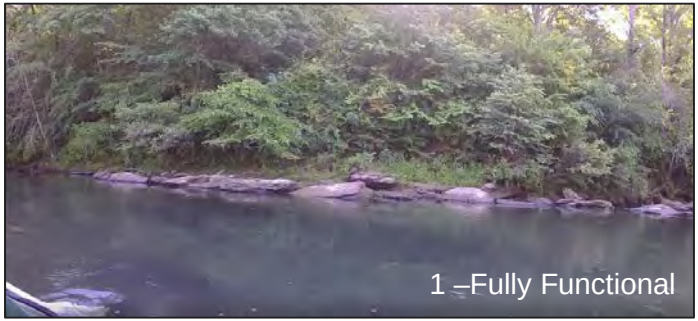
Tallapoosa River Assessment

- ❑High Definition Stream Survey (HDSS)
- ❑Left and right banks scored independently
- ❑Only one area was impaired to non-functional

Bank Condition Score	Bank Condition Class	Description	Erosion Potential	Human Impact
1	Fully Functional	Banks with low erosion potential, such as, bedrock outcroppings, heavily wooded areas with low slopes and good access to flood plain.	Low to High	Low to High
2	Functional	Banks in good condition with minor impacts present, such as, forested with moderate bank angles and adequate access to flood plains.		
3	Slightly Impaired	Banks showing moderate erosion impact or some impact from human development.		
4	Impaired	Surrounding area consists of more than 50% exposed soil with low riparian diversity or surface protection. Obvious impacts from cattle, agriculture, industry, and poorly protected streambanks		
5	Non-functional	Surrounding area consists of short grass or bare soil and steep bank angles. Evidence of active bank failure with very little stabilization from vegetation. Contribution of sediment likely to be very high in these areas.		

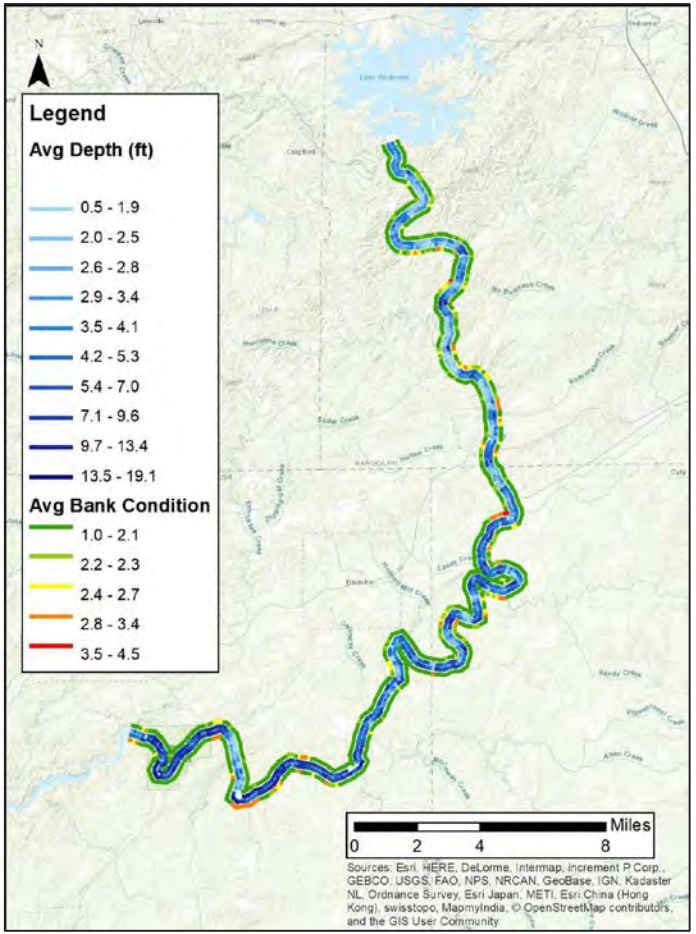
HARRIS DAM RELICENSING

Erosion and Sedimentation



HARRIS DAM
RELICENSING

Erosion and Sedimentation



EROSION AND SEDIMENTATION

Variance from the Study Plan and Schedule

- No variance from the study plan or schedule.

Remaining Activities/Modification/Other Proposed Studies

- Draft Erosion and Sedimentation Study Report comments due June 11, 2020
- Additional reconnaissance at Lake Harris sedimentation site during full (summer) pool conditions to determine if any nuisance aquatic vegetation is present
- No additional studies have been proposed beyond that in FERC's SPD

QUESTIONS?

HARRIS DAM RELICENSING

HAT 3 Fish and Wildlife

- ❑Threatened and Endangered Species Study
- ❑Downstream Aquatic Habitat Study
- ❑ Aquatic Resources Study

HARRIS DAM
RELICENSING

THREATENED & ENDANGERED SPECIES

Study Purpose and Methods Summary

- ❑Determine if listed species occur in the Project Area and identify potential project impacts
  - Compile a list of T&E species and critical habitats
  - Review literature of agreed upon species to gather habitat requirement data and describe historical range.
  - Identify factors affecting the status of each species.
  - Use GIS to map habitat information to determine possible areas in the geographic scope that T&E species may utilize.
  - Summarize collected data of areas within the geographic scope that provide habitat requirements for T&E species.
  - Determine if these areas are potentially impacted by Harris Project operations.
  - Perform field surveys, as appropriate

Study Progress

- ❑August 27, 2019 – Reviewed Study Plan and discussed need for field surveys
- ❑Surveyed for fine-lined pocketbook (mussel) in Tallapoosa River (November 2019)
- ❑Draft Threatened and Endangered Species Desktop Assessment complete

HARRIS DAM RELICENSING

THREATENED & ENDANGERED DESKTOP STUDY

Federally Threatened and Endangered Species Potentially Occurring in AL Counties within Project Vicinity

- 20 species: 7 threatened, 13 endangered
  - Harris – 7 species
    - Red-cockaded woodpecker
    - Southern pigtoe and fine-lined pocketbook
    - Indiana bat and northern long-eared bat
    - Little amphianthus and white fringeless orchid
  - Skyline – 16 species
    - Palezone shiner and spotfin chub
    - 8 mussel species
    - Indiana bat, northern long-eared bat, and gray bat
    - White fringeless orchid, Price's potato bean, Morefield's leather flower

HARRIS DAM RELICENSING

Threatened & Endangered Desktop Study

	Habitat Occurrence	
Species	Skyline	Lake Harris
Fine-lined pocketbook		✓
Southern pigtoe		✓
Gray bat	✓	
Indiana bat	✓	✓
Northern long-eared bat	✓	✓
Little amphianthus		✓
Price's potato bean	✓	
White fringeless orchid	✓	✓
Red-cockaded woodpecker		✓

HARRIS DAM RELICENSING

THREATENED & ENDANGERED DESKTOP STUDY

USFWS Designated Critical Habitat

- ❑Fine-lined pocketbook
- ❑Indiana bat
- ❑Rabbitsfoot
- ❑Slabside pearlymussel
- ❑Southern pigtoe
- ❑Spotfin chub

HARRIS DAM RELICENSING

THREATENED & ENDANGERED SPECIES

Variance from the Study Plan and Schedule

- ❑March 2020 HAT 3 meeting was cancelled due to COVID-19

Remaining Activities/Modifications/Other Proposed Studies

- ❑Comments on Draft Threatened and Endangered Species Desktop Assessment due June 11, 2020
- ❑Additional consultation with USFWS as needed
- ❑Additional surveys in spring/summer 2020: palezone shiner and fine-lined pocketbook
- ❑No additional studies have been proposed beyond that in FERC's SPD

QUESTIONS?

HARRIS DAM RELICENSING

DOWNSTREAM AQUATIC HABITAT

Study Purpose and Methods Summary

- ❑To develop a model that describes the relationship between Green Plan operations and aquatic habitat.

Study Progress

- ❑Use HEC-RAS to evaluate the effect of current operations on the amount and persistence of wetted aquatic habitat, especially shoal/shallow-water habitat.
  - Model runs of Green Plan vs Pre-Green Plan operations
- ❑Mesohabitat analysis (classified as riffle, run, or pool) complete
- ❑20 Level/temperature loggers deployed in 2019
- ❑HAT 3 March 20, 2019 Meeting – Reviewed Study Plan and draft mesohabitat analysis
- ❑HAT 3 December 11, 2019 – Reviewed study progress and proposed methodology for analyzing results from HEC-RAS
- ❑February 20, 2020 – HAT 3 Meeting to review proposed analysis methodology and initial results of wetted perimeter analysis

HARRIS DAM RELICENSING

DOWNSTREAM AQUATIC HABITAT

Variance from the Study Plan and Schedule

- ❑March 2020 HAT 3 meeting was cancelled due to COVID-19

Remaining Activities/Modifications/Other Proposed Studies

- ❑Level loggers continue to collect data through June 2020
- ❑Analysis of HEC-RAS results
- ❑Develop temperature component of HEC-RAS model (spring 2020)
- ❑Draft Report in June 2020
- ❑No additional studies have been proposed beyond that in FERC's SPD

QUESTIONS?

HARRIS DAM RELICENSING

AQUATIC RESOURCES

Study Purpose and Methods Summary

❑Evaluate the effects of the Harris Project on aquatic resources.

Study Progress

❑Desktop Assessment of Aquatic Resources (Kleinschmidt)

❑Downstream Fish Population Research (Auburn)

- Fish Temperature Requirements
- Assessment of Temperature Data from Regulated and Unregulated Reaches
- Fish Community Surveys
  - Wadeable standardized (30+2) sampling
  - Boat Electrofishing
- Bioenergetics Modeling

HARRIS DAM RELICENSING

Downstream Fish Population Research

- Literature review of temperature requirements of target species: Redbreast Sunfish, Channel Catfish, Tallapoosa Bass, and Alabama Bass
  - Spotted Bass temperature review will be used in place of Alabama Bass
- Fish sampling at Horseshoe Bend, Wadley, Lee's Bridge (control site), and Harris Dam tailrace
  - Sampling in April, May, July, September, November 2019 and January and March 2020
  - Individual fish weighed, measured, sexed, had gonads removed and weighed, had diets removed from stomachs and preserved, and had otoliths removed and stored to be evaluated
  - To date, all diets quantified, all prey items identified, and all diet data entered into databank
- Target species specimens being used in respirometry tests
  - Intermittent flow static respirometry tests: data will be used in bioenergetics models
  - Swimming respirometry to quantify performance capabilities of fish

HARRIS DAM RELICENSING

AQUATIC RESOURCES

Variance from Study Plan and Schedule

- ❑March 2020 HAT 3 meeting was cancelled due to COVID-19
- ❑Auburn University exploring alternatives to electromyogram radio tags

Remaining Activities/Modifications/Other Proposed Studies

- ❑Desktop Assessment of Aquatic Resources
- ❑Downstream Fish Population Research
  - Fish Temperature Requirements
  - Assessment of Temperature Data from Regulated and Unregulated Reaches
  - Fish Community Surveys
    - Wadeable standardized (30+2) sampling
    - Boat Electrofishing
  - Bioenergetics Modeling
  - Consider Alternative “Control” Site Upstream of Reservoir
  - Tag and Track Fish During Summer 2020
  - Continue Static Respirometry Tests at 10 and 21°C
  - Continue Measuring Active Metabolic Rates (Combination of Increasing Water Velocity and Decreasing Water Temperature)
- ❑Draft Aquatic Resources Study Report in July 2020
- ❑No additional studies have been proposed beyond that in FERC’s SPD

QUESTIONS?

HARRIS DAM RELICENSING

Next Steps

HARRIS DAM
RELICENSING

Next Steps

- ❑Alabama Power will file a summary of the ISR meeting on **May 12, 2020**
- ❑Comments on the ISR and ISR meeting summary should be submitted to FERC by **June 11, 2020**
- ❑ Any requests for modifying the FERC approved study plan must follow 18 CFR Section 5.15 (d) and (e)
- ❑Comments on the draft study reports should be submitted to Alabama Power at harrisrelicensing@southernco.com by **June 11, 2020**

HARRIS DAM
RELICENSING

Next Steps in Relicensing Process

- ❑Additional HAT meetings (2020-2021)
- ❑Second Study Season/Phase II (2020/2021)
- ❑Progress Update (10/2020)
- ❑File Updated Study Report (4/12/2021)
- ❑ File Updated Study Report Meeting Summary (4/27/2021)
- ❑File Preliminary Licensing Proposal (PLP) (by 7/3/2021)
- ❑Comments on Preliminary Licensing Proposal, Additional Information Request (if necessary) (90 days from issuance of PLP or by 10/1/2021)
- ❑File Final License Application (11/30/2021)

Questions?

HARRIS DAM RELICENSING

HARRIS DAM

RELICENSING

Alabama Power

From: Anderegg, Angela Segars
To: Mayo, Lydia
Subject: RE: Notes from meeting on Feb 20th
Date: Thursday, May 14, 2020 10:15:31 AM

Hi Lydia,

We have a presentation and meeting notes from that meeting that we completely forgot to put on the external site. They are now in the HAT 3 folder: http://harrisrelicensing.com/_layouts/15/start.aspx#/HAT%203%20%20Fish%20and%20Wildlife/Forms/AllItems.aspx. I'll send to the rest of the HAT to let them know. Thanks!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Mayo, Lydia <Mayo.Lydia@epa.gov>
Sent: Wednesday, May 13, 2020 12:23 PM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: Notes from meeting on Feb 20th

Hi Angie.

Hope you are doing well during these challenging times.

I'm reviewing my notes from various meetings and can't find anything from the Feb 20 HAT meeting (1:00-3:00 to discuss the Downstream Aquatic Habitat Study). Are there any notes available from that call/meeting?

Thank you.

Lydia

From:	APC Harris Relicensing
To:	"harrisrelicensing@southernco.com"
Bcc:	amy.silvano@dcnr.alabama.gov; chris.greene@dcnr.alabama.gov; damon.abernethy@dcnr.alabama.gov; evan.lawrence@dcnr.alabama.gov; keith.henderson@dcnr.alabama.gov; mike.holley@dcnr.alabama.gov; steve.bryant@dcnr.alabama.gov; matthew.marshall@dcnr.alabama.gov; todd.fobian@dcnr.alabama.gov; nathan.aycock@dcnr.alabama.gov; ken.wills@jcdh.org; arsegars@southernco.com; ammcvica@southernco.com; dkanders@southernco.com; jcarlee@southernco.com; jefbaker@southernco.com; kechandl@southernco.com; tlmills@southernco.com; cggoodma@southernco.com; clowry@alabamarivers.org; mhunter@alabamarivers.org; jwest@alabamarivers.org; gjobsis@americanrivers.org; devridr@auburn.edu; irwiner@auburn.edu; kmo0025@auburn.edu; wrighr2@aces.edu; jhancock@balch.com; lgallen@balch.com; chris@alaudubon.org; sarah.salazar@ferc.gov; allan.creamer@ferc.gov; rachel.mcnamara@ferc.gov; monte.terhaar@ferc.gov; amanda.fleming@kleinschmidtgroup.com; colin.dinken@kleinschmidtgroup.com; henry.mealing@kleinschmidtgroup.com; jason.moak@kleinschmidtgroup.com; kate.cosnahan@kleinschmidtgroup.com; kelly.schaeffer@kleinschmidtgroup.com; sforehand@russelllands.com; lgarland68@aol.com; rbmorris222@gmail.com; pace.wilber@noaa.gov; mitchell.reid@tnc.org; donnamat@aol.com; trayjim@bellsouth.net; mhpwedowee@gmail.com; straylor426@bellsouth.net; triciastearns@gmail.com; wmcampbell218@gmail.com; robinwaldrep@yahoo.com; holliman.daniel@epa.gov; decker.chris@epa.gov; mayo.lydia@epa.gov; bill_pearson@fws.gov; evan_collins@fws.gov; jeff_powell@fws.gov; jennifer_grunewald@fws.gov; jeff_duncan@nps.gov
Subject:	HAT 3 - 2/20 DAH meeting notes
Date:	Thursday, May 14, 2020 10:19:11 AM

HAT 3,

It was brought to my attention that we forgot to place the meeting presentation and notes from the February 20 Downstream Aquatic Habitat meeting on our website. You can now find them in the HAT 3 folder: http://harrisrelicensing.com/_layouts/15/start.aspx#/HAT%203%20%20Fish%20and%20Wildlife/Forms/AllItems.aspx.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From:	APC Harris Relicensing
To:	"harrisrelicensing@southernco.com"
Bcc:	damon.abernethy@dcnr.alabama.gov; nathan.aycock@dcnr.alabama.gov; Steve Bryant - Alabama Department of Conservation and Natural Resources; todd.fobian@dcnr.alabama.gov; chris.greene@dcnr.alabama.gov; keith.henderson@dcnr.alabama.gov; mike.holley@dcnr.alabama.gov; matthew.marshall@dcnr.alabama.gov; amy.silvano@dcnr.alabama.gov; jhaslbauer@adem.alabama.gov; cljohnson@adem.alabama.gov; mlen@adem.alabama.gov; fal@adem.alabama.gov; djmoore@adem.alabama.gov; arsegars@southernco.com; dkanders@southernco.com; wtanders@southernco.com; jcarlee@southernco.com; kechandl@southernco.com; mcoker@southernco.com; cggoodma@southernco.com; gfhorn@southernco.com; ammcvica@southernco.com; tlmills@southernco.com; mhunter@alabamarivers.org; clowry@alabamarivers.org; jwest@alabamarivers.org; gjobsis@americanrivers.org; kmo0025@auburn.edu; irwiner@auburn.edu; reuteem@auburn.edu; lgallen@balch.com; jhancock@balch.com; allan.creamer@ferc.gov; rachel.mcnamara@ferc.gov; sarah.salazar@ferc.gov; monte.terhaar@ferc.gov; kate.cosnahan@kleinschmidtgroup.com; colin.dinken@kleinschmidtgroup.com; amanda.fleming@kleinschmidtgroup.com; henry.mealing@kleinschmidtgroup.com; jason.moak@kleinschmidtgroup.com; kelly.schaeffer@kleinschmidtgroup.com; jessecunningham@msn.com; sforehand@russelllands.com; 1942jthompson420@gmail.com; nancyburnes@centurylink.net; lgarland68@aol.com; rbmorris333@gmail.com; mitchell.reid@tnc.org; richardburnes3@gmail.com; eilandfarm@aol.com; eveham75@gmail.com; wmcampbell218@gmail.com; jec22641@aol.com; robinwaldrep@yahoo.com; chuckdenman@hotmail.com; carolbuggknight@hotmail.com; donnamat@aol.com; harry.merrill47@gmail.com; mhpwedowee@gmail.com; midwaytreasures@bellsouth.net; inspector_003@yahoo.com; clark.maria@epa.gov; decker.chris@epa.gov; gordon.lisa-perras@epa.gov; holliman.daniel@epa.gov; mayo.lydia@epa.gov; jeff_duncan@nps.gov
Subject:	HAT 2 - Erosion/Sedimentation Study video
Date:	Thursday, May 14, 2020 11:00:17 AM

HAT 2,

During the Initial Study Report meeting on April 28, several stakeholders asked if the High Definition Stream Survey video created by Trutta Environmental Solutions as part of the Erosion and Sedimentation study could be made available to stakeholders. The video footage is now available on the Harris relicensing website at the link below.

Trutta HDSS Videos

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: Clark, Maria <Clark.Maria@epa.gov>
Sent: Thursday, May 14, 2020 1:24 PM
To: APC Harris Relicensing
Subject: RE: HAT 2 - Erosion/Sedimentation Study video

Hi Angie,

Is the summary also available? Maria

From: APC Harris Relicensing <g2apchr@southernco.com>
Sent: Thursday, May 14, 2020 12:01 PM
To: APC Harris Relicensing <g2apchr@southernco.com>
Subject: HAT 2 - Erosion/Sedimentation Study video

HAT 2,

During the Initial Study Report meeting on April 28, several stakeholders asked if the High Definition Stream Survey video created by Trutta Environmental Solutions as part of the Erosion and Sedimentation study could be made available to stakeholders. The video footage is now available on the Harris relicensing website at the link below.

Trutta HDSS Videos [gcc01.safelinks.protection.outlook.com]

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: APC Harris Relicensing
Sent: Thursday, May 14, 2020 1:37 PM
To: Clark, Maria
Subject: FW: Harris Relicensing - Initial Study Report Meeting Summary
Attachments: 2020-05-12 ISR Meeting Summary.pdf

Hi Maria,

Got your voicemail. The meeting summary was filed with FERC on Tuesday and sent to stakeholders. Please see attached.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: APC Harris Relicensing
Sent: Tuesday, May 12, 2020 12:18 PM
To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Subject: Harris Relicensing - Initial Study Report Meeting Summary

Harris relicensing stakeholders,

The meeting summary from the April 28th Initial Study Report meeting, including a list of attendees and the meeting presentation, was filed with FERC today. The meeting summary is attached and can also be found at www.harrisrelicensing.com.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: Anderegg, Angela Segars
Sent: Monday, May 18, 2020 3:06 PM
To: Mayo, Lydia
Subject: RE: Exhibit S doc
Attachments: 1980-3-24 Harris - Revised Exhibit S.pdf

Hi Lydia,

Old files can be hard to find on elibrary. Attached is the Revised Exhibit S referenced in the PAD (Alabama Power 1980).

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Mayo, Lydia <Mayo.Lydia@epa.gov>
Sent: Friday, May 15, 2020 2:36 PM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: Exhibit S doc

Hi Angie.
Can you help me locate a copy of the revised Exhibit S of FPC Dec 27, 1973 license referenced in the June 1, 2018 NOI/PAD?
I found a copy of the letter that references the Revised Exhibit S dated June 8, 1982 (attached) on FERC's elibrary, but the actual exhibit S is not included in the file.
Thank you for any help you can provide!
Lydia

Lydia Mayo

Water Quality Standards Section

U.S. Environmental Protection Agency

Region 4, Atlanta, GA

Phone: (404) 562-9247

Alabama Power Company
600 North 18th Street
Post Office Box 2641
Birmingham, Alabama 35291
Telephone 205 323-5341

F. L. CLAYTON, JR.
Senior Vice President

Alabama Power
the southern electric system

March 24, 1980

Project No. 2628 - Alabama
R. L. Harris Dam

Mr. Kenneth F. Plumb
Secretary
Federal Energy Regulatory Commission
825 Capitol Street, N.E.
Washington, D.C. 20426

Dear Mr. Plumb:

Transmitted herewith are twenty (20) copies of Exhibit S (revised) for the R. L. Harris Dam, FERC Project No. 2628 - Alabama. This plan is submitted for approval as a revision to the Exhibit S of the license application. It is requested that this information be accepted for filing in compliance with the requirements of Article 52 as of this date. The plan proposes a program of study of the potential fishery resources of the reservoir and describes measures that will be taken to maintain or enhance water quality downstream of the project.

Yours very truly,

F L Clayton Jr

CGO/jd

Enclosures

cc: Mr. A. O. Kauranen

bc: Mr. J. M. Farley
Mr. A. R. Barton
Mr. J. S. Vogtle (w/enclosure)
Mr. J. E. Dorsett (w/enclosure)
Mr. J. T. Young (w/enclosure)
Mr. R. H. Krotzer (w/enclosure)
Mr. O. D. Smith (w/enclosure)
Mr. T. E. Diffee (w/enclosure)
Mr. David Miller (w/enclosure)
Mr. D. D. Dill (w/enclosure)
Mr. R. L. Scott (w/enclosure)
Mr. R. V. Maudlin (w/enclosure)
Mr. Marshall Timberlake (w/enclosure)
Mr. R. A. Bowron (w/enclosure)

File: CC 16-15

Revised Exhibit S

Article 52 of the order issuing license for the R. L. Harris Hydroelectric Facility (FERC Project No. 2628) requires that a revised Exhibit S be filed for Commission approval. Article 52 states that the revised Exhibit S include: "1) plans for a study of the potential fishery resources of the reservoir to be conducted in cooperation with the appropriate State and Federal Fishery agencies; and (2) a description of measures being taken to maintain or enhance the water quality of the Tallapoosa River downstream from the project".

FISHERY RESOURCES

Applicant will conduct a detailed post impoundment study to assess fish population existing at the project. Plans include fish population studies to be conducted on two occasions following impoundment of the reservoir. Fish population studies will be conducted one year following impoundment of the river for the purpose of evaluating existing fish populations. Studies conducted during the first sample period will provide data which will be used to describe the existing fishery resources, and include: (1) species present, (2) relationships between forage and piscivorous species, and (3) the need for stocking additional forage or sport species.

The first year studies are expected to indicate the need for stocking such species as the threadfin shad (Dorosoma petenense), which is an important forage species not expected to be present in the project, and the stocking of striped bass (Morone saxatilis) and/or the hybrid striped bass (Morone saxatilis X Morone chrysops). Information obtained from the Alabama Department of Conservation and Natural Resources indicates that data

presently being collected on striped bass introductions in the lower Tallapoosa River projects should provide a base for determining the sport potential and stocking rates of this species in the R. L. Harris project. Striped bass research conducted to date by the Alabama Department of Conservation indicates that the introduction of this species would probably significantly enhance sport fishing in the project.

Fishery studies to be conducted during the second study period will be initiated two years after the first study period and three years after filling of the reservoir. Information gained from the second population study will be used to determine the status of species identified during the first study. Relationships between forage and piscivorous species will be assessed, as will the growth and reproduction of sport species. Studies conducted during the second study period will also provide information relative to the success of any species added to the reservoir following the one year post impoundment survey.

The previously described studies are intended to provide the basis for applicant's commitment to: (1) assess the fishery resources of the project and to enhance these resources by stocking additional species as are determined to be beneficial to the project, and (2) through cooperation in conducting and evaluating results of studies with the appropriate State and Federal Fishery Agencies. Detailed plans for fish population studies, including selection of sample areas, collection methods and evaluation of data will be formalized prior to the first post impoundment survey to be conducted one year after filling. Discussions with staff of the Alabama Department of Conservation and Natural Resources have indicated that development of detailed study plans for the assessment of project fisheries would be inappropriate at this time since reservoir conditions and physiography would be difficult to

evaluate prior to filling of the reservoir. Selection of sample areas and methodology will depend upon an evaluation of the reservoir after normal pool elevations are achieved.

Subsequent to filing of this Revised Exhibit S, Applicant will provide FERC Staff with a study plan for the evaluation of project fisheries, which shall be developed prior to the first post impoundment survey. Applicant will also provide, as an addendum to the Exhibit S, the results of the post impoundment surveys and information relative to the introduction of additional species to project waters should the decision be made to make such additions.

WATER QUALITY

Maintenance of minimum stream flows

Alabama Power is committed to maintaining a minimum continuous stream flow below Harris Dam at the Wadley Gage of 45 cfs to assure that the Tallapoosa River will always be a continuously flowing stream, even under low flow conditions.

Maintenance of 5 ppm dissolved oxygen in discharges

Stratification of reservoirs in the summer and fall seasons is a common problem in the south. The warm epilimnion or surface waters typically contain the highest quality water, that with the most dissolved oxygen in water. The hypolimnion or deep waters is much cooler water and, because of its density, does not mix with surface waters, thereby becoming oxygen depleted as organic material decays and consumes available oxygen. For enhancement of discharge water quality, it is desirable to withdraw water from as close to the surface as possible. At Harris Dam, which employs seasonal drawdown, the objective of surface withdrawal has been solved by incorporating into the design movable sills at the invert of each intake opening. At full

elevation, the sills are fully extended up. As the reservoir level drops, the sills can be lowered a maximum of 18 feet to facilitate surface withdrawals. The movable sills allow penstock openings to be adjusted in 18 inch increments between elevations 764 and 746 msl, as shown in the attached Figure 1. Location of these sills at the highest levels possible for operation will ensure the highest quality water being drawn into the turbines.

To further assure 5 ppm or better of dissolved oxygen in the turbine discharge, Alabama Power Company is incorporating into the turbine discharge an aspiration system to provide up to a 2 ppm increase in dissolved oxygen. The type of system to be installed is now in use on many of Alabama Power Company's existing hydroelectric turbines. These systems have been proven to be efficient and reliable in operation. Air is injected directly below the turbine in the draft tube at several ports where a wedge shaped plate creates a negative pressure area which draws air in through the port. The ports are connected to a manifold pipe and air intake located above the hydraulic grade line. A layout of the system is included in the attached Figure 2.

APC Harris Relicensing

From: Jack West <jwest@alabamarivers.org>
Sent: Monday, May 18, 2020 4:46 PM
To: APC Harris Relicensing
Subject: Re: HAT 2 - Erosion/Sedimentation Study video

Angie,

Thank you for sharing the HDSS videos. The way they are set up with the map and different sections corresponding to different videos and sides of the bank is easy to navigate and helpful.

I hope you're staying well.

Best,

On Thu, May 14, 2020 at 11:00 AM APC Harris Relicensing <g2apchr@southernco.com> wrote:

> HAT 2,
>
> During the Initial Study Report meeting on April 28, several stakeholders asked if the High Definition Stream Survey video created by Trutta Environmental Solutions as part of the Erosion and Sedimentation study could be made available to stakeholders. The video footage is now available on the Harris relicensing website at the link below.
>
> Trutta HDSS Videos [harrisrelicensing.com]
>
> Thanks,
>
> **Angie Anderegg**
>
> Hydro Services
>
> (205)257-2251
>
> arsegars@southernco.com

--

Jack West, Esq.
Policy and Advocacy Director
Alabama Rivers Alliance
2014 6th Ave N, Suite 200
Birmingham, AL 35203
205-322-6395
www.alabamarivers.org [alabamarivers.org]

Celebrating more than 20 years of protecting Alabama's 132,000 miles of rivers and streams!

APC Harris Relicensing

From: Clark, Maria <Clark.Maria@epa.gov>
Sent: Tuesday, May 19, 2020 12:21 PM
To: APC Harris Relicensing
Subject: RE: Harris Relicensing - Initial Study Report Meeting Summary

Hi Angie,

Thank you so much for the info, for some strange reason the message was in my inbox but I couldn't see it until I searched it using the new message you sent me…technology ☹

From: APC Harris Relicensing <g2apchr@southernco.com>
Sent: Thursday, May 14, 2020 2:37 PM
To: Clark, Maria <Clark.Maria@epa.gov>
Subject: FW: Harris Relicensing - Initial Study Report Meeting Summary

Hi Maria,

Got your voicemail. The meeting summary was filed with FERC on Tuesday and sent to stakeholders. Please see attached.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: APC Harris Relicensing
Sent: Tuesday, May 12, 2020 12:18 PM
To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Subject: Harris Relicensing - Initial Study Report Meeting Summary

Harris relicensing stakeholders,

The meeting summary from the April 28th Initial Study Report meeting, including a list of attendees and the meeting presentation, was filed with FERC today. The meeting summary is attached and can also be found at www.harrisrelicensing.com [gcc01.safelinks.protection.outlook.com].

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

HAT 3 meeting - June 2

APC Harris Relicensing <g2apchr@southernco.com>

Wed 5/20/2020 3:53 PM

To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Bcc: amy.silvano@dcnr.alabama.gov <amy.silvano@dcnr.alabama.gov>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; evan.lawrence@dcnr.alabama.gov <evan.lawrence@dcnr.alabama.gov>; keith.henderson@dcnr.alabama.gov <keith.henderson@dcnr.alabama.gov>; mike.holley@dcnr.alabama.gov <mike.holley@dcnr.alabama.gov>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; matthew.marshall@dcnr.alabama.gov <matthew.marshall@dcnr.alabama.gov>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; ken.wills@jcdh.org <ken.wills@jcdh.org>; arsegars@southernco.com <arsegars@southernco.com>; ammcvica@southernco.com <ammcvica@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; jcarlee@southernco.com <jcarlee@southernco.com>; jefbaker@southernco.com <jefbaker@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; tlmills@southernco.com <tlmills@southernco.com>; cggoodma@southernco.com <cggoodma@southernco.com>; clowry@alabamarivers.org <clowry@alabamarivers.org>

HAT 3,

Please join us for a HAT 3 meeting on June 2nd, from 1:00-3:00. This meeting will provide an opportunity for us to review the progress on the Aquatic Resources study. Specifically, Auburn will share information that we had planned to present at the March meeting that was cancelled due to COVID-19. This will include a summary of water temperature data analysis, results of the literature review of target fish temperature preferences, fish community sampling, respirometry trials, and bioenergetics model development.

Call in information is below.

Join Skype Meeting

Trouble Joining? Try Skype Web App

Join by phone -+1 (205) 257-2663

Conference ID: 8297850

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

HAT 1 and HAT 5 meeting - June 4

APC Harris Relicensing <g2apchr@southernco.com>

Wed 5/20/2020 6:45 PM

To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Bcc: damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; keith.henderson@dcnr.alabama.gov <keith.henderson@dcnr.alabama.gov>; mike.holley@dcnr.alabama.gov <mike.holley@dcnr.alabama.gov>; evan.lawrence@dcnr.alabama.gov <evan.lawrence@dcnr.alabama.gov>; matthew.marshall@dcnr.alabama.gov <matthew.marshall@dcnr.alabama.gov>; brian.atkins@adeca.alabama.gov <brian.atkins@adeca.alabama.gov>; tom.littlepage@adeca.alabama.gov <tom.littlepage@adeca.alabama.gov>; jhaslbauer@adem.alabama.gov <jhaslbauer@adem.alabama.gov>; cljohnson@adem.alabama.gov <cljohnson@adem.alabama.gov>; mlen@adem.alabama.gov <mlen@adem.alabama.gov>; fal@adem.alabama.gov <fal@adem.alabama.gov>; djmoore@adem.alabama.gov <djmoore@adem.alabama.gov>; arsegars@southernco.com <arsegars@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; wtanders@southernco.com <wtanders@southernco.com>; jefbaker@southernco.com <jefbaker@southernco.com>

Please join us for a HAT 1 and HAT 5 meeting on Thursday, June 4, 2020 from 9 AM-11 AM. This meeting will be a combined HAT meeting because one of the analyses pertains to both the Operations HAT and the Recreation HAT. The two methodologies we will present include:

1. Methodology for analyzing downstream structures that would be affected by increased flooding downstream of Harris Dam as a result of raising the winter operating curve 1-4 feet higher than existing conditions. This analysis will be part of Phase 2 of the Operating Curve Change Feasibility Analysis Study.
2. Methodology for evaluating the private and public structures (i.e., boat ramps, boat docks/courtesy piers, etc.) on Lake Harris that would be useable at each of the four winter operating curve elevations. This analysis is referred to in both the Recreation Evaluation Study and the Operating Curve Change Feasibility Analysis Study.

Participants will have an opportunity to ask questions and comment on these methods.

Join Skype Meeting

Trouble Joining? Try Skype Web App

Join by phone

+1 (205) 257-2663
Conference ID: 3264749

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

HAT 6 meeting notes from 5/28

APC Harris Relicensing <g2apchr@southernco.com>

Mon 6/1/2020 9:59 PM

To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Bcc: nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; mike.holley@dcnr.alabama.gov <mike.holley@dcnr.alabama.gov>; matthew.marshall@dcnr.alabama.gov <matthew.marshall@dcnr.alabama.gov>; amanda.mcbride@ahc.alabama.gov <amanda.mcbride@ahc.alabama.gov>; eric.sipes@ahc.alabama.gov <eric.sipes@ahc.alabama.gov>; leeanne.wofford@ahc.alabama.gov <leeanne.wofford@ahc.alabama.gov>; arsegars@southernco.com <arsegars@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; wsgardne@southernco.com <wsgardne@southernco.com>; ammcvica@southernco.com <ammcvica@southernco.com>; tlmills@southernco.com <tlmills@southernco.com>; jlowe@alabama-quassarte.org <jlowe@alabama-quassarte.org>; mhunter@alabamarivers.org <mhunter@alabamarivers.org>; jwest@alabamarivers.org <jwest@alabamarivers.org>; celestine.bryant@actribe.org <celestine.bryant@actribe.org>; gjobsis@americanrivers.org <gjobsis@americanrivers.org>

1 attachments (191 KB)

2020-05-28 HAT 6 Meeting Notes Public.pdf;

HAT 6,

Attached are meeting notes from the May 28, 2020 HAT 6 meeting. Note that due to the sensitive nature of the subject matter, participants were limited for this meeting. These notes can also be found in the HAT 6 folder at www.harrisrelicensing.com [harrisrelicensing.com].

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Meeting Summary
HAT 6 Conference Call/Skype Meeting
May 28, 2020 at 1:00 pm

Participants:
Amanda McBride- Alabama Historical Commission (AHC or State Historic Preservation Office (SHPO))
Eric Sipes- Alabama Historical Commission (AHC or State Historic Preservation Office (SHPO))
Elizabeth Toombs – Cherokee Nation
Rachel McNamara – Federal Energy Regulatory Commission (FERC)
Ashley McVicar – Alabama Power
Bill Gardner - Alabama Power
Angie Anderegg- Alabama Power
Tina Mills - Alabama Power
Amanda Fleming - Kleinschmidt Associates
Matt Gage – Office of Archaeological Research (OAR)
Kristen Koors - Office of Archaeological Research (OAR)

Action Items:
- Alabama Power to revise Area of Potential Effects (APE) definition, obtain Alabama SHPO concurrence, and provide a revised definition to HAT 6 in the APE report.
- Alabama Power to file APE report with FERC no later than June 30, 2020.

Notes:
Angie Anderegg (Alabama Power) welcomed everyone and thanked them for their participation in the conference call. Angie reviewed the agenda regarding the Harris Project (Project) Cultural Resources and mentioned that the PowerPoint presentation for this call had been emailed approximately 30 minutes prior to the meeting (the presentation contains privileged information and distribution is limited).

Matt Gage (OAR) reviewed the survey status of cultural resources sites at Lake Harris and Skyline as well as the status of the Traditional Cultural Properties (TCP) Identification study, all of which were outlined in the presentation.

Rachel McNamara (FERC) asked whether the scheduled for future survey work would change due to challenges caused by COVID-19. Matt Gage replied that, at this time, he does not anticipate any changes to the schedule. Matt added that field work will focus on completing survey work for upland sites at Lake Harris, because the current reservoir level is full pool. Additionally, survey work would continue at Skyline, as it is not restricted by water level. Then, when the reservoir level is lower in the fall/winter of 2020-2021, the survey work for those sites will be completed. Matt stated further that the TCP Identification study will be completed last as it requires a site visit by the Muskogee (Creek) Nation, which is currently not feasible given

travel restrictions due to COVID-19. Angie Anderegg (Alabama Power) added that it is Alabama Power's goal to complete survey work by February 2021, as currently scheduled.

Rachel McNamara (FERC) asked whether Alabama Power is planning to conduct any survey downstream of Harris Dam, and, if not, how it is determining that there is not an effect downstream of the dam. Amanda Fleming (Kleinschmidt Associates) replied that no surveys are planned downstream of the dam at this time. Alabama Power is planning to look at known sites in terms of Harris Project effects and the Phase 2 analysis of the Harris Project Operations studies. Bill Gardner (Alabama Power) added that the locations of known sites have been determined by a literature search, and these results will be used to examine any potential erosion effects on known sites downstream. Rachel McNamara asked whether this meant that Alabama Power would be looking at known sites and not potential sites. Bill Gardner replied that is correct, because the majority of the property downstream is privately owned. Bill Gardner added that Alabama Power will look at the known sites and will attempt to use LiDAR to determine whether the known site is properly mapped and within the potential zone of influence of Harris Project operations.

Amanda Fleming (Kleinschmidt Associates) reminded the group that Angie Anderegg had emailed the draft Area of Potential Effects (APE) report on May 15th. Amanda explained that the two new items in this version are: 1) Section 4: Alabama Power received a letter from the Alabama SHPO stating it agreed with the APE for direct effects and would be open to further discussion regarding indirect effects, and 2) Section 5: revised APE now includes three parts – direct effects, indirect effect, and ongoing studies and effects of operations on Historic Properties downstream of Harris Dam outside of the Project Boundary. Amanda reminded the group that comments on the draft APE report are due to Alabama Power no later than June 15 so that Alabama Power can file the APE report with FERC, no later than June 30.

Rachel McNamara (FERC) stated that she is still having difficulty with the current language of the APE not extending downstream of Harris Dam, especially considering that Alabama Power is looking at Project effects as far downstream as Horseshoe Bend. Rachel asked whether Alabama Power had considered a larger APE for the study that would could be reduced based on study results. Amanda Fleming (Kleinschmidt Associates) explained that Alabama Power has been hesitant to take such an approach. Amanda McBride (AHC) added that it agrees with the approach of a Harris Project APE that is larger and then later narrowed in the Historic Properties Management Plan (HPMP). Amanda McBride added that the AHC has not been in complete agreement on the proposed APE, which is why it agreed to the current language that includes the understanding that indirect effects would continue to be evaluated. Rachel McNamara added that FERC is still struggling with the indirect effects portion of the currently proposed APE as flows downstream are direct effects. Rachel added that FERC has separate questions regarding the indirect effects, and the definition as included in the report now is not sufficient. Rachel explained that, if Alabama Power includes an indirect APE, FERC would want to see the types of resources affected/protected and discussions on buffers. Additionally, FERC would like to see some extension of the APE outside of the Harris Project Boundary. Rachel explained that the preference would be to reduce the APE once no effect is shown. Rachel added that FERC does not insinuate that Alabama Power would be required to take measures on private property as it is understood that Alabama Power would not necessarily have the rights to do so and added that the purpose is to understand all Project effects. Amanda Fleming stated that it is possible

that Alabama Power is having difficulty defining the APE at this point, because in the past on its other hydropower projects, APE was defined in conjunction with the draft HPMP. Rachel McNamara stated that she could understand why that would create confusion, and the process is designed so that the licensee has the APE first in order to study the right areas. Rachel added that it seemed that Alabama Power was already including downstream by collecting information but just not directly calling it part of the APE. Additionally, under Section 106, the licensee should only be evaluating areas within the APE.

Angie Anderegg (Alabama Power) asked Rachel to clarify if the APE could be a larger area now and later reduced in the HPMP should it be determined that Project operations do not affect known sites downstream of Harris Dam. Rachel stated yes, that is the preference and would be consistent with how other projects are treated. Rachel added further that it is ultimately FERC's decision on the APE, and at this point, she sees a need for the APE to extend to all areas potentially effected by Project operations with the understanding that the administrative area of control will not apply to all lands downstream of Harris Dam to Horseshoe Bend.

Alabama Power and FERC discussed that a revised APE may resemble the following:

(a) lands enclosed by the Harris Project Boundary, and
(b) lands or properties which may be outside the Harris Project Boundary, where the authorized Project uses may cause changes in the character or use of the Historic Properties, if Historic Properties exist.

Amanda Fleming stated that Alabama Power would provide a revised definition of the APE after obtaining SHPO concurrence, and issues regarding private land and access would be addressed in the HPMP. Rachel McNamara and Amanda McBride both stated agreement with this approach and noted that because the Muskogee (Creek) Nation was not able to attend the meeting, meeting notes should be distributed quickly, so they could be reviewed prior June 15, 2020 when the APE report comments are due. Rachel McNamara added that, because the next official FERC comment opportunity is not until next year, a separate letter will be issued with comments on the APE.

Amanda Fleming (Kleinschmidt Associates) reviewed the upcoming milestones for HAT 6, which includes a possible Skyline site visit in the fall 2020 and a progress report that will be filed with FERC in October 2020.

In conclusion, Amanda Fleming asked for any further comments or discussion, and, with none given, thanked everyone for their time and closed the meeting.

Attachment

Agenda for May 28, 2020 HAT 6 Conference Call

Meeting Agenda
May 28, 2020
1:00 PM – 3:00 PM

Meeting Purpose: Discuss Harris Project cultural resources issues.

1:00 PM	**Welcome, Safety Message, and Meeting Purpose**
1:15 PM	**Harris Project Cultural Resources Assessments Update**
1:45 PM	**TCP Next Steps**
2:15 PM	**APE Report**
2:45 PM	**Wrap-up, Questions, and Adjourn**

HAT 3 meeting - today at 1:00

APC Harris Relicensing <g2apchr@southernco.com>

Tue 6/2/2020 1:54 PM

To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Bcc: amy.silvano@dcnr.alabama.gov <amy.silvano@dcnr.alabama.gov>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; evan.lawrence@dcnr.alabama.gov <evan.lawrence@dcnr.alabama.gov>; keith.henderson@dcnr.alabama.gov <keith.henderson@dcnr.alabama.gov>; mike.holley@dcnr.alabama.gov <mike.holley@dcnr.alabama.gov>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; matthew.marshall@dcnr.alabama.gov <matthew.marshall@dcnr.alabama.gov>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; ken.wills@jcdh.org <ken.wills@jcdh.org>; arsegars@southernco.com <arsegars@southernco.com>; ammcvica@southernco.com <ammcvica@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; jcarlee@southernco.com <jcarlee@southernco.com>; jefbaker@southernco.com <jefbaker@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; tlmills@southernco.com <tlmills@southernco.com>; cggoodma@southernco.com <cggoodma@southernco.com>; clowry@alabamarivers.org <clowry@alabamarivers.org>

1 attachments (8 MB)

2020-6-2 HAT 3 meeting - Auburn presentation.pdf;

HAT 3,

We will be using Skype for the HAT 3 meeting this afternoon. For those of you who don't have access to Skype, the meeting presentation is attached for you to be able to follow along. Please note that the data included in this presentation remain preliminary at this point.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

HAT 3,

Please join us for a HAT 3 meeting on June 2nd, from 1:00-3:00. This meeting will provide an opportunity for us to review the progress on the Aquatic Resources study. Specifically, Auburn will share information that we had planned to present at the March meeting that was cancelled due to COVID-19. This will include a summary of water temperature data analysis, results of the literature review of target fish temperature preferences, fish community sampling, respirometry trials, and bioenergetics model development.

Call in information is below.

Join Skype Meeting

Trouble Joining? Try Skype Web App

Join by phone -+1 (205) 257-2663

Conference ID: 8297850

Using Bioenergetics to Address the Effects of Temperature and Flow on Fishes in the Harris Dam Tailrace

HAT-3 Aquatic Resources Update Meeting

~~19 March 2020~~ 2 June 2020

Study Species

Alabama Bass

Micropterus henshalli

- Habitat generalist
- Omnivore

Joseph Tomellari

Tallapoosa Bass

Micropterus tallapoosae

- Lotic Specialist
- Omnivore

Joseph Tomellari

Redbreast Sunfish

Lepomis auritus

- Lentic Specialist
- Invertivore

Duane Raver

Channel Catfish

Ictalurus punctatus

- Benthic specialist
- Omnivore

Maynard Reece

Project Objectives

1. Summarize the data that are available in the literature concerning temperature requirements for target species, including spawning and hatching temperatures, lethal limits, and thermal tolerance.

Project Objectives

1. Summarize the data that are available in the literature concerning temperature requirements for target species, including spawning and hatching temperatures, lethal limits, and thermal tolerance.

    - Tallapoosa Bass
        - Redeye bass
        - Described in 2013: limited data available

Project Objectives

1. Summarize the data that are available in the literature concerning temperature requirements for target species, including spawning and hatching temperatures, lethal limits, and thermal tolerance.

    - Tallapoosa Bass
        - Redeye bass
        - Described in 2013: limited data available
    - Alabama Bass
        - Similar species, possible surrogate
        - Described in 2008: limited data available
        - Spotted bass next possible surrogate?

	Thermal Minima	Optimal Temp Range	Preferred Temps[1]	Thermal Maxima	Ideal Spawning	Sources
Redbreast Sunfish	15	27-29, 25-30	18-32	36	21,20-25,22-26	Mathur et al. 1981; Aho et al. 1986; Sammons and Maceina 2009; Beauchene et al. 2014
Tallapoosa Bass	--	--	--	--	--	nothing currently available
Alabama Bass/Spotted Bass	10	23.5-24.4		34?	14-15	McMahon et al. 1984
Channel Catfish	6.5, 18	26-29	15-31	33.5,38.7; 28-30 for fry	21	Mathur et al. 1981; McMahon and Terrell 1982
			[1]=depends on acclimation temps			

	Thermal Minima	Optimal Temp Range	Preferred Temps[1]	Thermal Maxima	Ideal Spawning	Sources
Red Su						
Talla E						
Ala Bass/ E						
Ch Ca						

[1]=depends on acclimation temps

Some takeaways . . .

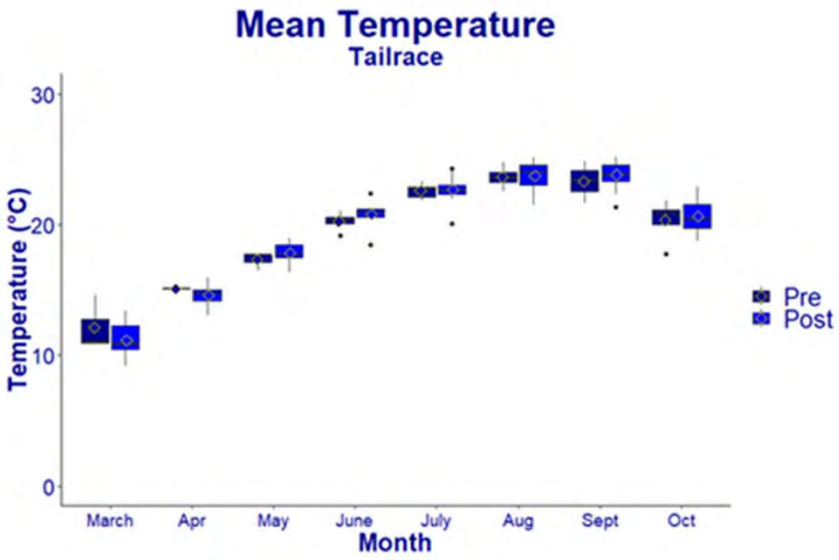
- Most data are available for channel catfish (but not from moving waters)
- There are no lethal temperature trial data
- Acclimation temperatures can be important . . .

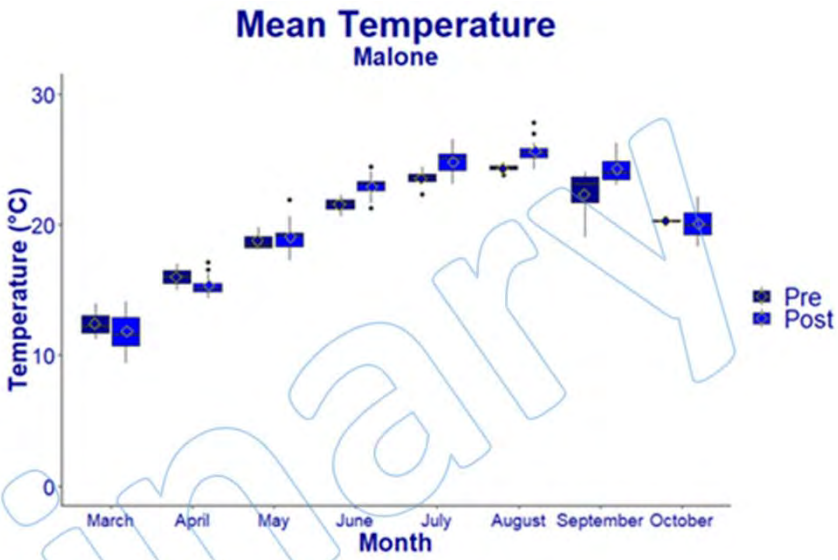
Project Objectives

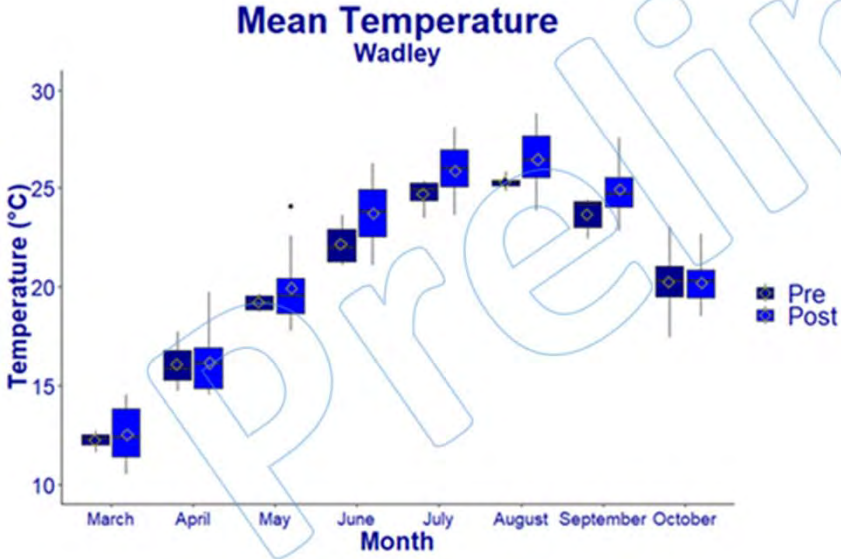
2. Summarize the data that are available in reports and from relevant agencies for water temperatures across a gradient downstream from the Harris Dam tailrace and compare those data with similar data from reference sites upstream of Harris Reservoir.

    - Results presented previously at the 19 March 2019 HAT 3 meeting.
    - 3 sites (Tailrace, Malone, Wadley)
    - 2000-2018 data from the Alabama Power Company
    - 111,366 temperature measurements

There are a LOT of data!!

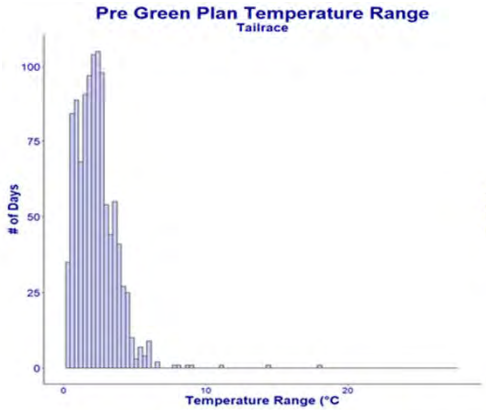


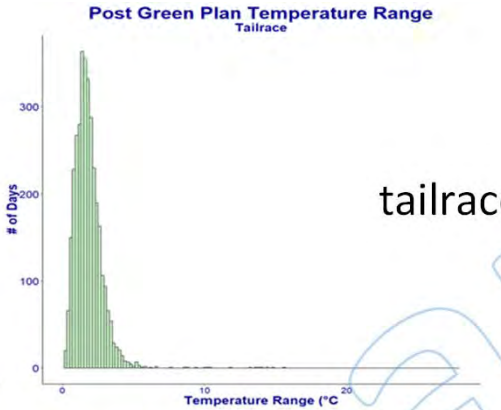




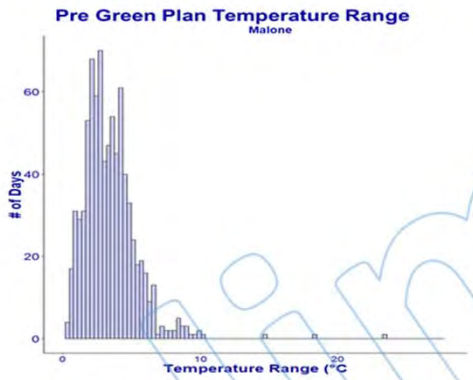
Pre Green Plan

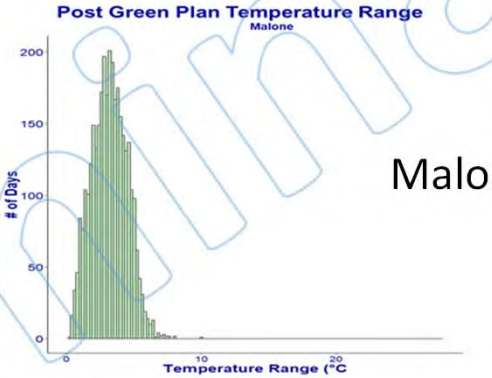
Post Green Plan



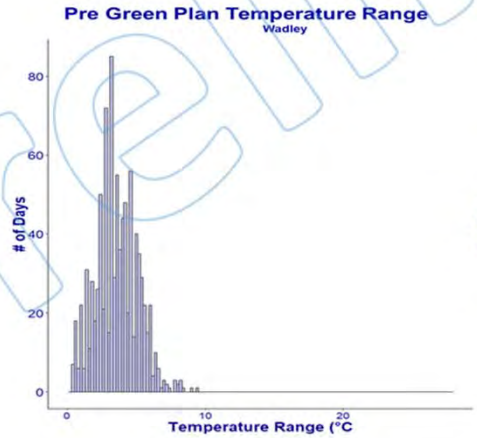


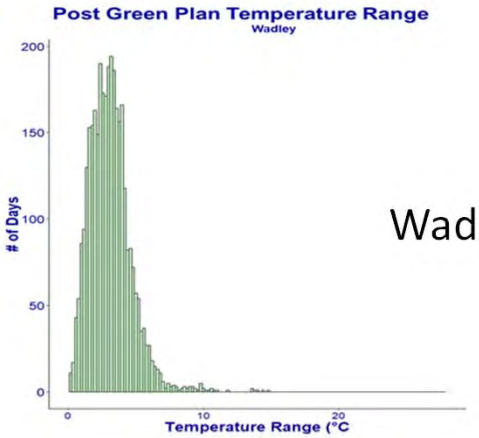
tailrace





Malone

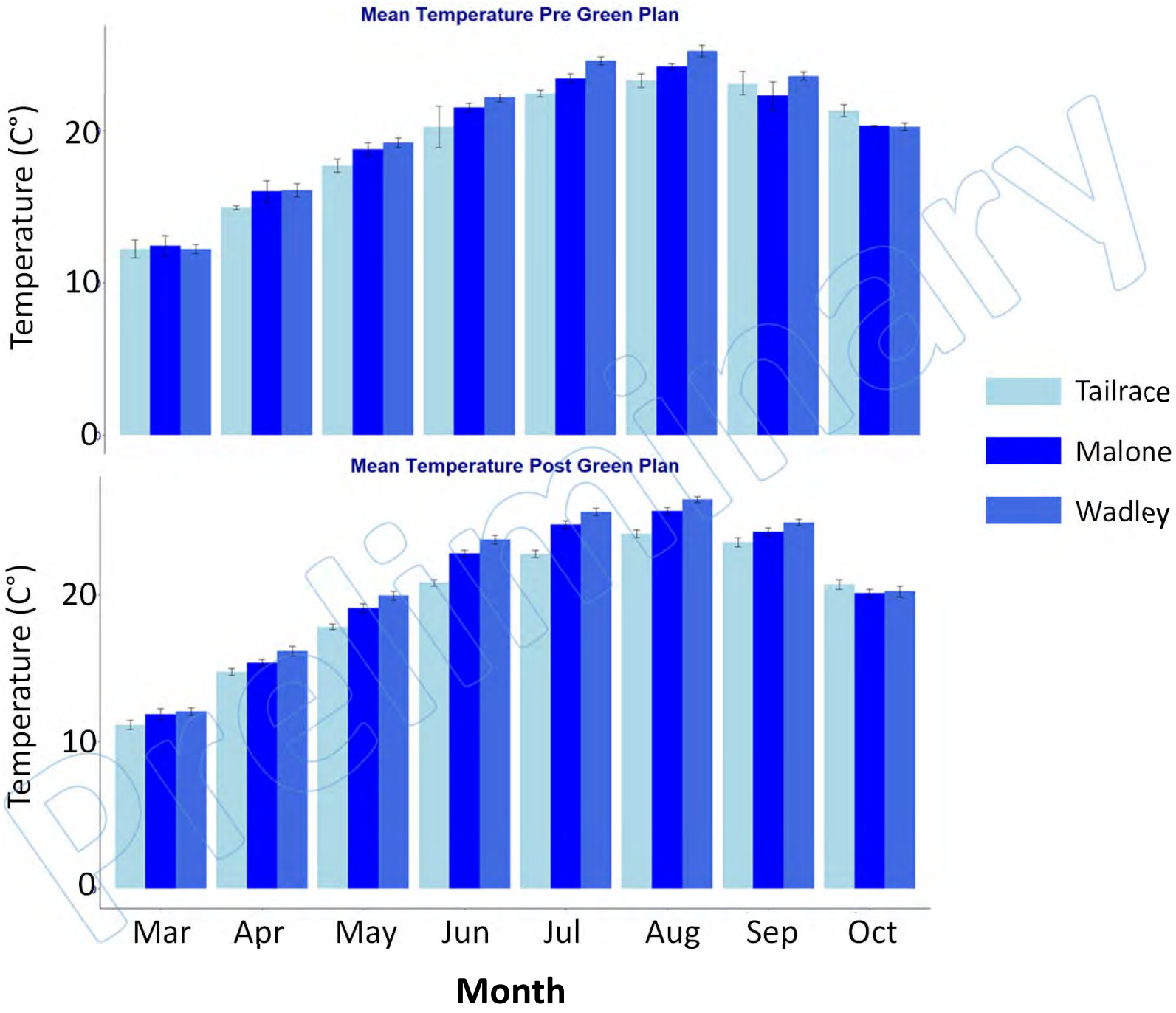


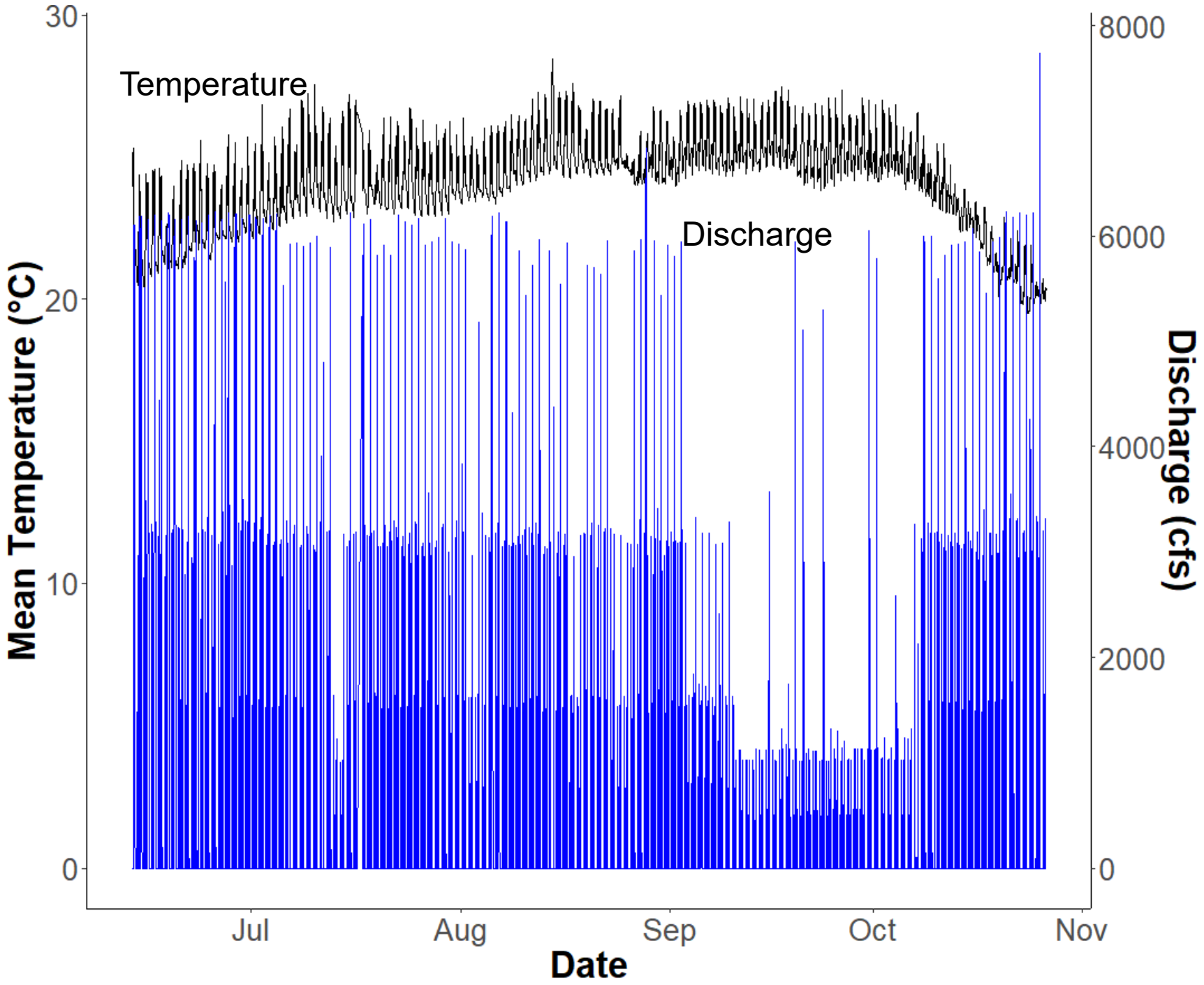


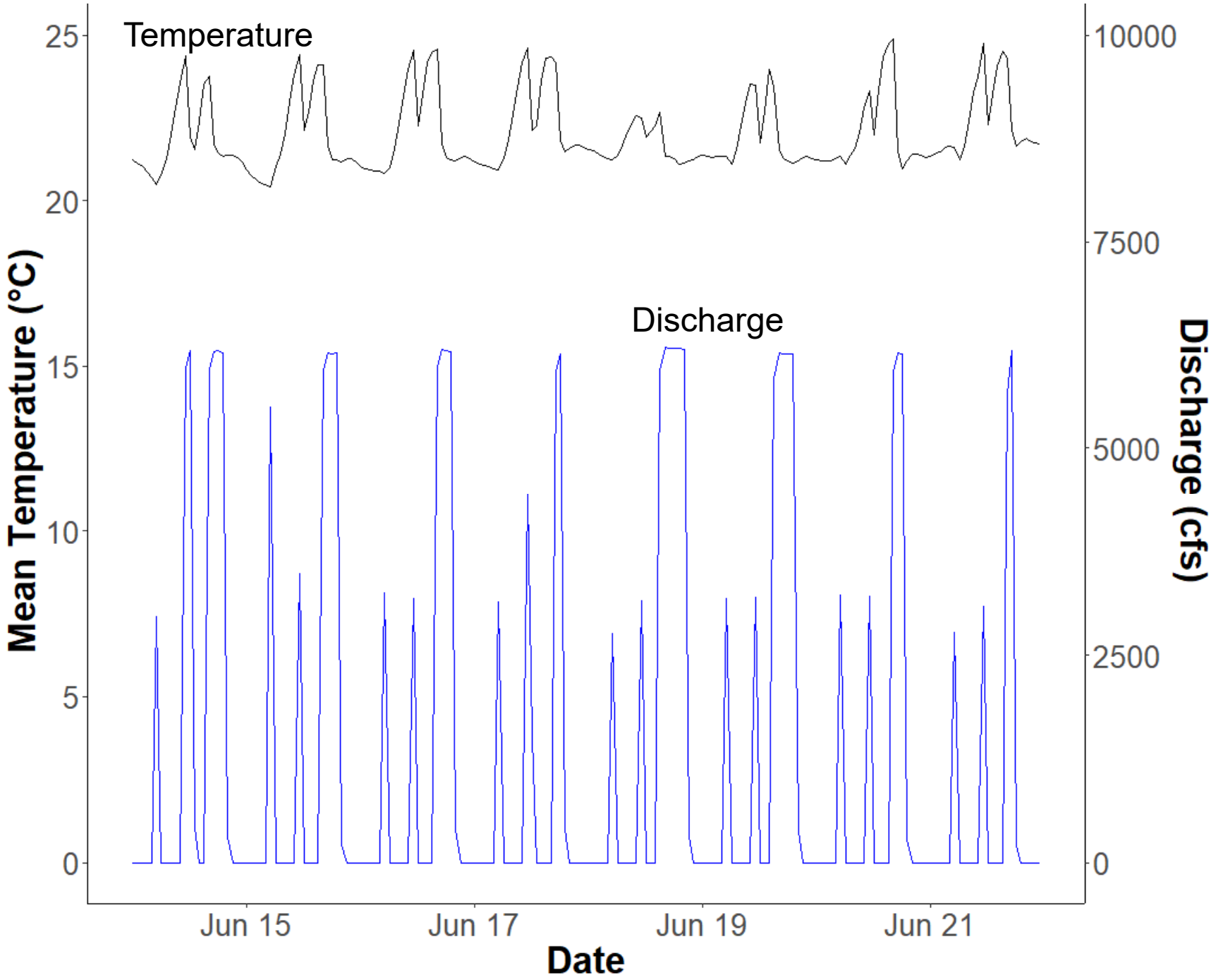
Wadley

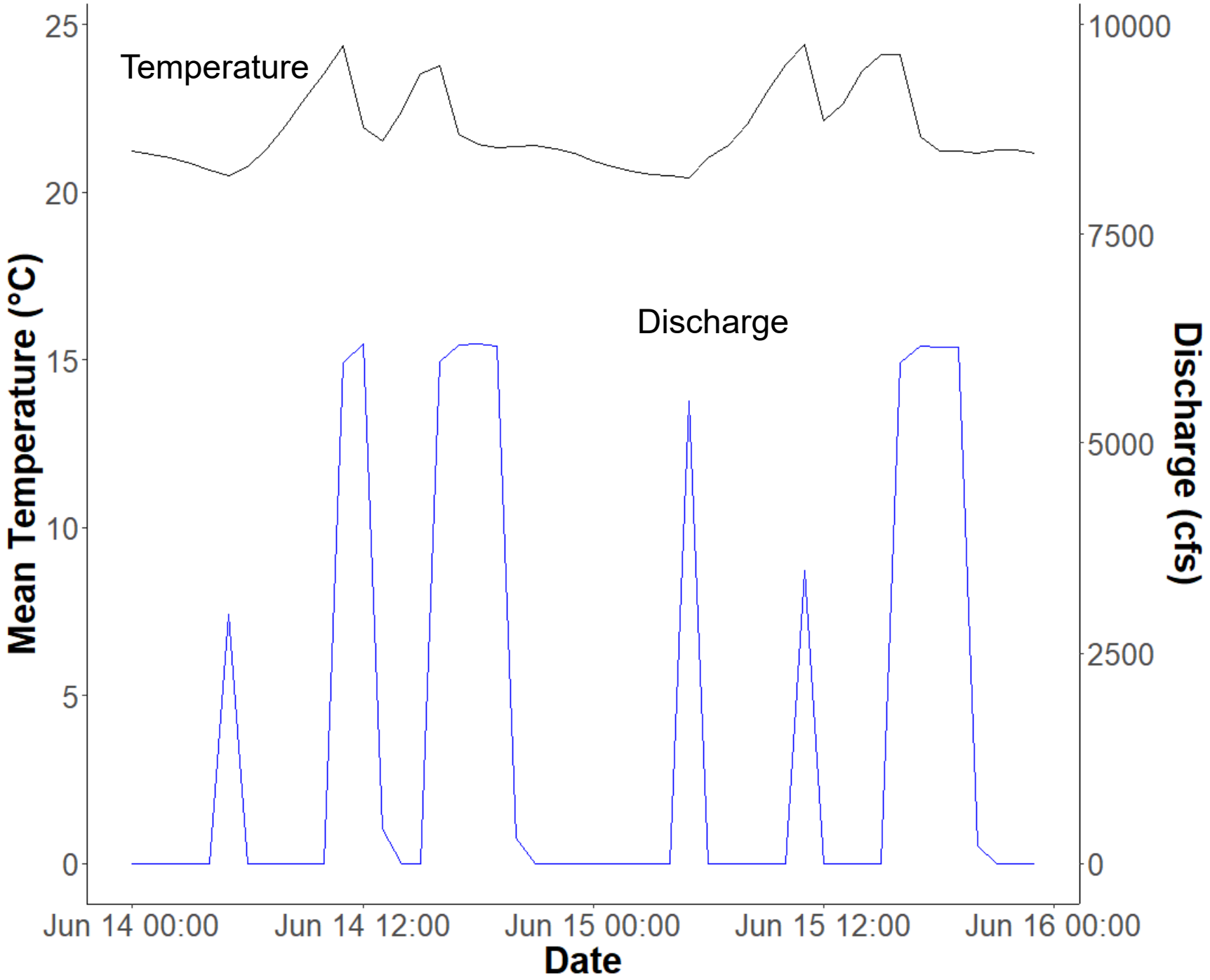
# of days

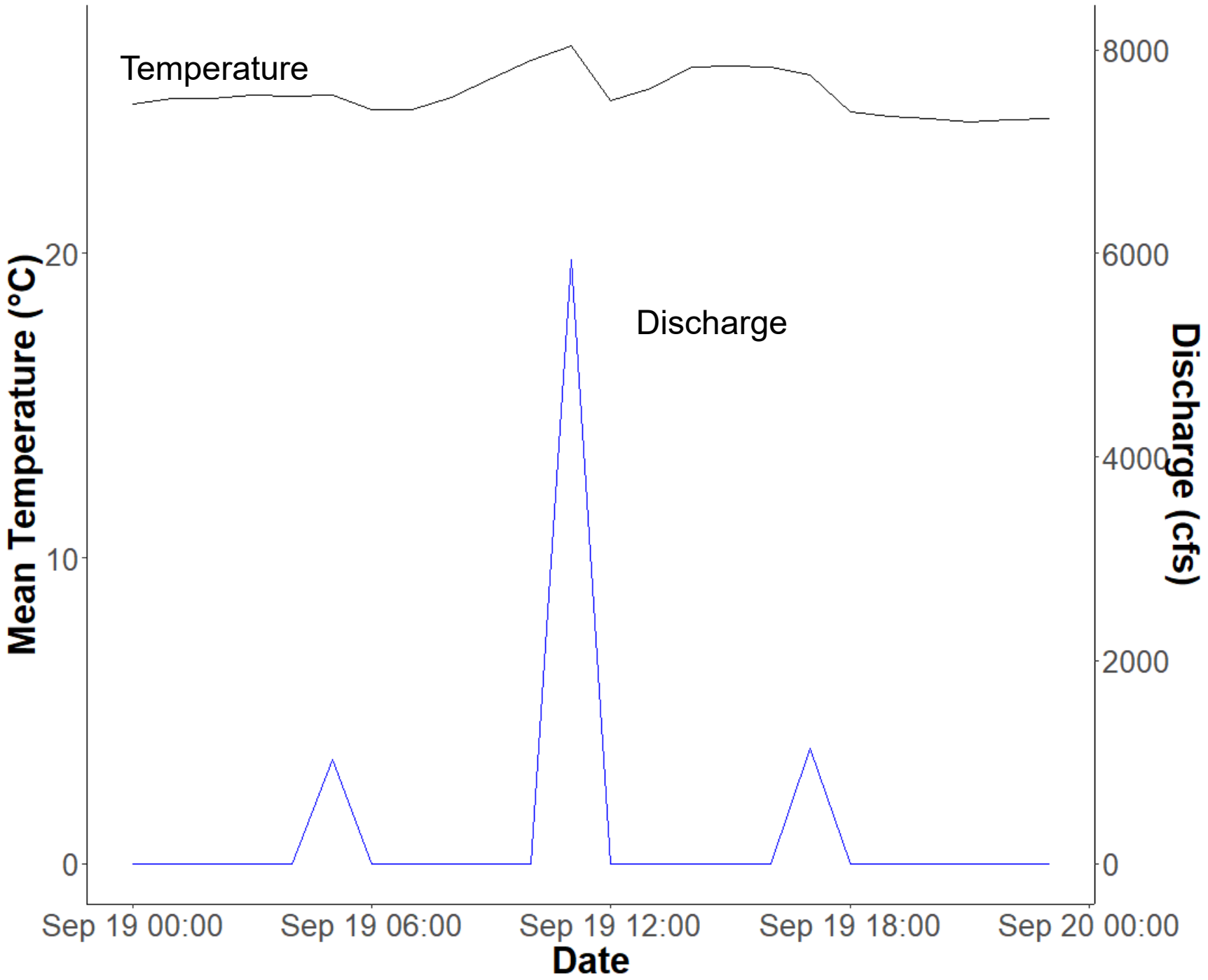
Temperature Range (C)




Temperature
Discharge
Mean Temperature (°C)
Discharge (cfs)
Date
30
20
10
0
8000
6000
4000
2000
0
Jul
Aug
Sep
Oct
Nov


Temperature
Discharge
25
20
15
10
5
0
10000
7500
5000
2500
0
Mean Temperature (°C)
Discharge (cfs)
Jun 15
Jun 17
Jun 19
Jun 21
Date


Temperature
Discharge
25
20
15
10
5
0
10000
7500
5000
2500
0
Mean Temperature (°C)
Discharge (cfs)
Jun 14 00:00
Jun 14 12:00
Jun 15 00:00
Jun 15 12:00
Jun 16 00:00
Date


Temperature
Discharge
Mean Temperature (°C)
Discharge (cfs)
0
10
20
0
2000
4000
6000
8000
Sep 19 00:00
Sep 19 06:00
Sep 19 12:00
Sep 19 18:00
Sep 20 00:00
Date

Some Take-Home Points . . .

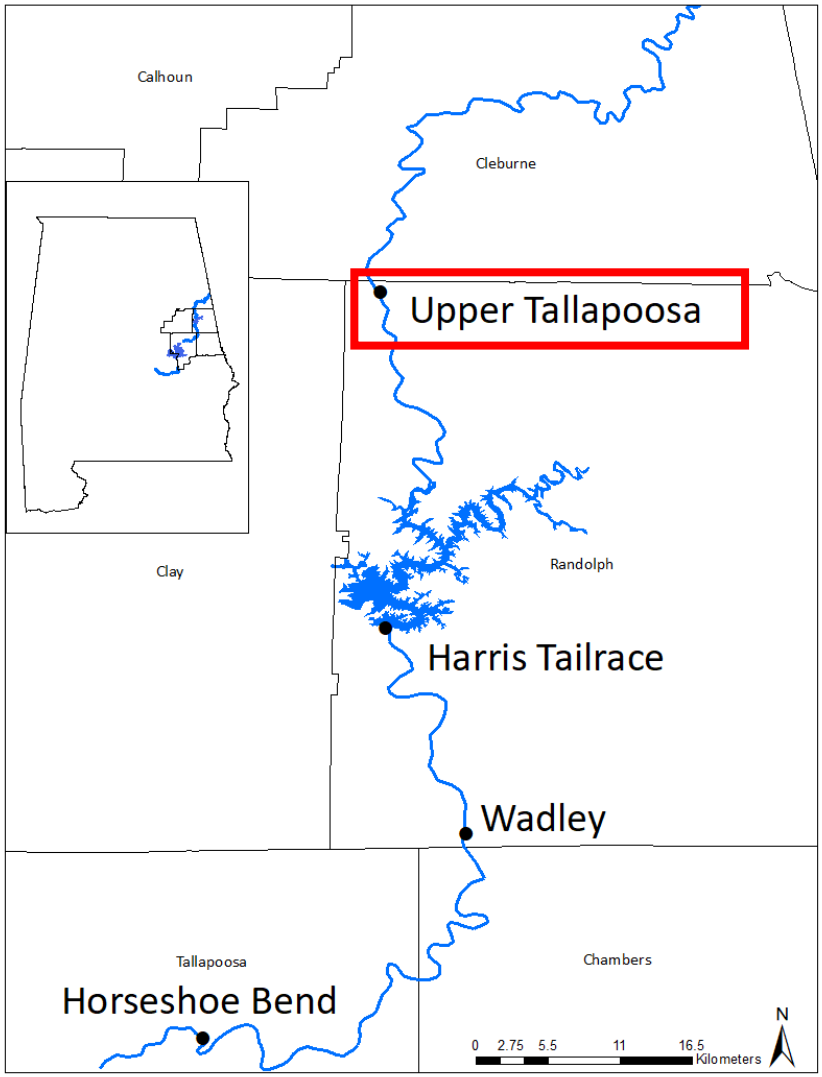
- No significant difference between temperatures before/after Green Plan
- Large variation in temperature during certain times
- Need winter temperature data
- Limited temperature tolerance data for riverine fish of interest
- Discharge changes water temperature over small time scales

Project Objectives

3. Quantify the fish community across a gradient downstream from the Harris Dam tailrace and in a reference site upstream of Harris Reservoir.

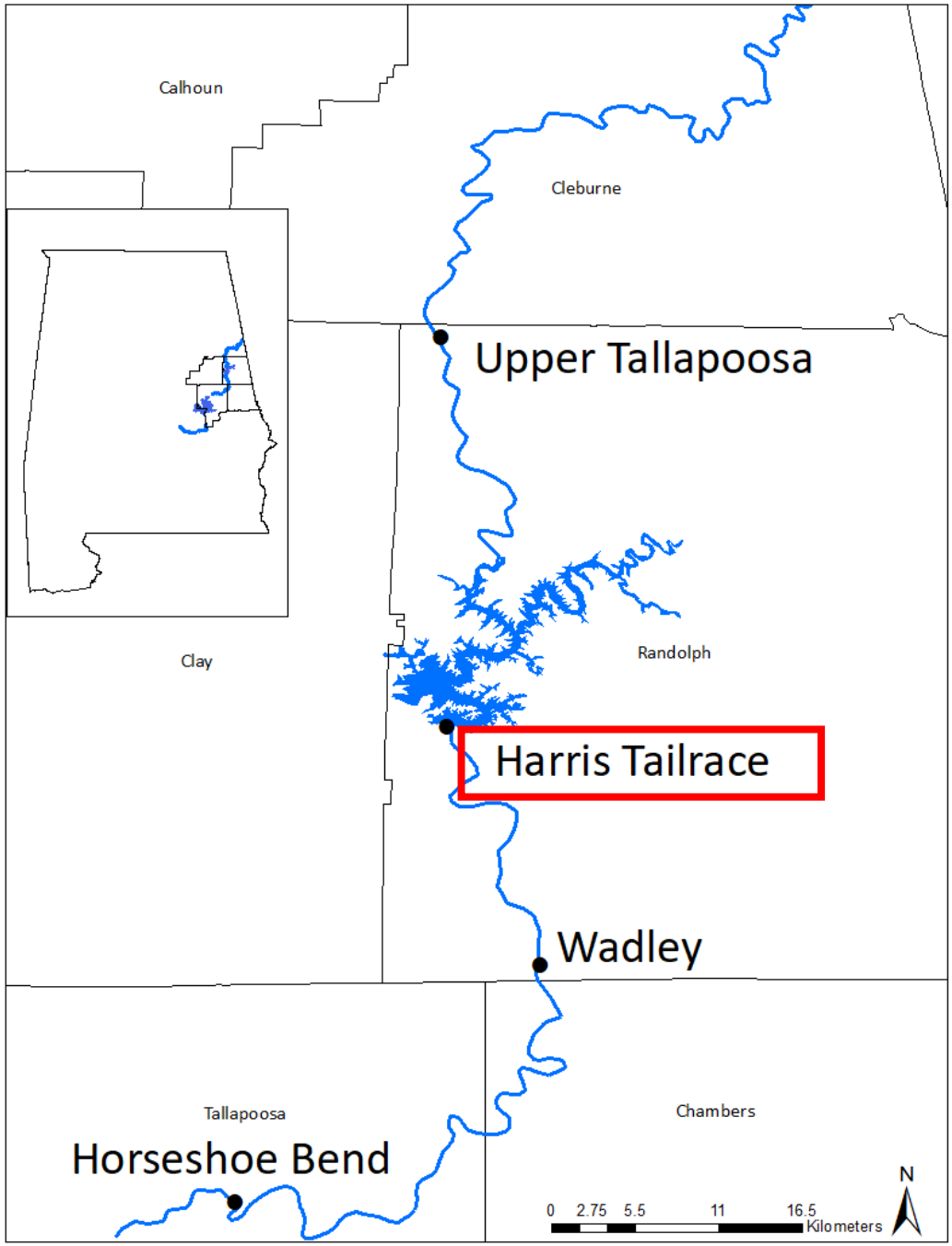
Study Sites

- Mainstem Tallapoosa River
- Three sites regulated by Harris Dam
  - Tailrace
  - Wadley
  - Horseshoe Bend
- One unregulated, upstream site
  - Upper Tallapoosa/Lee's Bridge



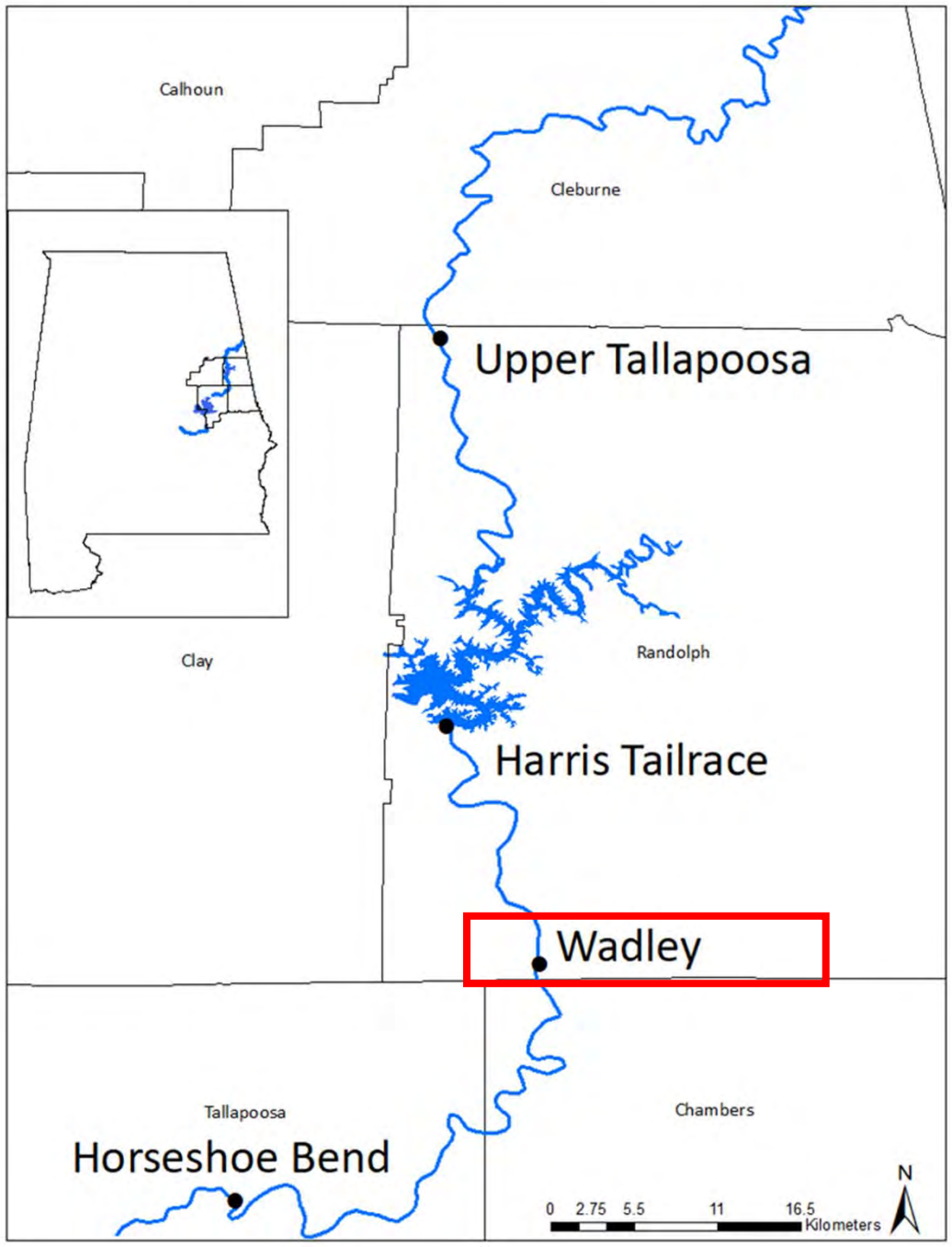
Upper Tallapoosa/Lee's Bridge

- ~45 RKM upstream of Harris Dam
- Small shoal complex at upstream boundary
- Deep, turbid water
- Accessed via ramp on CR-88


Calhoun
Cleburne
Upper Tallapoosa
Clay
Randolph
Harris Tailrace
Wadley
Tallapoosa
Chambers
Horseshoe Bend
N
0 2.75 5.5 11 16.5
Kilometers

Harris Tailrace

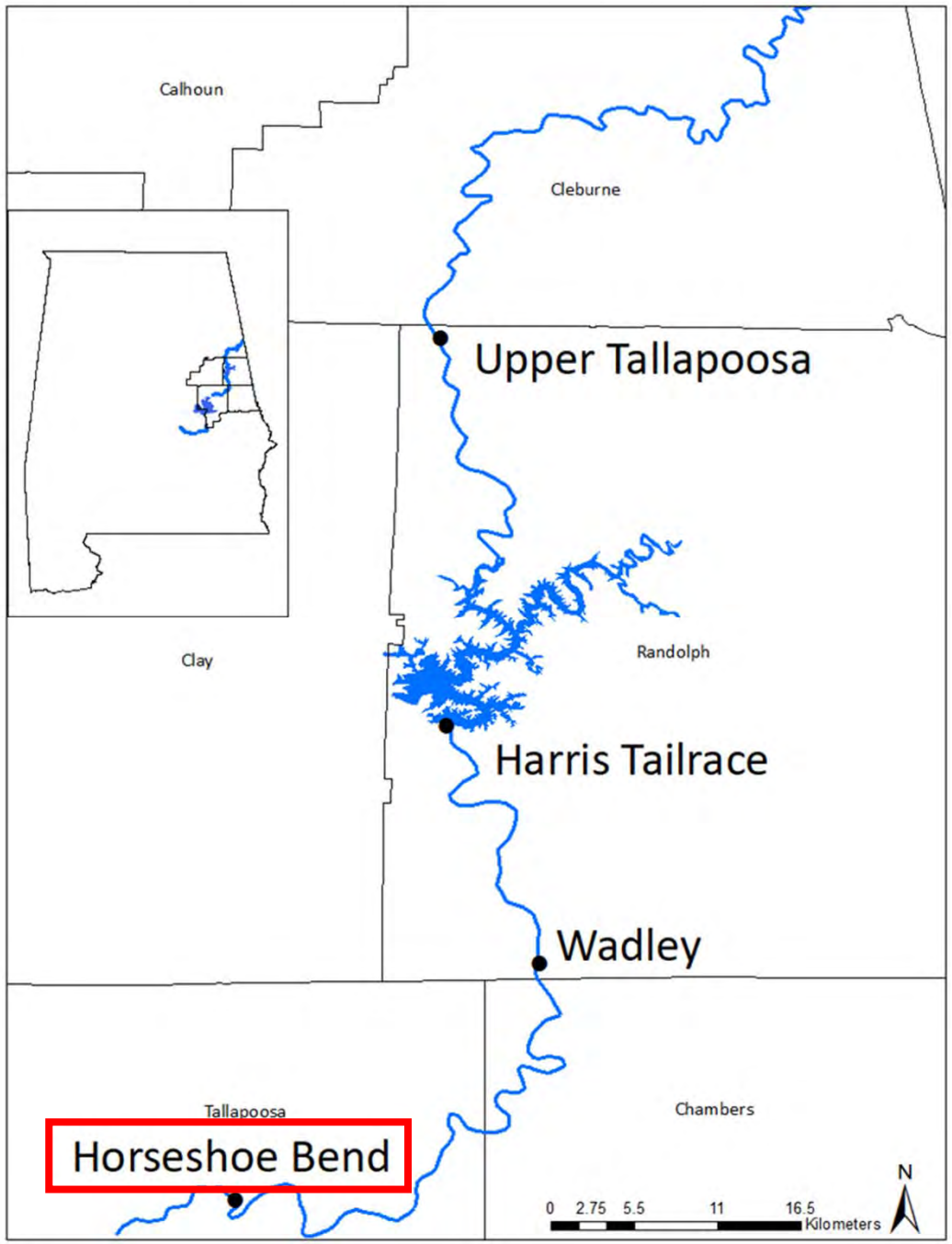
- The immediate tailrace of Harris Dam
- Bedrock dominated shoal habitat
- Shallow and clear
- Sampling coordinated with dam release schedule
- Accessed via dam facility


Calhoun
Cleburne
Upper Tallapoosa
Clay
Randolph
Harris Tailrace
Wadley
Tallapoosa
Chambers
Horseshoe Bend
N
0 2.75 5.5 11 16.5
Kilometers

Wadley

- ~23 RKM downstream of Harris Dam
- Upstream and downstream shoal complexes
- Deep, clear water
- Abundant woody debris
- Accessed via bank launch at AL-77

Photo Courtesy of Henry Hershey

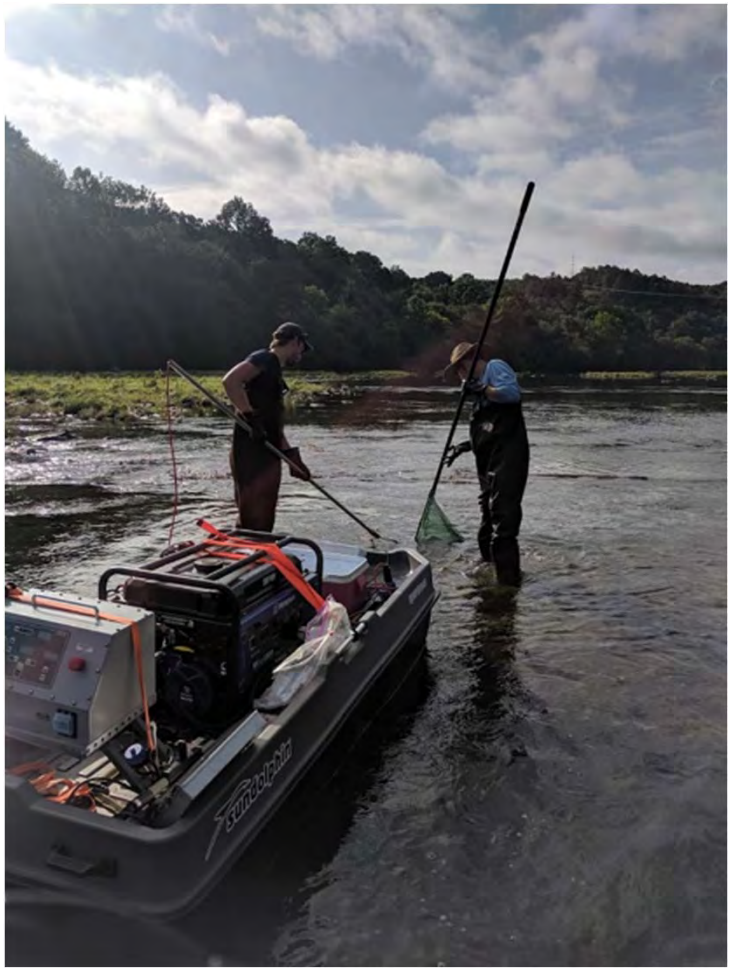

Calhoun
Cleburne
Upper Tallapoosa
Clay
Randolph
Harris Tailrace
Wadley
Tallapoosa
Chambers
Horseshoe Bend
N
0 2.75 5.5 11 16.5
Kilometers

Horseshoe Bend

- ~66 RKM downstream of Harris Dam
- Deep pools bounded by shoal complexes
- Clear, flowing water
- Accessed via Horseshoe Bend National Military Park

Field Methods

- All sites sampled every-other month
- Standardized boat/barge electrofishing
  - 6, 10-minute transects
  - Barge used in the tailrace
  - Fish transported to lab



Lab Methods

- All fish identified to species
- Non-target species
  - 10 of each non-target species weighed/measured
  - Remaining individuals weighed as a group
- Target species
  - Otoliths, gonads, and diets extracted
  - Fin clips collected from Alabama bass and Tallapoosa bass
  - Ages estimated, annuli measured

Species found at more than 1 site

Largescale stoneroller

Alabama shiner

Blacktail shiner

Striped shiner

Silverstripe shiner

Weed shiner

Coosa shiner

Common Carp*

Alabama hogsucker

Black redhorse

Blacktail redhorse

Yellow bullhead

Blue catfish

Channel catfish

Flathead catfish

Blackstripe topminnow

Bold indicates found at all sites; *Non-native

Species found at more than 1 site

Shadow bass

Redbreast sunfish

Green sunfish

Bluegill

Redear sunfish

Hybrid sunfish

Black crappie

Largemouth bass

Tallapoosa bass

Alabama bass

Lipstick darter

Speckled darter

Mobile logperch

Bronze darter

Muscadine darter

Bold indicates found at all sites; *Non-native

Species unique to Lee's Bridge

- Bowfin
- Threadfin shad
- Pretty shiner
- Spotted sucker
- River redhorse
- Total species richness: 28

www.outdooralabama.com/redhorse/river-redhorse

www.outdooralabama.com/other-species/threadfin-shad

Species unique to Harris tailrace

- Snail bullhead
- Tallapoosa darter
- Striped bass
- Rough shiner
- Rosyface shiner
- Total species richness: 33

www.outdooralabama.com/darters/tallapoosa

Species unique to Wadley

- Brown bullhead
- Speckled madtom
- Tallapoosa shiner
- Redbreast sunfish hybrid
- Total species richness: 30

www.outdooralabama.com/shiners/tallapoosa

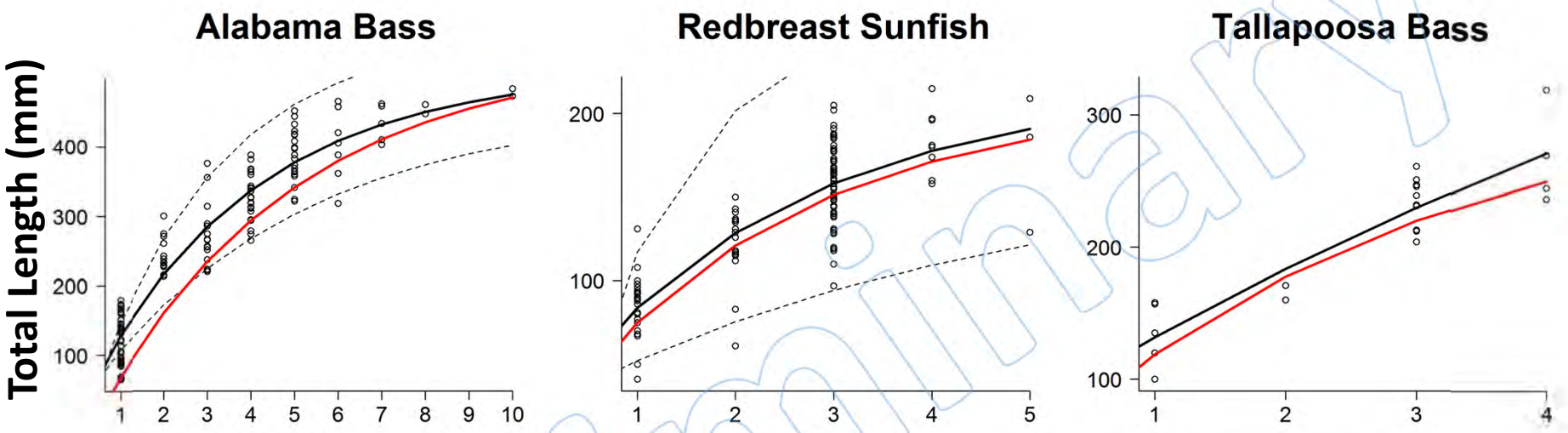
Species unique to Horseshoe Bend

- Blueback herring*
- Skipjack herring
- Blackspotted topminnow
- Warmouth
- Total species richness: 33

*Non-native

www.outdooralabama.com/other-species/skipjack-herring

Preliminary Results – von Bertalanffy Growth Curves



L_∞=507.17
K=0.26
T_0=0.91
CPUE: 12.0hr^{-1}

L_∞=216.05
K=0.41
T_0=0.83
CPUE: 9hr^{-1}

L_∞=633.39*
K=0.11
T_0=0.32
CPUE: 1.2hr^{-1}

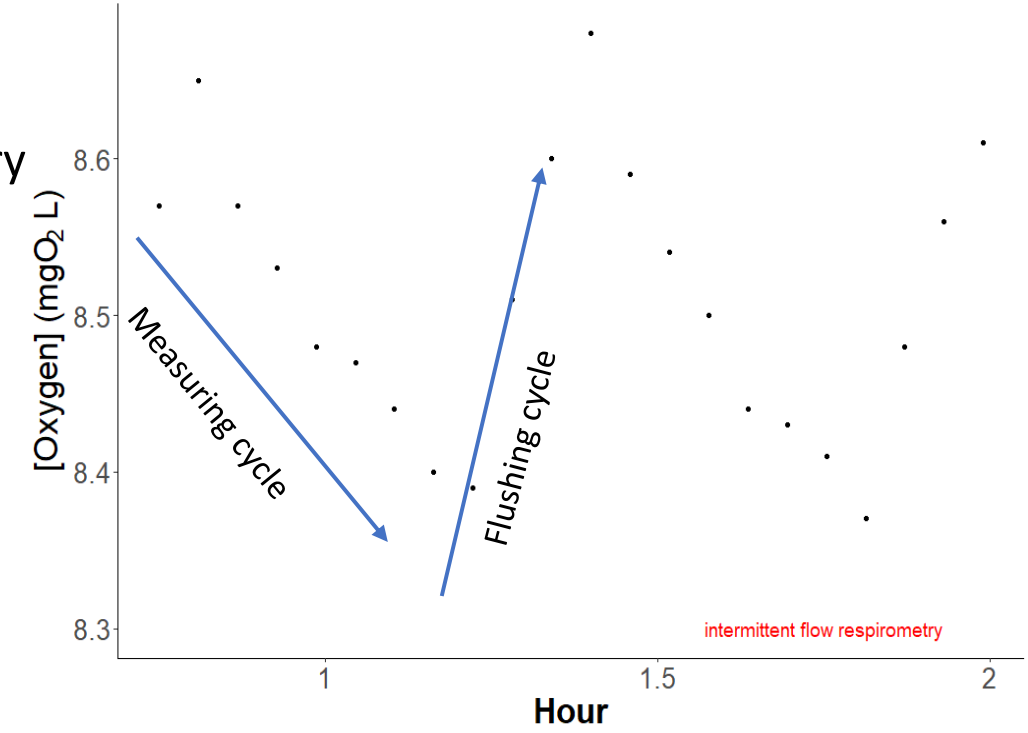
Objective 4

- Quantify effects of temperature and flow variation on target fish species energy budgets using bioenergetics modeling

  - Part 1: Respirometry
    - Static Respirometry
    - Swimming Respirometry

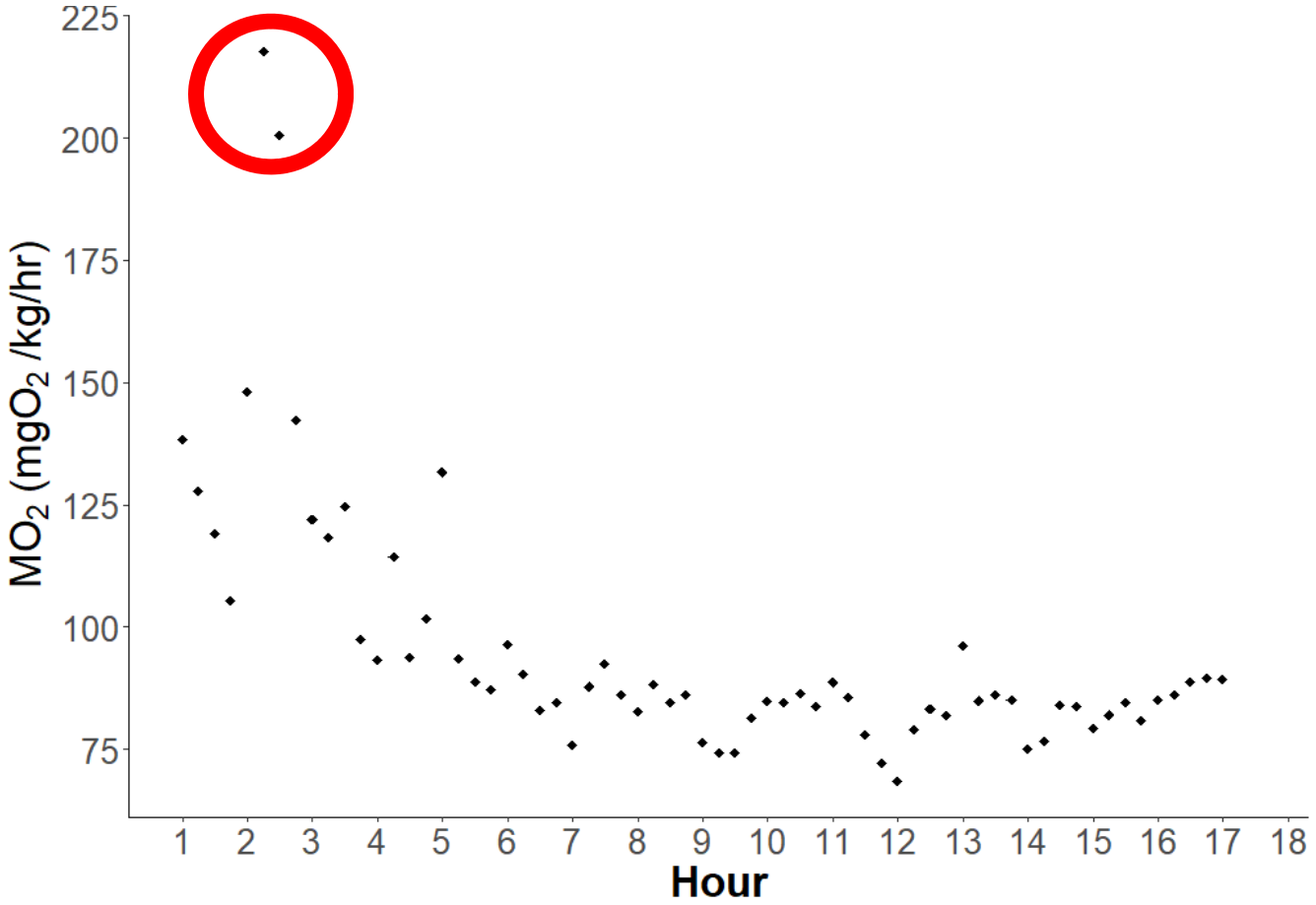
Static Respirometry

- Standard metabolic rate
  - Stationary, no swimming
    - Intermittent flow respirometry
    - Closed respirometry
- MO_2 ($mgO_2kg^{-1}hr^{-1}$)
  - (initial $[O_2]$ – final $[O_2]$) * (V_c/t) / W
- Requires acclimation time



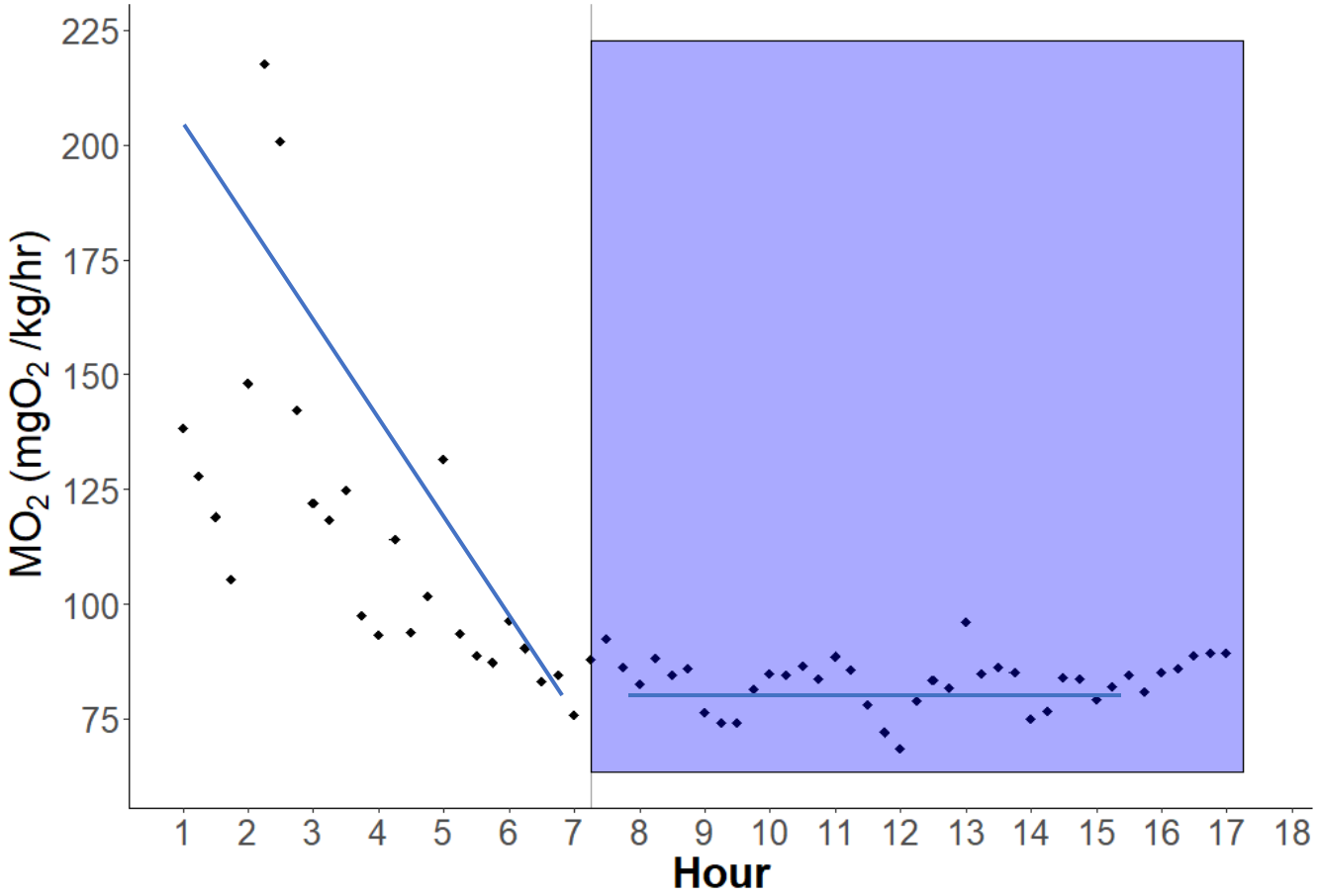
Static Respirometry

- Point stress event
- Determine acclimation



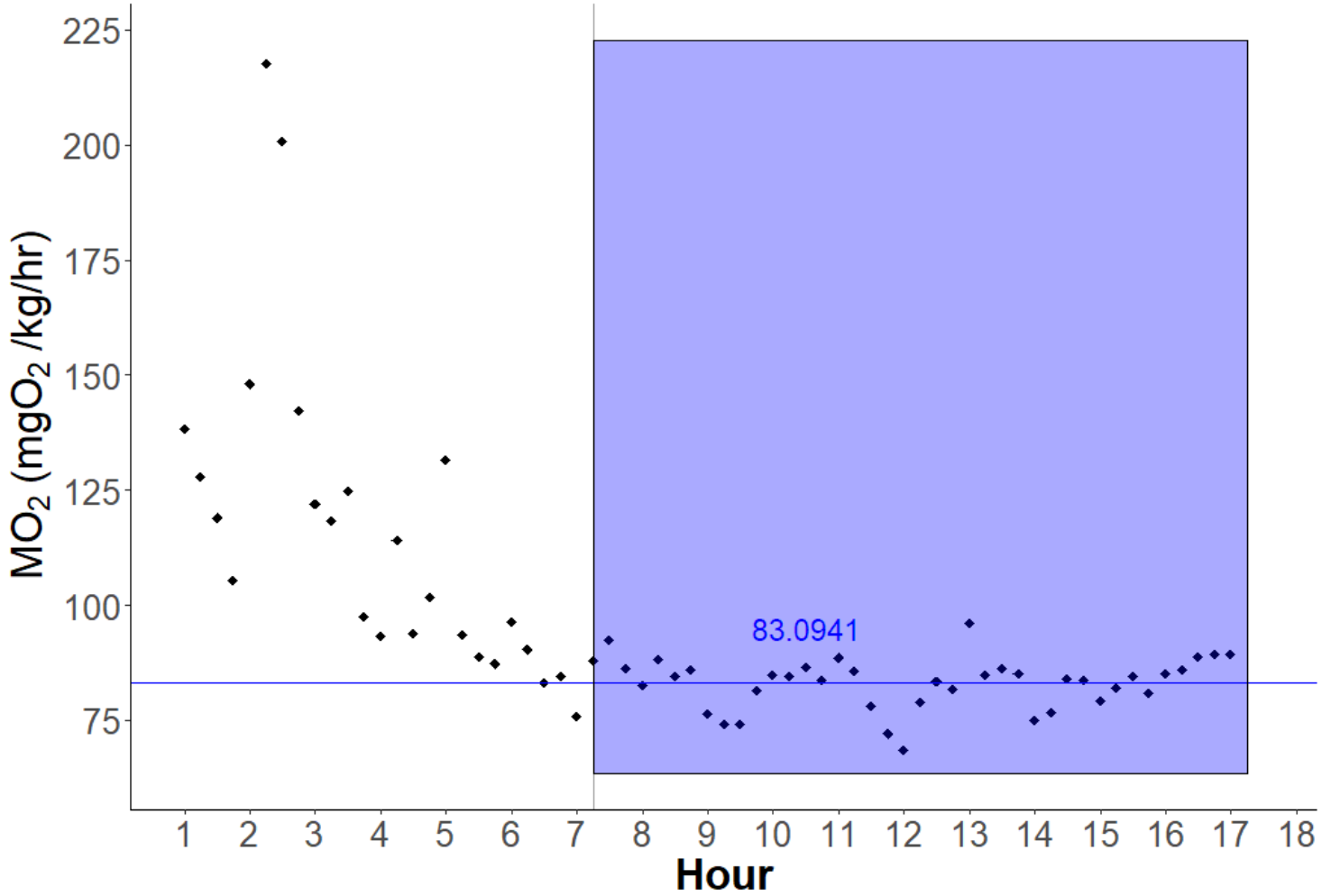
Static Respirometry

- Acclimation determination
  - Break point
    - Differs per individual



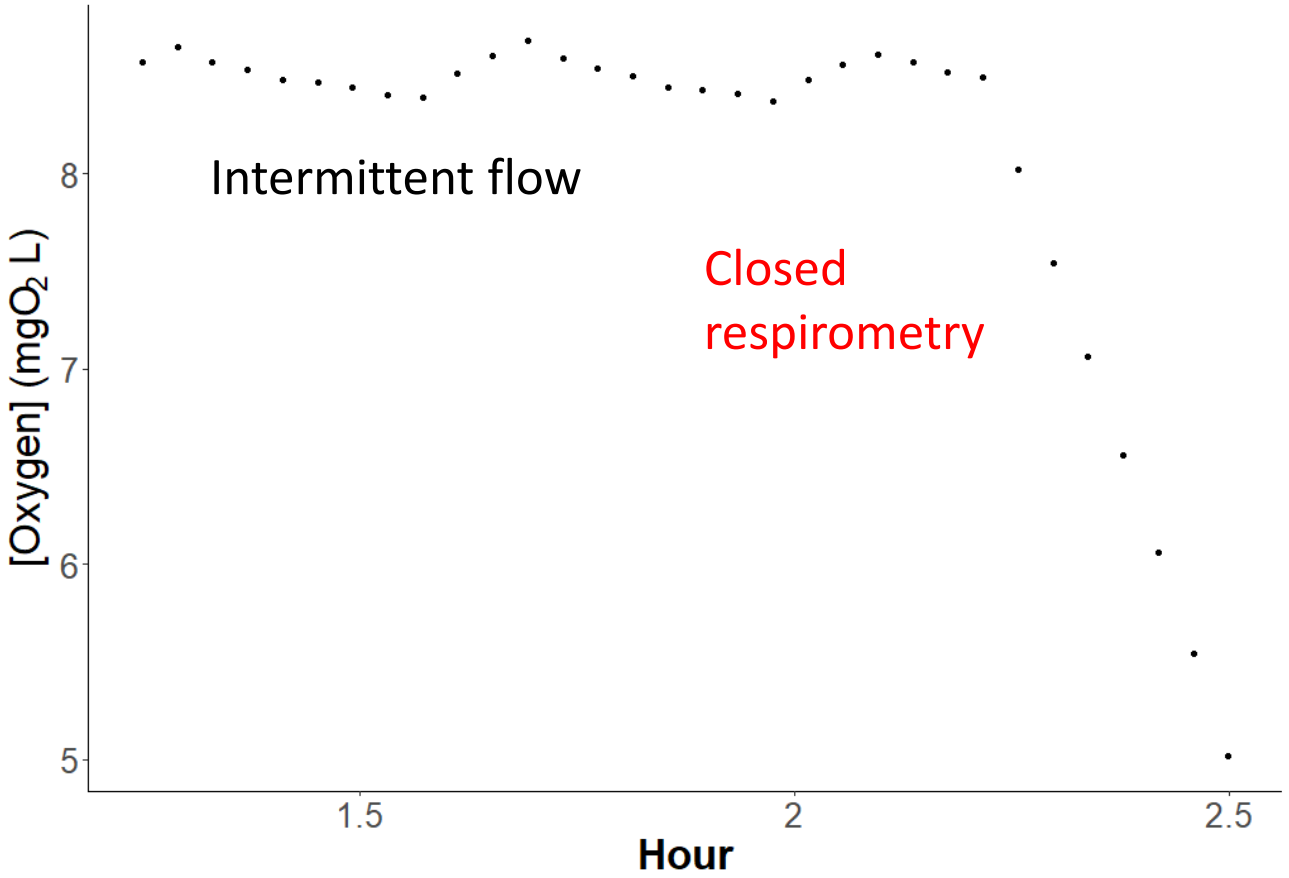
Static Respirometry

- Acclimation determination
  - MO_2 = 83.094



Static Respirometry

- Closed respirometry
  - No flushing
  - Final measurement
- Calculate overall MO_2

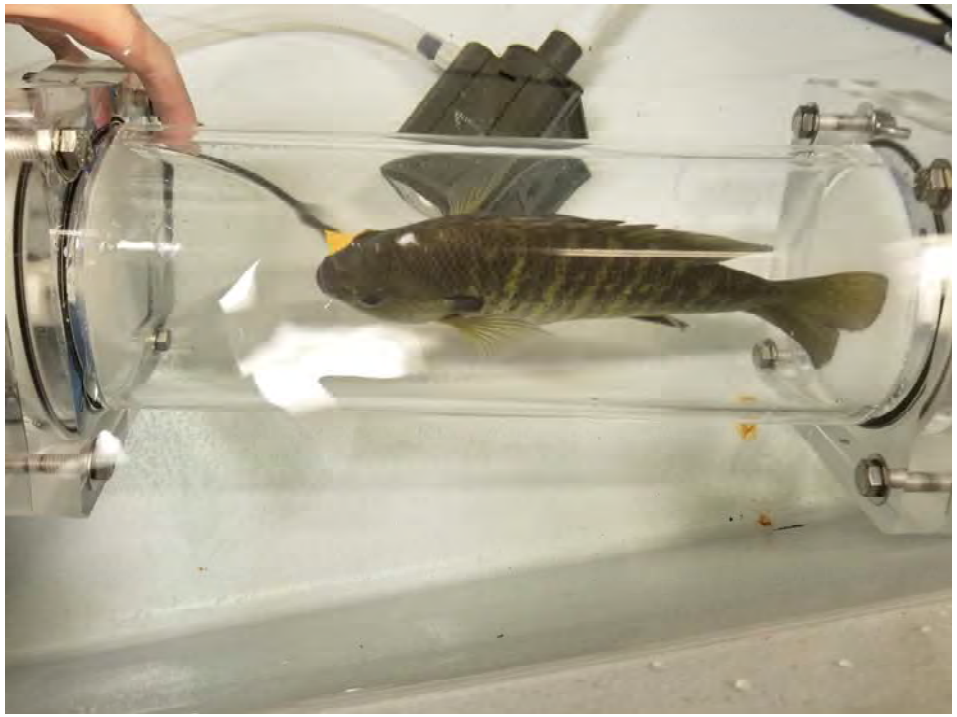


Static Respirometry

- 8 chamber system (Loligo)
  - Medium chambers: ~600 ml
  - Large chambers: ~2600 ml
- Intermittent flow respirometry
  - Automated
- Temperature controlled
- Oxygen measured electronically

Static Respirometry

- Standard metabolic rate 21°C
  - Channel Catfish (n=2)
    - Weight range: 306 – 314 g
  - Alabama Bass (n=7)
    - Weight range: 17.36 -158.2 g
  - Redbreast Sunfish (n=14)
    - Weight range: 17.14 – 87.8 g
  - Tallapoosa Bass (n=1)
    - Weight range: 103.5 g



Static Respirometry

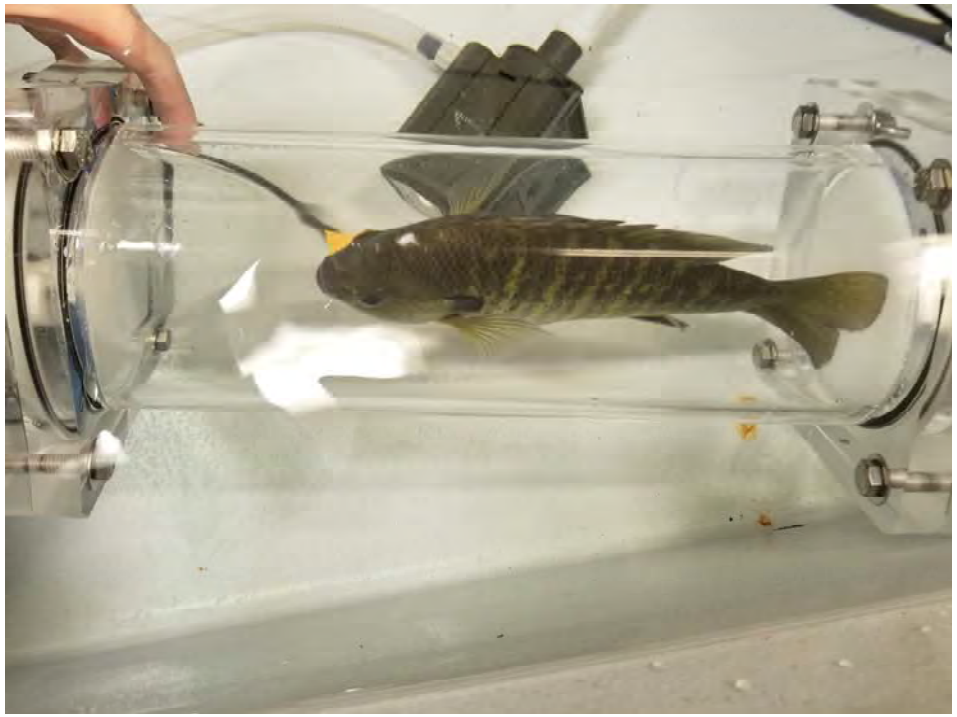
- Fish weighed
- Acclimated in chamber
  - 12 hr + 1
  - Intermittent flow respirometry
    - 1200/180 s
- Closed respirometry

Preliminary Static Respirometry 21°C

Size (g)	Redbreast Sunfish	Alabama Bass	Channel Catfish	Tallapoosa Bass
14-34	104.570 (2)	120.917 (3)		
34.1-54	89.299 (4)	114.736 (1)		
54.1-74	114.267 (4)	97.993 (1)		
74.1-94	85.518 (4)	54.176 (1)		
94.1-114				78.029 (1)
294.1-314			89.373 (2)	
354.1-374		68.598 (1)		

Work in 2020

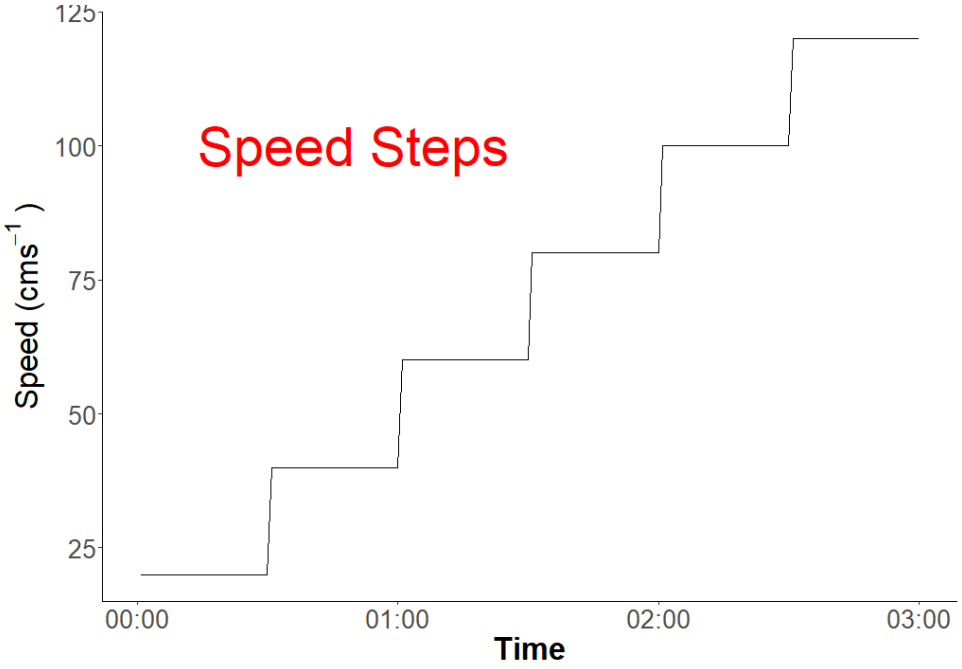
- Test fish from all species from all sites
- Add 10°C temperature trials



Swimming Respirometry & Performance

- Active metabolic rates
  - Metabolic rate of fish at given swimming speed
- Swimming performance
  - Critical swimming speed

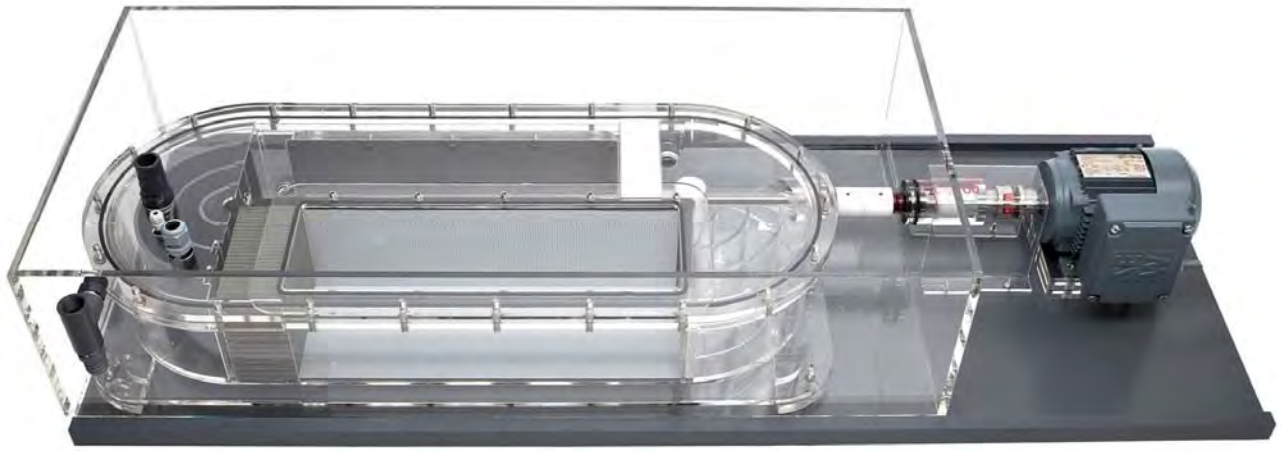
Swimming Performance



- Critical Swimming Speed
- $U_{crit} = U_1 + U_2(\frac{t_1}{t_2})$
  - U_1 - last completed bout
  - U_2 - velocity increment
  - $\frac{t_1}{t_2}$ - proportion of time at last step
- Bass – 30 min
- Redbreast Sunfish – 45 min
- Channel Catfish – 30 min

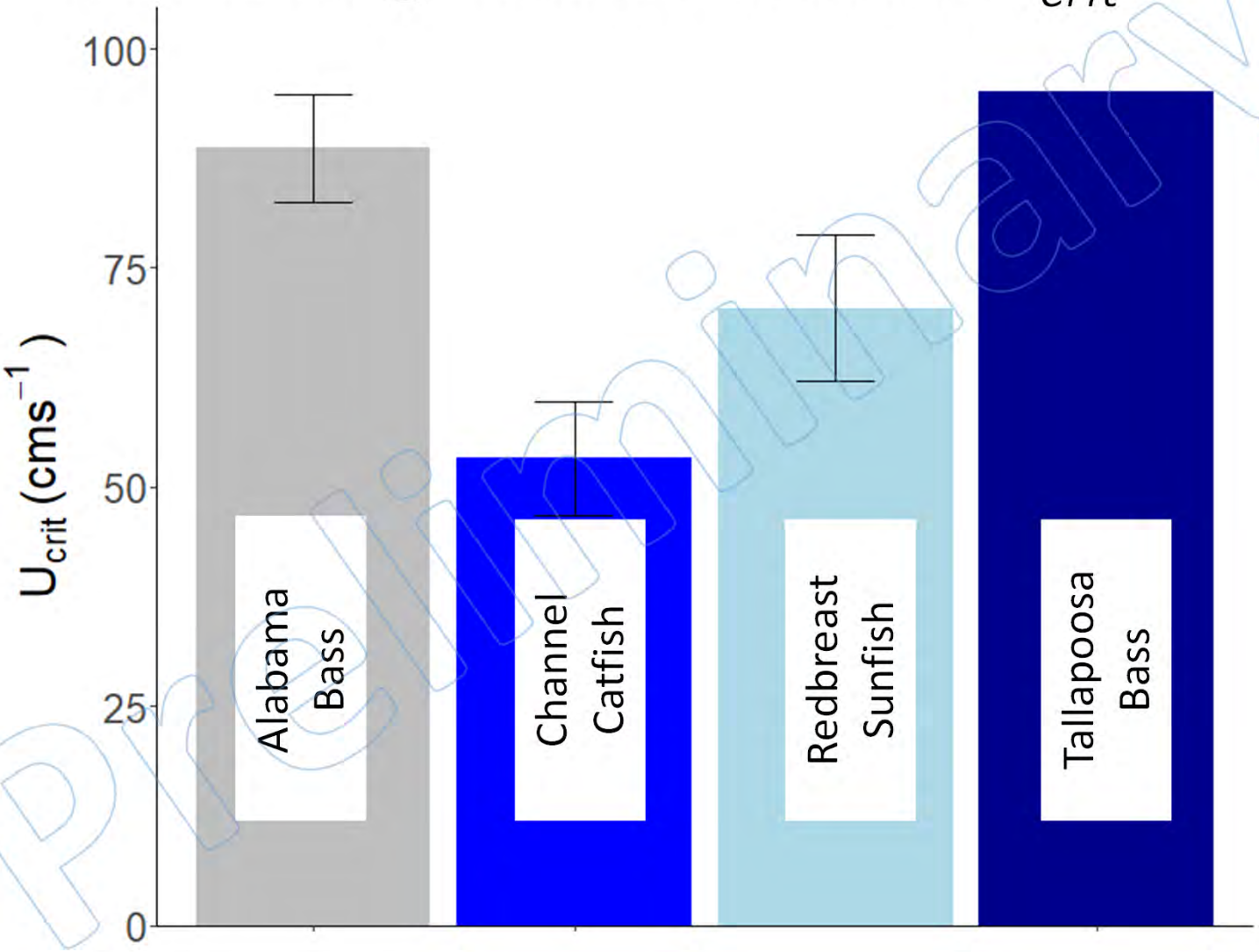
Swimming Respirometry & Performance

- 90 L Loligo swimming respirometer
- Temperature controlled
  - Water reservoirs
- Oxygen measured electronically
- Speed control automated

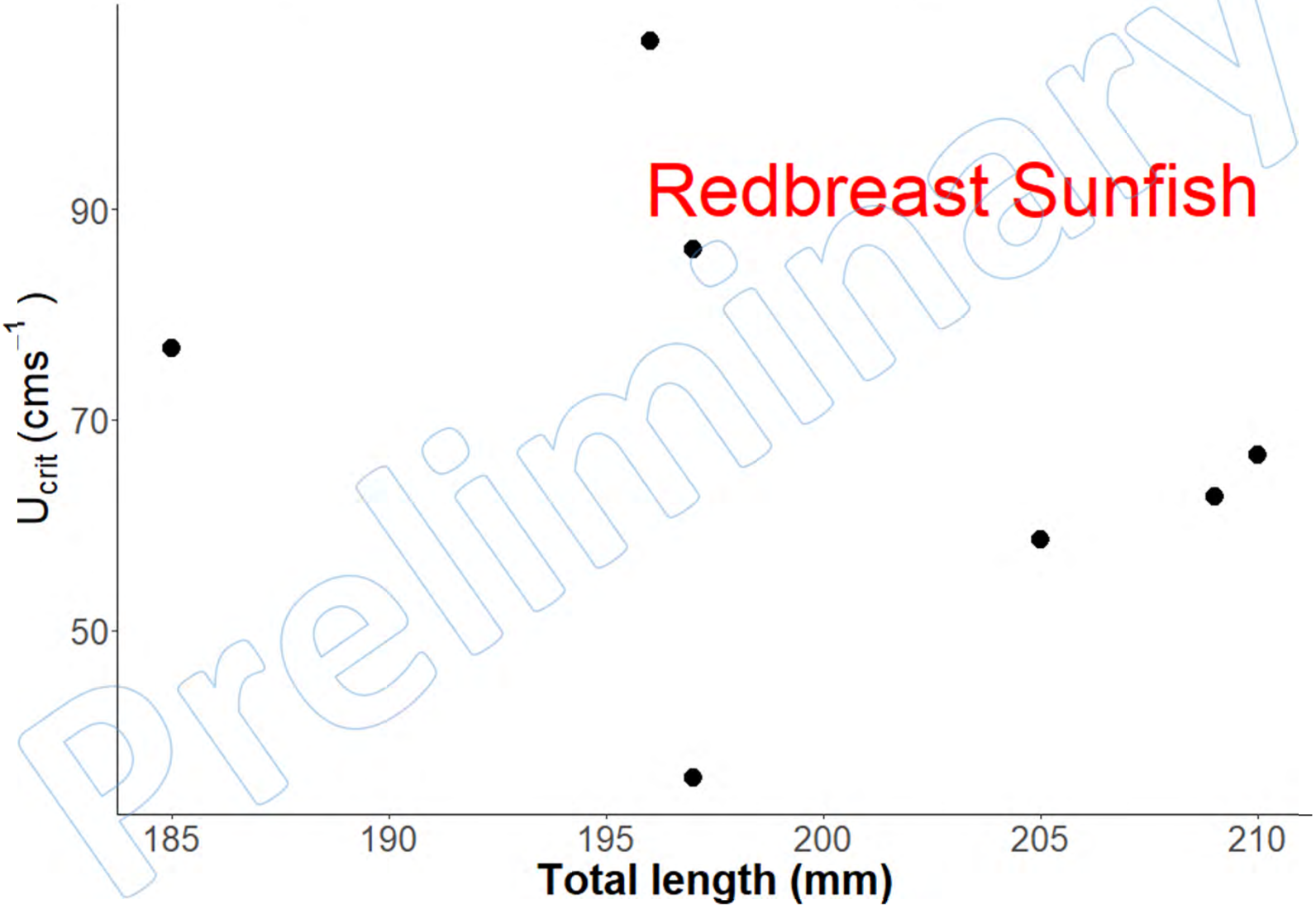


PRELIMINARY DATA

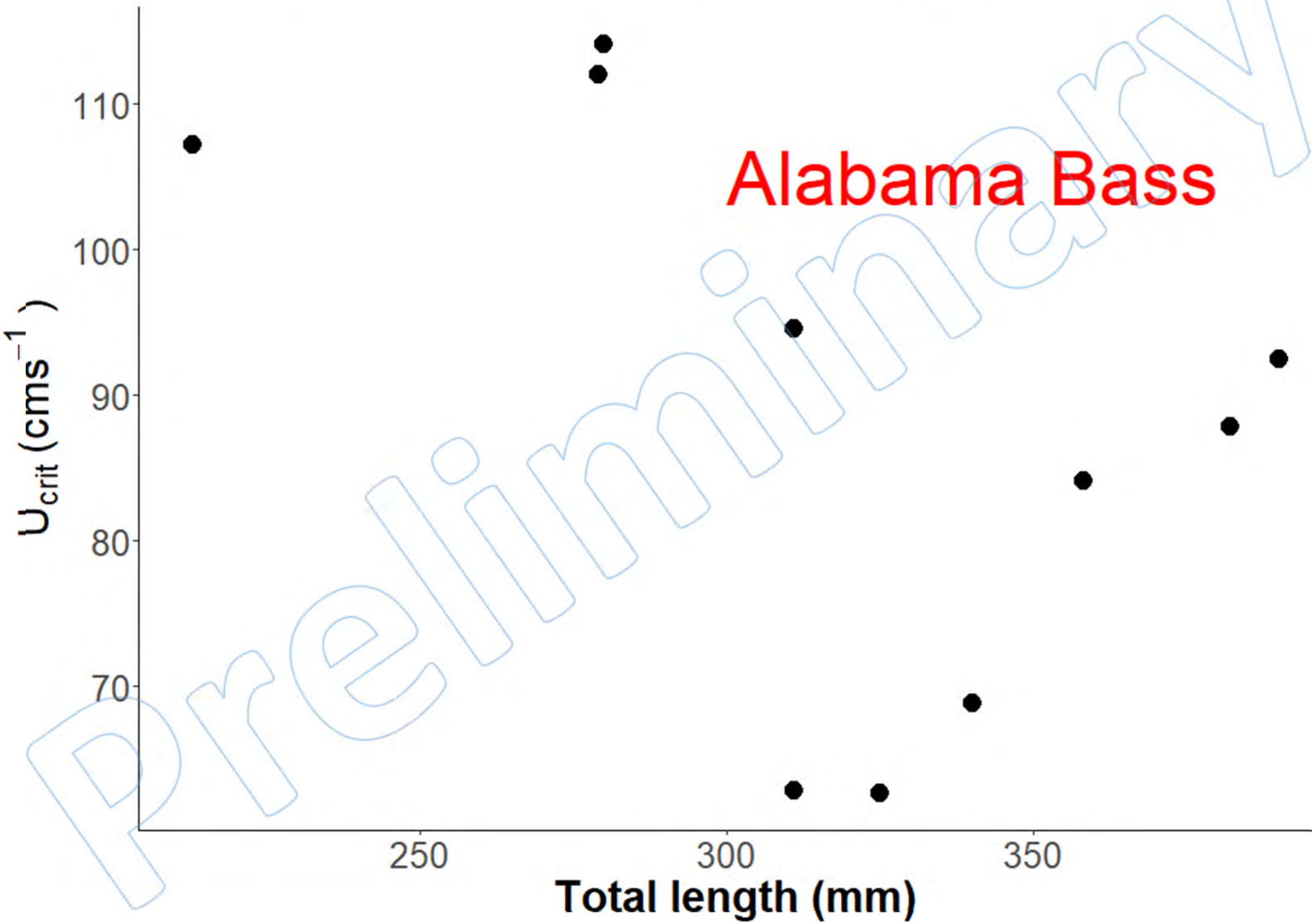
Swimming Performance: U_{crit}



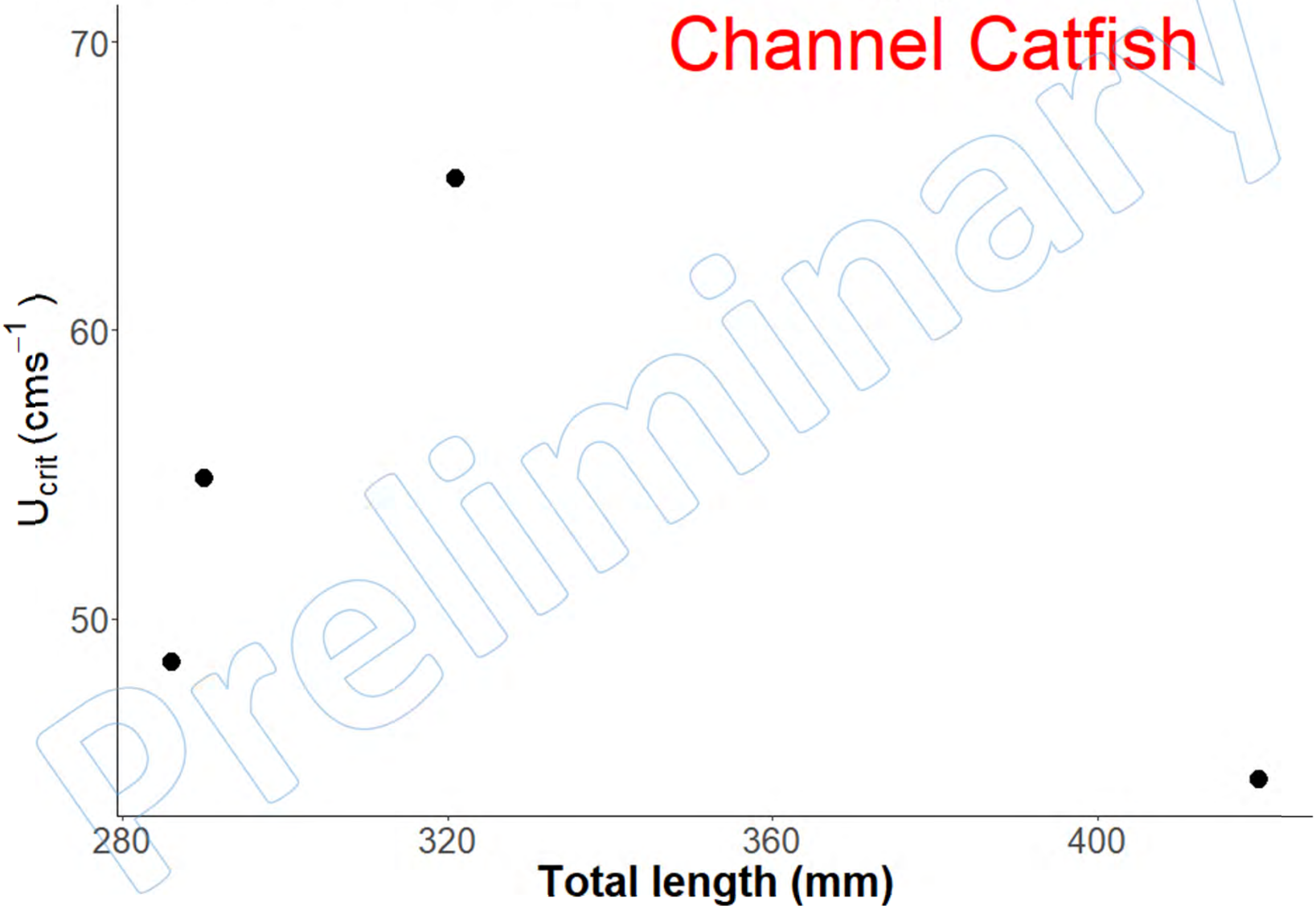
Swimming Performance: U_{crit}



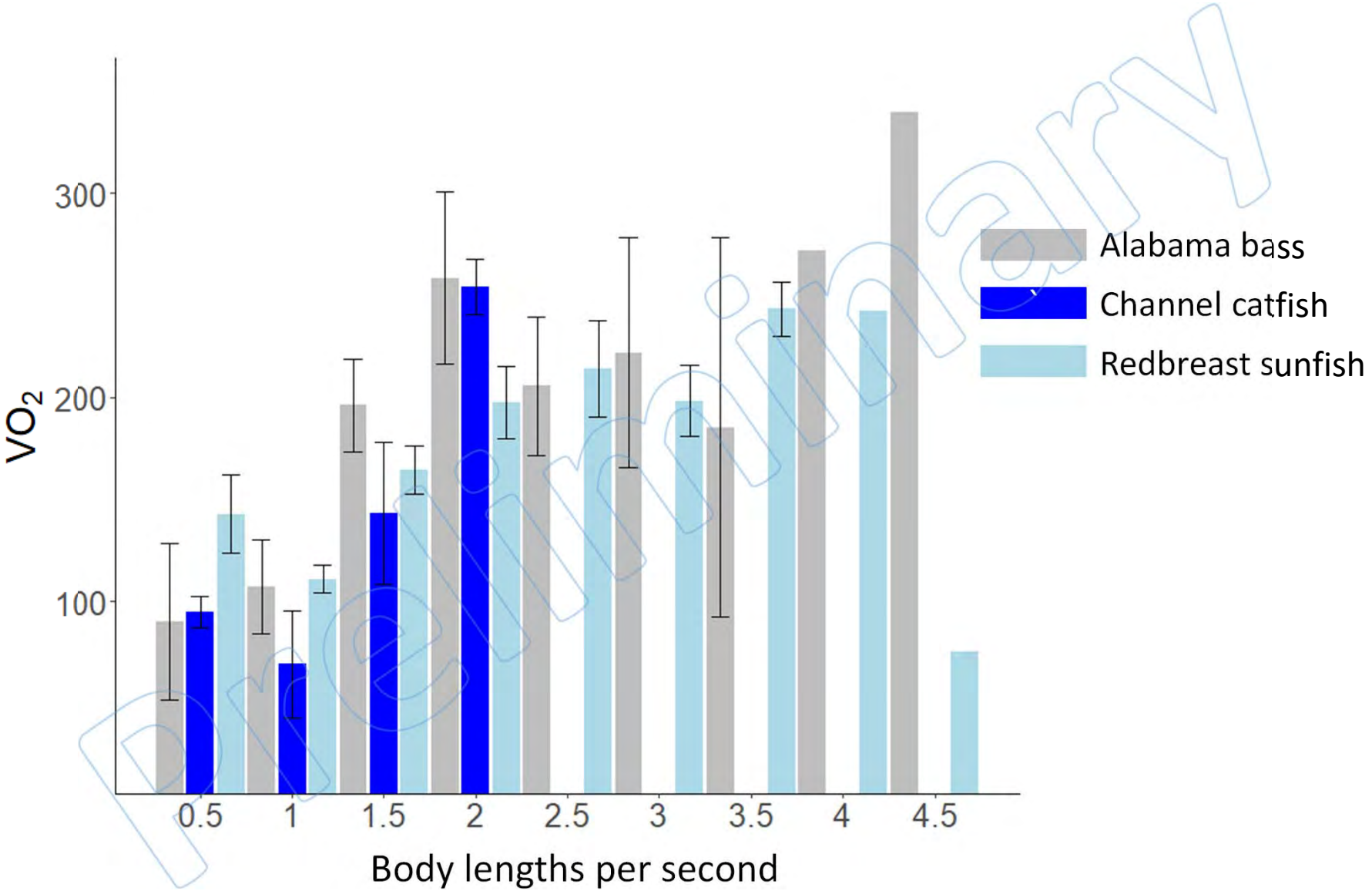
Swimming Performance: U_{crit}



Swimming Performance: U_{crit}



Swimming Respirometry VO_2



Experimental Work in 2020

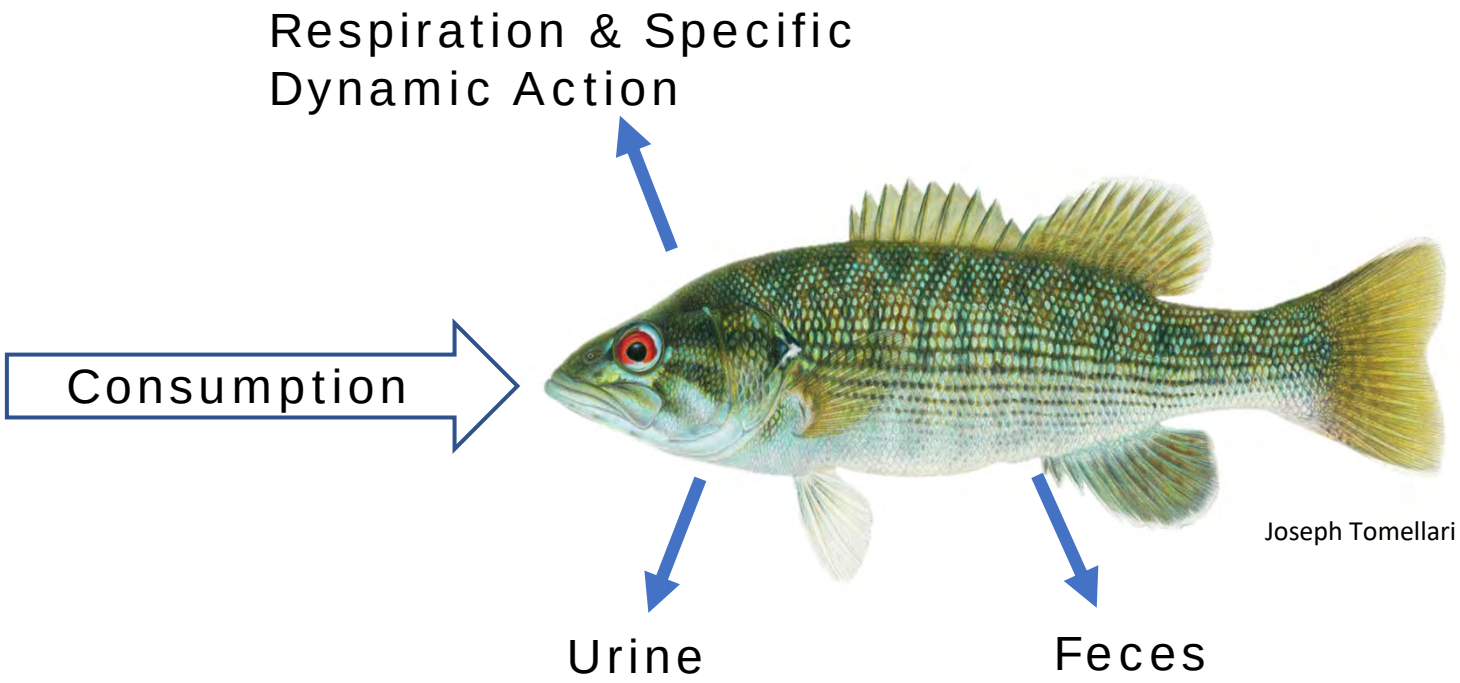
- Complete trials to determine bioenergetics parameters
- Conduct swimming trials with rapid temperature and flow change
- Complete tailbeat analysis

Objective 4

- Quantify effects of temperature and flow variation on target fish species energy budgets using bioenergetics modeling

  - Part 2: Bioenergetics modeling

Basic Fish Bioenergetics Model



Growth = Consumption - (R + F + U + SDA)

Growth = Consumption - (Costs)

Costs = Respiration + Feces + Urine + Cost of Digestion

Uses of Bioenergetics Models

- evaluation of stocking
- nutrient recycling
- contaminant accumulation
- aquaculture
- exploring evolutionary influence**s**

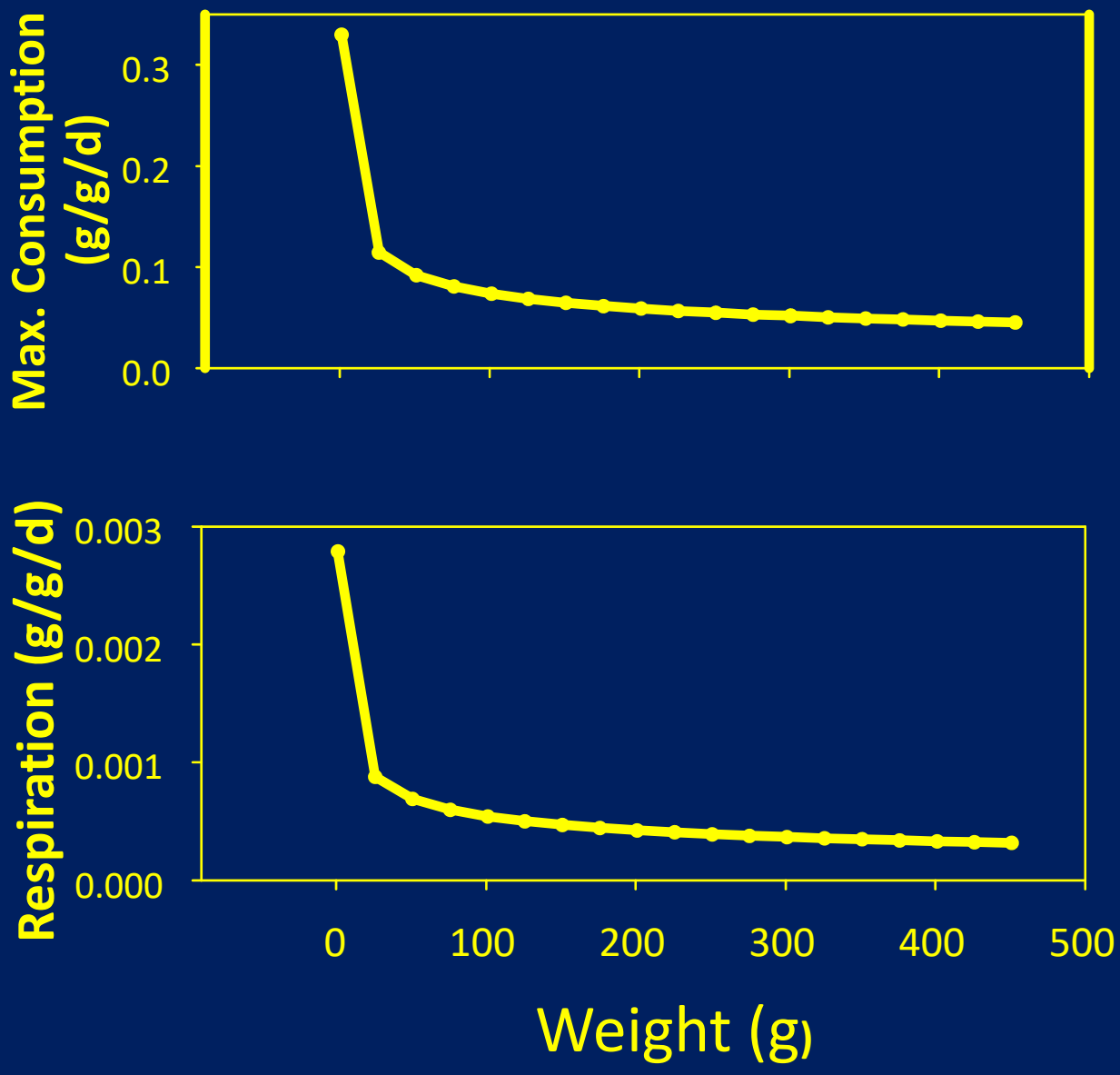
Uses of Bioenergetics Models

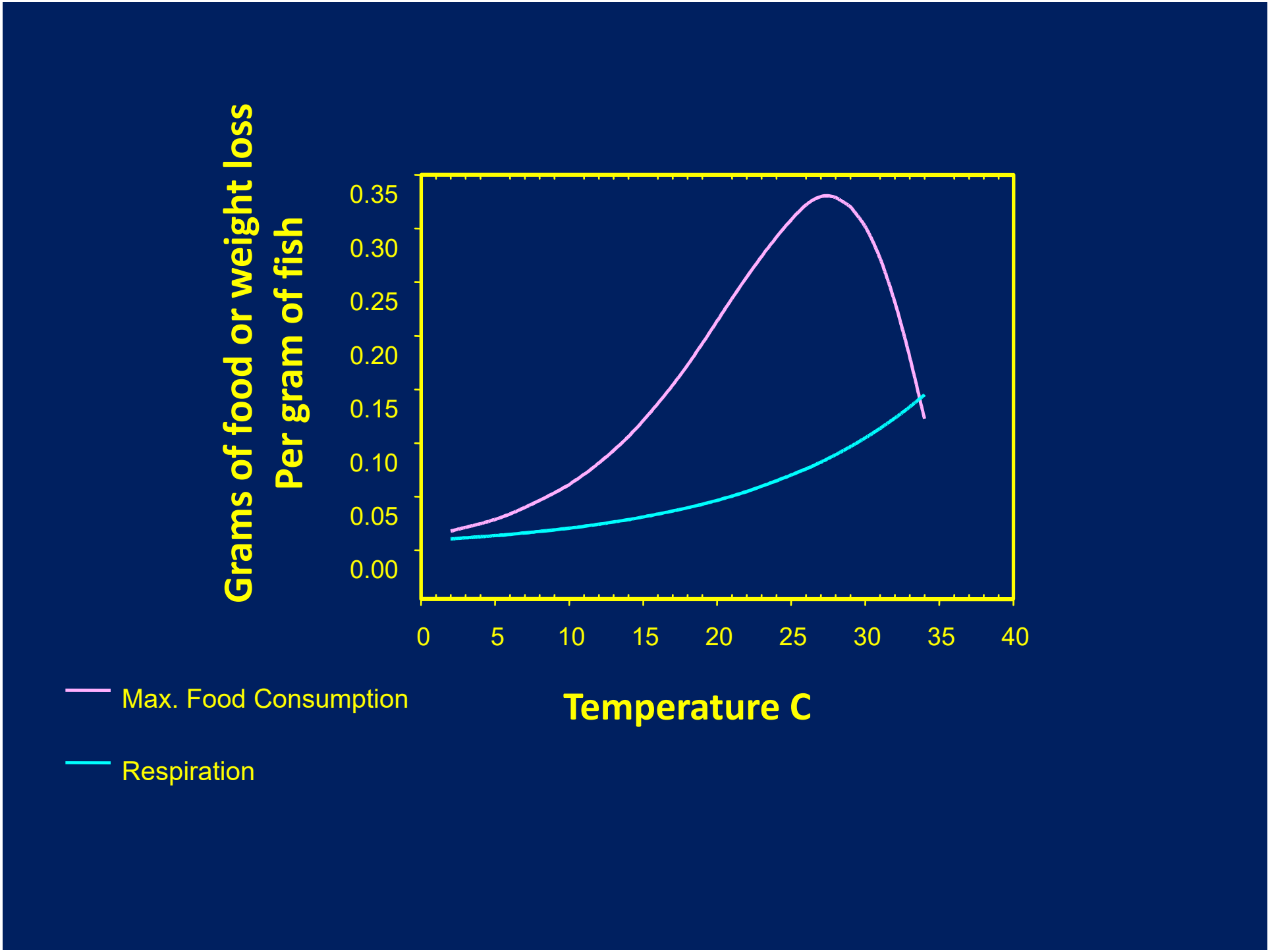
- evaluation of stocking
- nutrient recycling
- contaminant accumulation
- aquaculture
- exploring evolutionary influences
- **habitat effects on growth**
- **effects of environmental stress**

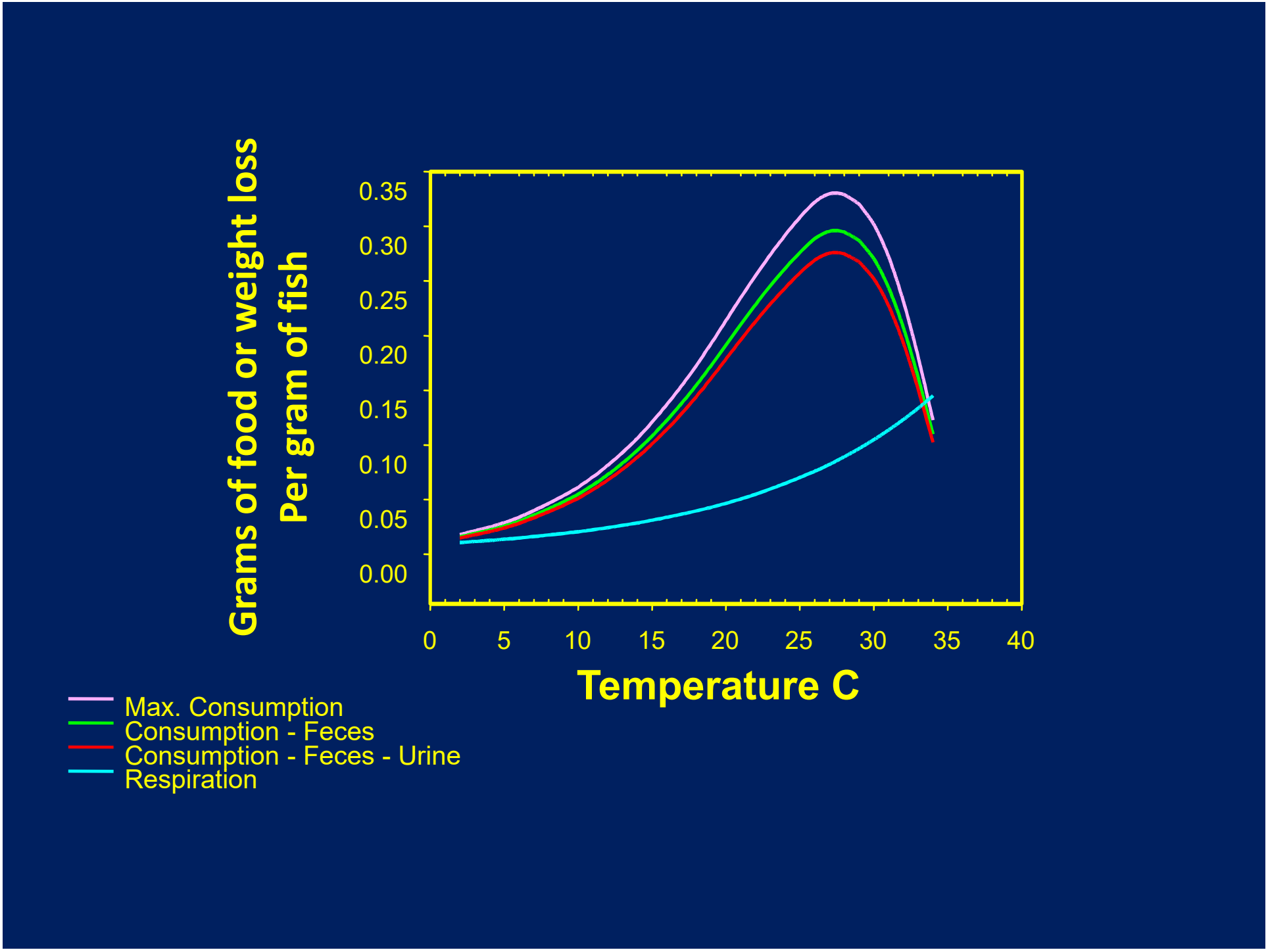
What functional relationships do we need to construct and run bioenergetics models?

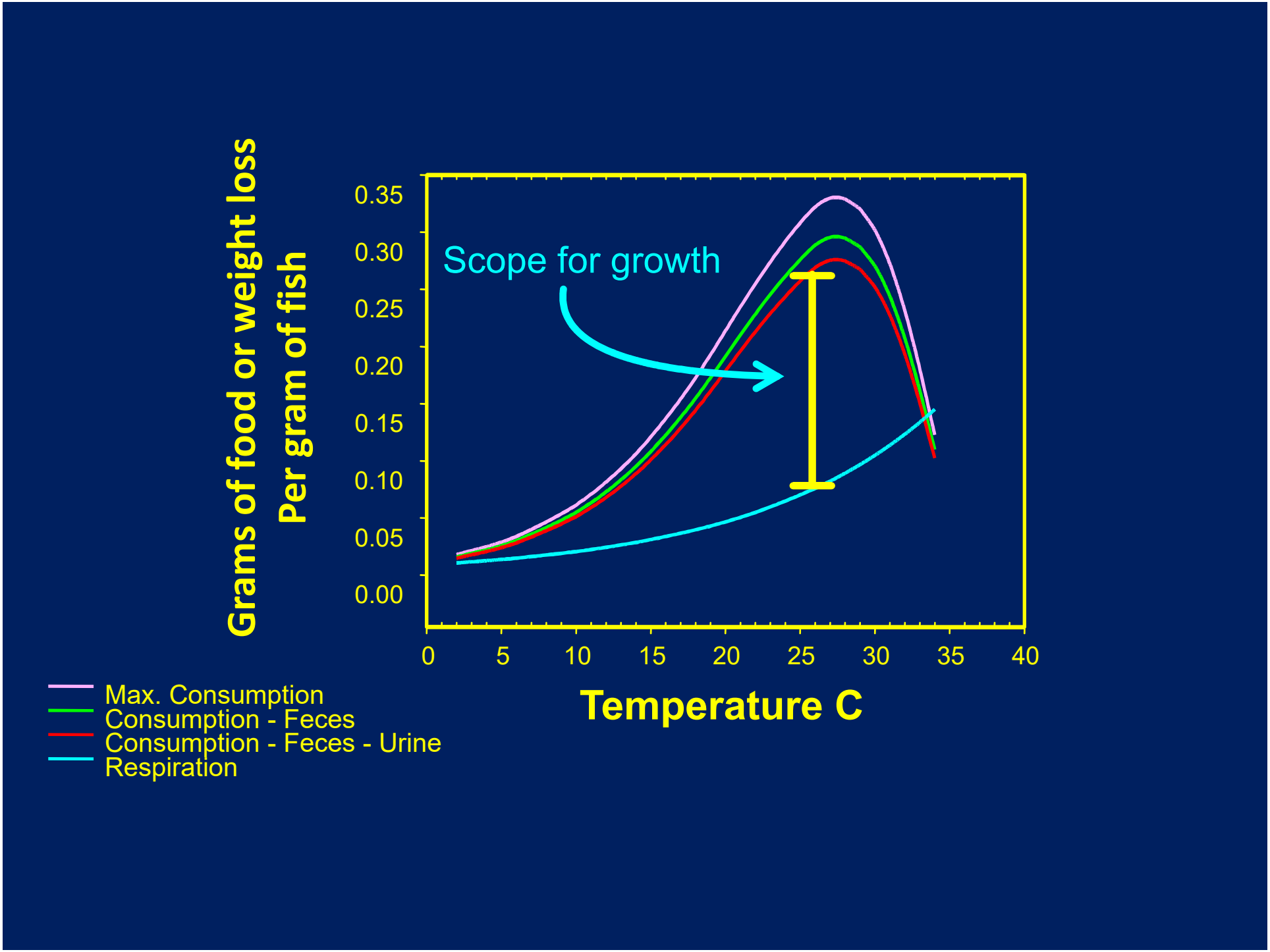
- The effect of temperature on respiration and food consumption
- The effect of body weight on respiration and food consumption
- The effect of activity (swimming) on respiration

Effect of weight on respiration & consumption




Grams of food or weight loss
Per gram of fish
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0
5
10
15
20
25
30
35
40
Temperature C
Max. Food Consumption
Respiration


Grams of food or weight loss
Per gram of fish
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0
5
10
15
20
25
30
35
40
Temperature C
Max. Consumption
Consumption - Feces
Consumption - Feces - Urine
Respiration


Grams of food or weight loss
Per gram of fish
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Scope for growth
0
5
10
15
20
25
30
35
40
Temperature C
Max. Consumption
Consumption - Feces
Consumption - Feces - Urine
Respiration

Model Data Inputs

- Growth
  - body size, caloric density, reproduction
- Diet
  - prey type, caloric density
- Temperature
- Velocity

Application of Bioenergetics Approaches to Harris Dam Impact Assessment

- Temperature fluctuation effect on metabolism
- Flow impact on activity rate – metabolism
- Downstream shifts on community structure and food availability

Current Limitations of the "Wisconsin" Bioenergetics Model

- Currently no model for Tallapoosa Bass or Redbreast Sunfish
- Channel Catfish model parameters from lentic systems
- Temperature and activity operate on a daily time step

Current Status and Plans for Bioenergetics Modeling

- Field data (growth, diets, water temperature) are being collected
- Respiration parameters for temperature and weight dependence are being determined
- Consumption parameters will be “borrowed” from related species
- Simulations will be run starting this summer comparing variable temperature and activity rates

HAT 1 and 5 meeting - tomorrow

APC Harris Relicensing <g2apchr@southernco.com>

Wed 6/3/2020 8:14 PM

To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Bcc: damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; keith.henderson@dcnr.alabama.gov <keith.henderson@dcnr.alabama.gov>; mike.holley@dcnr.alabama.gov <mike.holley@dcnr.alabama.gov>; evan.lawrence@dcnr.alabama.gov <evan.lawrence@dcnr.alabama.gov>; matthew.marshall@dcnr.alabama.gov <matthew.marshall@dcnr.alabama.gov>; brian.atkins@adeca.alabama.gov <brian.atkins@adeca.alabama.gov>; tom.littlepage@adeca.alabama.gov <tom.littlepage@adeca.alabama.gov>; jhaslbauer@adem.alabama.gov <jhaslbauer@adem.alabama.gov>; cljohnson@adem.alabama.gov <cljohnson@adem.alabama.gov>; mlen@adem.alabama.gov <mlen@adem.alabama.gov>; fal@adem.alabama.gov <fal@adem.alabama.gov>; djmoore@adem.alabama.gov <djmoore@adem.alabama.gov>; arsegars@southernco.com <arsegars@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; wtanders@southernco.com <wtanders@southernco.com>; jefbaker@southernco.com <jefbaker@southernco.com>

2 attachments (2 MB)

2020-6-4 HAT 1 and 5 meeting - Phase 2 structure analysis.pdf; 2020-6-4 HAT 1 and 5 meeting - downstream structure survey.pdf;

Attached are the presentations for tomorrow's HAT 1 and 5 meeting.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Please join us for a HAT 1 and HAT 5 meeting on Thursday, June 4, 2020 from 9 AM-11 AM. This meeting will be a combined HAT meeting because one of the analyses pertains to both the Operations HAT and the Recreation HAT. The two methodologies we will present include:

1. Methodology for analyzing downstream structures that would be affected by increased flooding downstream of Harris Dam as a result of raising the winter operating curve 1-4 feet higher than existing conditions. This analysis will be part of Phase 2 of the Operating Curve Change Feasibility Analysis Study.
2. Methodology for evaluating the private and public structures (i.e., boat ramps, boat docks/courtesy piers, etc.) on Lake Harris that would be useable at each of the four winter operating curve elevations. This analysis is referred to in both the Recreation Evaluation Study and the Operating Curve Change Feasibility Analysis Study.

Participants will have an opportunity to ask questions and comment on these methods.

Join Skype Meeting

Trouble Joining? Try Skype Web App

Join by phone

+1 (205) 257-2663
Conference ID: 3264749

Thanks,

R.L. Harris Dam Relicensing
FERC No. 2628

HAT 1 Meeting
June 4, 2020

Operating Curve Change Feasibility Analysis

Phase II Downstream Structure Survey

HARRIS DAM
RELICENSING

Phone Etiquette

- ❑Be patient with any technology issues
- ❑Follow the facilitator's instructions
- ❑Phones will be muted during presentations
- ❑Follow along with PDF of presentations
- ❑Write down any questions you have for the designated question section
- ❑Clearly state name and organization when asking questions
- ❑Facilitator will ask for participant questions following each section of the presentation

HARRIS DAM
RELICENSING

Harris Downstream Structure Survey

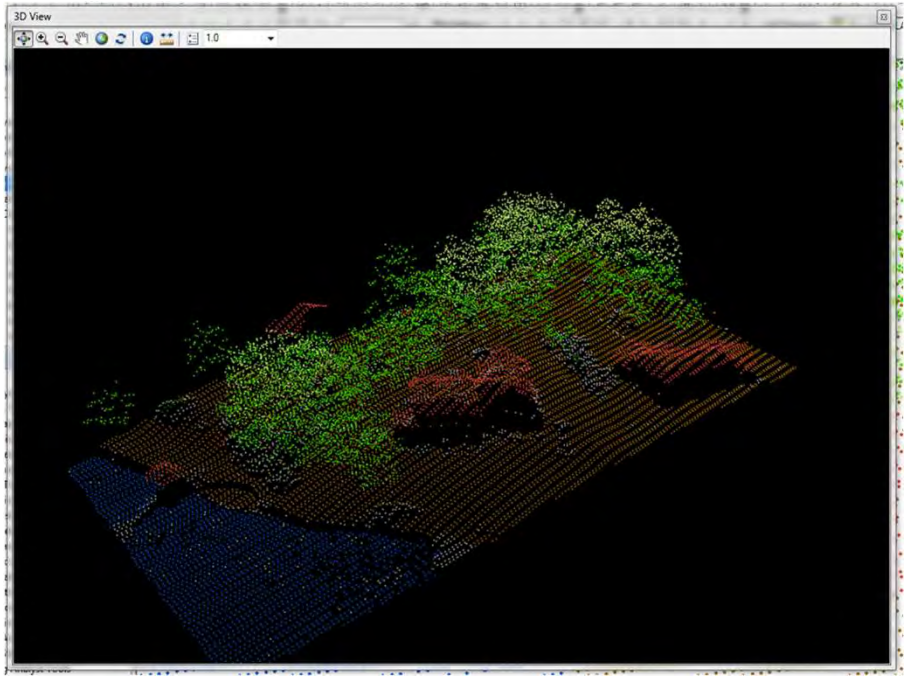
- An operating curve change may affect areas downstream of Harris Dam
  - Effects are associated with flooding

- Phase 2 of the Operating Curve Change Feasibility Analysis will include:
  - Identifying affected structures
  - # of structures
  - Location
  - Depth & duration of inundation

- Identifying structures is no small task

Methods: Remote Sensing

- LiDAR – 4 points per m^2
- 1 m USDA NAIP 4 band image (R, G, B, NiR)
- Classification Workflow:
  - Data management
  - Create training data
  - Classify image pixels
  - QAQC – Confusion Matrix



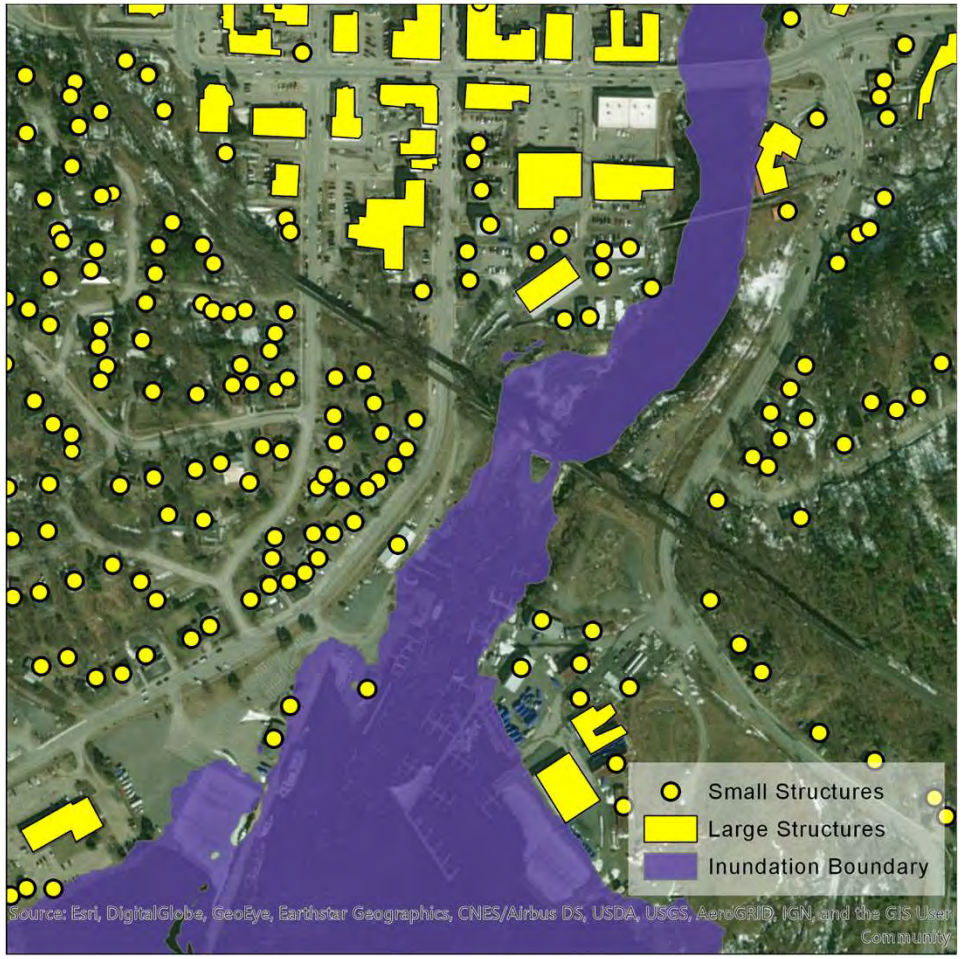
Methods: OBIA

- Object Based Image Analysis in ArcGIS Pro Image Analyst

1. Group pixels into objects - segmentation
2. Create training data
3. Classify Image
4. Assess quality with Confusion Matrix
5. Heads up digitizing
6. Spatial intersection & summarize

Anticipated Output

- Once identified – we will use a GIS to find structures impacted with a spatial intersection
- Series of maps showing location of all structures with symbols for flooded vs. not flooded
- Summary statistics in report
  - # of structures affected by rule curve
  - Min., Avg., Max. depth of inundation
  - Min., Avg., Max. duration of inundation
- Results will be in Phase II Report



R.L. Harris Dam Relicensing
FERC No. 2628

HAT 1 & 5 Meetings
June 4, 2020

HARRIS DAM
RELICENSING

Operating Curve Change Feasibility Analysis

Phase II Lake Recreation Structure Usability at Winter Pool Alternatives

HARRIS DAM
RELICENSING

Phone Etiquette

- ❑Be patient with any technology issues
- ❑Follow the facilitator's instructions
- ❑Phones will be muted during presentations
- ❑Follow along with PDF of presentations
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- ❑Facilitator will ask for participant questions following each section of the presentation

HARRIS DAM
RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Objectives Described in the Study Plan

- Evaluate "…the number of private docks usable during the current winter drawdown and the lowest possible elevation that public boat ramps can be used."
- Private docks defined as boathouses, floats, piers, wet slips, and boardwalks
- Will "…compare the number of access points (both private docks and public boat ramps) available at each 1-foot increment change…"

Methods

- LiDAR used to measure elevation (785, 786, 787, 788, 789 ft msl contours)
- Elevation data used to calculate depth at point
- Depth for points beyond the 785 ft msl contour will be estimated by slope analysis

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Boathouses

- Point moved to the back of each of these structures
- Structure considered usable with 2 ft of water at the back edge

HARRIS DAM
RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Floats

- Point moved to the back of each of these structures
- Structure considered usable with 2 ft of water at the back edge

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Piers

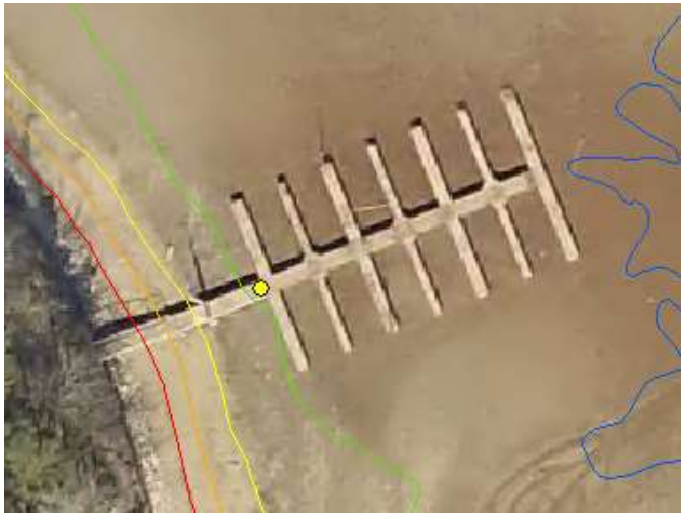
- Classified into 3 subcategories:
  - Platform (*bottom left*):
    - Piers with a square-shaped platform on the end
    - Point moved to back edge of the platform
    - Analyzed similarly to floats
  - Mooring (*bottom right*):
    - Straight piers > 30 ft
    - Point moved 30 ft back from front edge
  - Fishing (*right*):
    - Straight piers ≤ 30 ft
    - Point moved halfway back from the front edge
- Depth of 2 ft to be usable

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Wet Slips

- Some oriented parallel to the bank (*bottom left*) and some perpendicular (*bottom right*)
- The back edge is always the outside edge facing the bank
- Wet slips with multiple slips (*right*) will be considered usable when all slips are usable
- Depth of 2 ft to be usable



HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Boardwalks

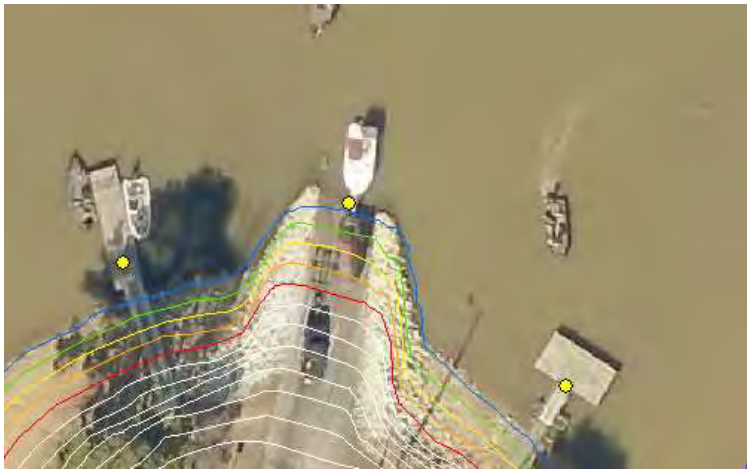
- Point moved to front of structure
- Objective is aesthetics
- Depth of 1 ft at point

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Public Boat Ramps

- ADCNR typically uses the following criteria for public ramps at low pool:
  - 15% grade at bottom portion of ramp
  - Depth of 4.5 ft at the end of the ramp
  - Able to launch up to 26 ft boat at low pool

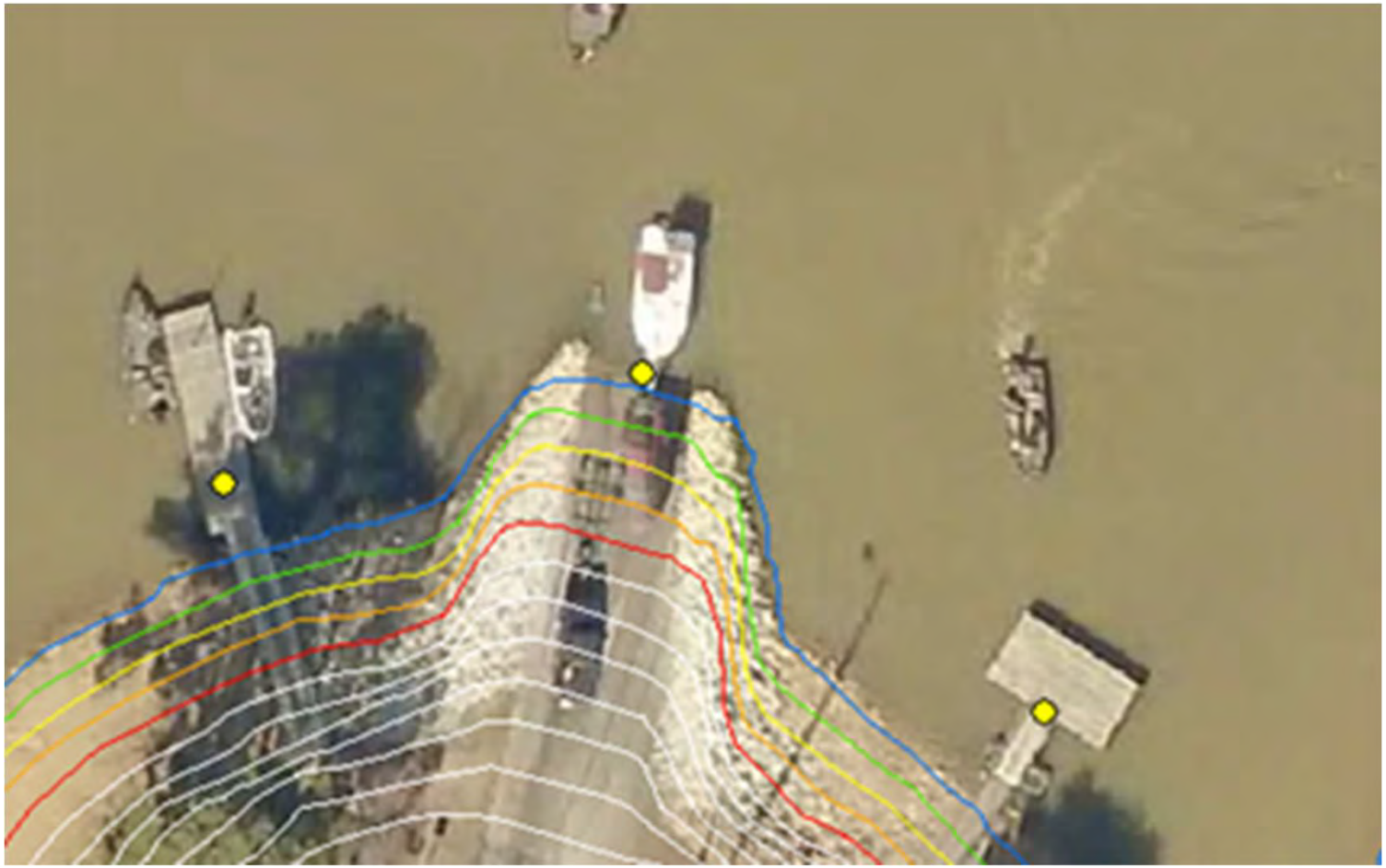


HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Public Boat Ramps

- Highway 48 Bridge:
  - Built using ADCNR standards
  - Usable at 785 ft msl



HARRIS DAM
RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Public Boat Ramps

- Lee's Bridge:
  - Bottom of ramp is ~785.5 ft msl
  - Use a slope analysis to determine the grade
  - Possibly usable ~790.0 ft msl

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Field Observations

- No imagery (*left*):
  - Imagery predates structures
  - ~10.0% of structures
- Not visible (right):
  - Structure obscured by foliage or shadow
  - ~2.5% of structures

HARRIS DAM
RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Presentation of Data: All Structures

The number and percentage of all usable structures at each winter pool alternative

Winter Pool Elevation (feet msl)	Number of Usable Structures	Percent Usable Structures
785		
786		
787		
788		
789		
>789		

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Presentation of Data: By Structure

The number and percentage of usable structures by type at each winter pool alternative

Winter Pool Elevation (feet msl)	Number of Usable Structures	Percent Usable Structures
Boardwalks		
785		
786		
787		
788		
789		
>789		
Boathouses		
785		
786		
787		
788		
789		
>789		
Floats		
785		
786		
787		
788		
789		
>789		

HARRIS DAM RELICENSING

Questions?

APC Harris Relicensing

From: Anderegg, Angela Segars
Sent: Wednesday, June 3, 2020 2:48 PM
To: 'Keith Gauldin'
Cc: APC Harris Relicensing
Subject: FW: Skyline WMA recreation use data
Attachments: ALABAMA MAN-DAY & GAME HARVEST EST w Permits.docx; ALABAMA MAN-DAY & GAME HARVEST EST.docx; SKYLINE HUNT DATA FOR FERC.xlsx

Hi Keith,

We're putting together the draft Recreation Evaluation Study Report for Harris relicensing. Do you have data yet for the 2019-2020 hunting season for Skyline that you could send our way? Also, we were wondering if you have any thoughts on use at Skyline in 2020 (given COVID-19) and any projections on future use at Skyline and/or hunting in general.

Let me know if you have any questions or would like to discuss.

Thanks!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Thursday, August 22, 2019 8:18 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: RE: Skyline WMA recreation use data

Good morning Andrea,
We have a couple of methods that we use, recently, we've implemented a self-service check in box that will improve our estimates. Please review the attached documents and let me know if you have any questions.
Regards,
keith

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Thursday, August 15, 2019 3:32 PM
To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Subject: RE: Skyline WMA recreation use data

Hi Keith,

A couple questions. How are man-days hunted and harvest estimated? And how is man-day defined?

Thanks!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Monday, August 12, 2019 9:36 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: RE: Skyline WMA recreation use data

Good morning Angie,
Attached is the requested information, please let me know if you have any questions.
Regards,
Keith

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Thursday, August 8, 2019 12:22 PM
To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Subject: Skyline WMA recreation use data

Hi Keith,

As you are aware, we are in the process of relicensing the Harris Hydroelectric Project with the Federal Energy Regulatory Commission. As part of the process, Alabama Power is required to obtain information on recreation use within the Project Boundary. Could you please provide information on recreation use at Skyline for the past several years? Specifically, we are looking for numbers of deer and turkey hunters.

Also, I saw online that Frank Allen is the point of contact for obtaining permits at Skyline. Should he be added to our stakeholder list for relicensing? If so, would you mind sending me his email address?

Please let me know if you have any questions or would like to discuss any of the details.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

MAN-DAYS HUNTED AND HARVEST ESTIMATES USED IN ALABAMA HUNTING SUMMARIES
By: Steve Bryant, WMA Game Harvest Project Leader

Questions occasionally arise requesting how information for the Alabama Statewide Game Harvest Report or the Alabama WMA Game Harvest Report are derived. These numbers are deduced in a variety of ways.

Both reports are attempting to measure the parameters of hunting activity commonly called pressure and the number of animals harvested. Hunting pressure is measured in man-days, any hunting activity for any length of time is considered a man-day. For animals with a bag limit of one per day it is possible to limit out within minutes of initiating a hunt, this is a rare occurrence. Hunting activity typically coincides with expected peak game movement times or other parameters which would improve the odds of success for a hunter. These times are typically early morning and late afternoon. Observation for decades has confirmed that hunting activity follows patterns. Deer, Turkey, Waterfowl are normally hunted sunrise to mid-morning, another peak period occurs in the afternoon from mid-afternoon to sundown. If you hunt both periods it is still considered one man-day. Small game hunting is usually a bit more leisurely with hunting early morning around 7:00AM to noon, and a second period mid-afternoon to sundown. Any variation of these time frames is considered a man-day of pressure.

For the Statewide Game Harvest Survey, a specified number (the sample) of license buyers are randomly selected and contacted after the hunting season to ask them questions regarding their hunting activities and harvest. These numbers are then expanded to the total number of licenses sold to arrive at estimates for total man-days used for pursuing a given species and the total harvest for that species.

The WMA Harvest Report is not as statistically oriented. It relies primarily on information gathered by the employees on a WMA at a check station, making vehicle counts during hunting time, and during their other routine work activities to make incidental observations to collect raw data with which to make a season estimate. Using incidental observation is particularly true for small game species that have long open seasons and are widely dispersed such as rabbit, squirrel, raccoon, pig, and other species that are highly adaptive and not dependent on a restricted habitat. For these species employees should make notes on activity observed and if possible, talk to the hunters to get the numbers on days hunted and their success rate. In many cases all that is needed is to observe where a vehicle is parked to know what they are hunting. A vehicle parked adjoining mature hardwoods if a deer hunt is not in progress likely indicates a squirrel hunter. In some cases, the employee would look in the windows of a vehicle and get other clues such as gun case, bow case, ammunition etc. to arrive at a conclusion on what species is being hunted. In some instances, employees talk with hunters when they are not hunting to ask how many days they hunted this year and about their harvest. This information is provided to the WMA biologist who will assess the information and make the man-day and harvest estimate.

For species that are found in a relatively confined area such as waterfowl or dove. The local WMA biologist and their staff can check these locations to interview hunters and look at the actual game taken. For dove it is relatively easy because they are only hunted extensively during the beginning of the season, primarily during the early weeks of September. The data collector will ride around the field count the number of vehicles then set up at an exit point. As each vehicle exits information is collected on number of hunters in vehicle and the harvest. That information is expanded to the number of vehicles that did not pass through the exit point where data is being collected. In this situation you can get very specific regarding the harvest and count hatching year dove and adult dove.

Data collection from waterfowl hunters is the most comprehensive of all. It is a long season, 60 days. However, the hunters can be easily accessed by going to the locations where they are concentrated, boat ramps, here data is collected on number of hours hunted and harvest by species, mallard, gadwall, etc. These check points are operated during the peak hunting times, primarily weekends, morning, and evening. A significant amount of data is collected over the course of the season and is expanded to cover the days when data was not collected but possibly some vehicle counts were made. In the final analysis you will have a good estimate of the average number of hours of a hunt, average number of birds taken per hunt, hours/duck, and the species composition for the season. This information is reported to the U S Fish & Wildlife Service and is incorporated in the discussions for the setting of the following season along with many other factors.

Deer hunter man-days and harvest was historically easy to collect and very accurate. This was during the period when daily permits were issued for each hunt day and the hunters felt compelled to bring their harvest by a check station operated by conservation personnel to provide biological data from each deer harvested. This would include gender, age, antler points, antler measurements, and general body condition. Data from that period is very accurate. However, because deer hunt dates are set up almost a full year in advance of when the hunt happens environmental conditions can drastically affect participation and therefore harvest. This resulted in many unproductive days operating check stations. Slowly during the 21st century many if not all of Alabama's WMAs shifted to the season map permit. This had an advantage for both the hunter and the WMA staff, primarily being everyone did not have to get up at 3:00AM to issue and receive the daily permit. However, an unexpected result happened when the wildlife section shifted to the map permit. The hunters interpreted this as deer managers not being interested in biological data from deer that was collected at the former check stations under the daily permit system. Even though the check stations were being operated and regulations state all deer harvested must be submitted at a check station for biological data collection, the deer being turned in declined significantly. This had led to another attempt by the wildlife section to improve data collection for all species and will be discussed later in this paper. In order to gain insight into deer hunting man-days under the season map permit era employees make vehicle counts of hunters on the area on the way to operate the check stations when a deer gun hunt is in progress. These vehicle counts are used to estimate hunting pressure. The procedure and computations used were developed by Chris Cook, Alabama Deer Project Leader. Archery deer hunting pressure is obtained by the incidental observation method and harvest is provided primarily by the hunters. Information stations are provided at key access points where archery hunters can record their harvest data. Small game hunters can also utilize these information stations, but their cooperation has traditionally not been proactive. Fortunately, or Unfortunately depending on your view point the gun deer hunters have provided some partial data at these locations also. From the deer managers point of view yes, the hunter provided some information, we know a deer was harvested, but we did not get all the biological information we need such as a jawbone to determine age, so that the age structure of the female and male segments of the population can be assessed.

Turkey hunting man-days and harvest has always been by incidental observation and the hunter using the information stations to record their harvest. In general turkey hunters are more cooperative about providing harvest information. Another method that is providing information to biologist is Facebook. This can provide insight into both data reported at the WMA and what is not reported.

Game harvest and hunting pressure estimates is both an art and science and depends on the diligence of both the hunters utilizing an area and the employees who work there. Negligence on anyone's part results in lost data and diminished opportunity to better manage the species which we all enjoy.

A new era is being implemented by the wildlife section that has the potential to benefit greatly the species we manage and the hunters who enjoy them. The Daily Permit System will be mandatory for everyone hunting any species in Wildlife Section District II during the 2019-2020 season and beyond. Under this system Daily Permits are provided at many convenient access points to all D-2 WMA's. Hunters are required to get a permit, complete an entry section, tear off that part of it and deposit in a lockbox when they enter the WMA and report on the remaining section the results of their hunt for the day also deposited in the lockbox. There will be self help instructions on collection of the biological data if the check stations are closed. Check stations will still be operated on peak use days, but we do expect to gain a better understanding of hunting activity and harvest for all species using the Daily Permits because theoretically we should get 100% data. Of course, no one in the wildlife section is naive enough to believe we will get perfect cooperation, but we do expect to have a baseline of data better than ever before. If further explanation is needed contact me at Steve.Bryant@dcnr.alabama.gov or (256) 435-5422

Attachments:

2019-20 Draft Deer/Small Game/Turkey Daily Permit

2019-20 Draft Waterfowl / Deer/Small Game Daily Permit

CHECK IN

SPECIES HUNTED (Circle as many as apply)

Deer	Woodcock	Waterfowl	Hog
Turkey	Gallinule	Squirrel	OTHER:
Dove	Rail	Rabbit	_____
Quail	Snipe	Raccoon	_____

Hunt Date: _____ **Telephone #**_____

Print Name:_____

County of Residence:_____ **State of Residence:**_____

CHECK OUT

WILDLIFE MANAGEMENT AREA DAILY PERMIT

#00001

Check out portion **must be carried by each user** while on the WMA. Check out portion **MUST** be completed and put in permit box at the conclusion of the holder's activity within WMA.

Print Name: _____

Hunt (TIME IN):_____ **(TIME OUT):**_____

Telephone #_____

FIRST TIME TO HUNT A WMA? YES ☐ NO ☐

Report your deer or turkey harvest within 48 hours and record your Confirmation # on your harvest record.

GAME CHECK OUTDOOR ALABAMA

HELP STOP POACHING BY CALLING OPERATION GAMEWATCH (800) 272-4263

WILDLIFE RESTORATION

**Hunters must complete the hunt report on the back of this permit.*

WILDLIFE MANAGEMENT AREA DAILY PERMIT

#00001

Check in portion **MUST** be completed and put in permit box **BEFORE** engaging in any activity on the WMA.

WMA DAILY PERMIT • HUNT REPORT

Check out portion must be carried by each user while on the WMA. This hunt report **MUST** be completed and put in permit box at the conclusion of the holder's activity within the WMA.

DEER HARVESTED (Circle): **ANTLERED / ANTLERLESS**
Male or Female

Chest Girth _____ # of Points _____ Inside Spread ____
Main Beam Length Left ____ Main Beam Length Right ____
Beam Cir. (above burr) Left ____ Beam Cir. Right ____

Method (Circle): Gun Primitive Weapon Archery

SPECIES HUNTED (Circle as many as apply)

Deer	Woodcock	Waterfowl	Hog
Turkey	Gallinule	Squirrel	OTHER:
Dove	Rail	Rabbit	_____
Quail	Snipe	Raccoon	_____

NUMBER HARVESTED

(Enter 0 if you hunted a species and none were bagged)

DEER _____	WOODCOCK _____	RACCOON _____
SQUIRRELS _____	GALLINULE _____	HOGS _____
RABBITS _____	RAIL _____	OPOSSUM _____
DOVES _____	SNIPE _____	
QUAIL _____	WATERFOWL _____	

TURKEY HARVESTED: Y or N
Spur Length: **R** _____ **L** _____ Beard Length _____
Other Species/Comments: _____

Hunters: Complete information on both sides of check out portion of the permit. Failure to comply with WMA regulations is a Class C Misdemeanor and subject to fines up to $500 for first offense.

CHECK IN

WMA DAILY PERMIT

Failure to comply with WMA regulations is a Class 3 misdemeanor and subject to fines up to $500 for first offense.

#00002

Hunt Date: _____ **Telephone #**_____

Print Name:_____

County of Residence:_____ **State of Residence:**_____

CHECK OUT

WILDLIFE MANAGEMENT AREA DAILY PERMIT

#00002

Check out portion **must be carried by each user** while on the WMA. Check out portion **MUST** be completed and put in permit box at the conclusion of the holder's activity within WMA.

Print Name: _____

Hunt (TIME IN):_____ **(TIME OUT):**_____

Telephone #_____

FIRST TIME TO HUNT A WMA? YES ☐ NO ☐

SPECIES HUNTED (Circle as many as apply)

Deer	Woodcock	Waterfowl	Hog
Turkey	Gallinule	Squirrel	OTHER:
Dove	Rail	Rabbit	_____
Quail	Snipe	Raccoon	_____

Report your deer or turkey harvest within 48 hours and record your Confirmation # on your harvest record.

***Hunters must complete the hunt report on the back of this permit.**

HELP STOP POACHING BY CALLING
OPERATION GAMEWATCH (800) 272-4263

WILDLIFE MANAGEMENT AREA DAILY PERMIT

Check in portion **MUST** be completed and put in permit box **BEFORE** engaging in any activity on the WMA.

WMA DAILY PERMIT • HUNT REPORT

Check out portion must be carried by each user while on the WMA. This hunt report **MUST** be completed and put in permit box at the conclusion of the holder's activity within the WMA.

NUMBER HARVESTED

(Enter 0 if you hunted a species and none were bagged)

BLACK DUCK _____	SCAUP _____	GALLINULE _____
BUFFLEHEAD _____	SCOTER _____	RAIL _____
CANVASBACK _____	G.W TEAL _____	SNIPE _____
GADWALL _____	B.W. TEAL _____	WOODCOCK _____
GOLDENEYE _____	WIGEON _____	FOX SQUIRREL _____
H. MERGANSER _____	WOOD DUCK _____	GRAY SQUIRREL _____
MALLARD _____	CANADA GOOSE _____	RABBITS _____
MOTTLED _____	SNOW GOOSE _____	RACCOON _____
PINTAIL _____	WHITE-FRONTED GOOSE _____	OPOSSUM _____
REDHEAD _____	COOT _____	FOX _____
RINGNECK _____	DOVES _____	BOBCAT _____
RUDDY _____	QUAIL _____	HOGS _____
SHOVELER _____		

DEER HARVESTED (Circle): **ANTLERED / ANTLERLESS**
MALE or FEMALE

Chest Girth _____ # of Points _____ Inside Spread ____
Main Beam Length Left ____ Main Beam Length Right ____
Beam Cir. (above burr) Left ____ Beam Cir. Right ____

Method (Circle): Gun Primitive Weapon Archery

Hunters: Complete information on both sides of check out portion of the permit. Failure to comply with WMA regulations is a Class C Misdemeanor and subject to fines up to $500 for first offense.

MAN-DAYS HUNTED AND HARVEST ESTIMATES USED IN ALABAMA HUNTING SUMMARIES
By: Steve Bryant, WMA Game Harvest Project Leader

Questions occasionally arise requesting how information for the Alabama Statewide Game Harvest Report or the Alabama WMA Game Harvest Report are derived. These numbers are deduced in a variety of ways.

Both reports are attempting to measure the parameters of hunting activity commonly called pressure and the number of animals harvested. Hunting pressure is measured in man-days, any hunting activity for any length of time is considered a man-day. For animals with a bag limit of one per day it is possible to limit out within minutes of initiating a hunt, this is a rare occurrence. Hunting activity typically coincides with expected peak game movement times or other parameters which would improve the odds of success for a hunter. These times are typically early morning and late afternoon. Observation for decades has confirmed that hunting activity follows patterns. Deer, Turkey, Waterfowl are normally hunted sunrise to mid-morning, another peak period occurs in the afternoon from mid-afternoon to sundown. If you hunt both periods it is still considered one man-day. Small game hunting is usually a bit more leisurely with hunting early morning around 7:00AM to noon, and a second period mid-afternoon to sundown. Any variation of these time frames is considered a man-day of pressure.

For the Statewide Game Harvest Survey, a specified number (the sample) of license buyers are randomly selected and contacted after the hunting season to ask them questions regarding their hunting activities and harvest. These numbers are then expanded to the total number of licenses sold to arrive at estimates for total man-days used for pursuing a given species and the total harvest for that species.

The WMA Harvest Report is not as statistically oriented. It relies primarily on information gathered by the employees on a WMA at a check station, making vehicle counts during hunting time, and during their other routine work activities to make incidental observations to collect raw data with which to make a season estimate. Using incidental observation is particularly true for small game species that have long open seasons and are widely dispersed such as rabbit, squirrel, raccoon, pig, and other species that are highly adaptive and not dependent on a restricted habitat. For these species employees should make notes on activity observed and if possible, talk to the hunters to get the numbers on days hunted and their success rate. In many cases all that is needed is to observe where a vehicle is parked to know what they are hunting. A vehicle parked adjoining mature hardwoods if a deer hunt is not in progress likely indicates a squirrel hunter. In some cases, the employee would look in the windows of a vehicle and get other clues such as gun case, bow case, ammunition etc. to arrive at a conclusion on what species is being hunted. In some instances, employees talk with hunters when they are not hunting to ask how many days they hunted this year and about their harvest. This information is provided to the WMA biologist who will assess the information and make the man-day and harvest estimate.

For species that are found in a relatively confined area such as waterfowl or dove. The local WMA biologist and their staff can check these locations to interview hunters and look at the actual game taken. For dove it is relatively easy because they are only hunted extensively during the beginning of the season, primarily during the early weeks of September. The data collector will ride around the field count the number of vehicles then set up at an exit point. As each vehicle exits information is collected on number of hunters in vehicle and the harvest. That information is expanded to the number of vehicles that did not pass through the exit point where data is being collected. In this situation you can get very specific regarding the harvest and count hatching year dove and adult dove.

Data collection from waterfowl hunters is the most comprehensive of all. It is a long season, 60 days. However, the hunters can be easily accessed by going to the locations where they are concentrated, boat ramps, here data is collected on number of hours hunted and harvest by species, mallard, gadwall, etc. These check points are operated during the peak hunting times, primarily weekends, morning, and evening. A significant amount of data is collected over the course of the season and is expanded to cover the days when data was not collected but possibly some vehicle counts were made. In the final analysis you will have a good estimate of the average number of hours of a hunt, average number of birds taken per hunt, hours/duck, and the species composition for the season. This information is reported to the U S Fish & Wildlife Service and is incorporated in the discussions for the setting of the following season along with many other factors.

Deer hunter man-days and harvest was historically easy to collect and very accurate. This was during the period when daily permits were issued for each hunt day and the hunters felt compelled to bring their harvest by a check station operated by conservation personnel to provide biological data from each deer harvested. This would include gender, age, antler points, antler measurements, and general body condition. Data from that period is very accurate. However, because deer hunt dates are set up almost a full year in advance of when the hunt happens environmental conditions can drastically affect participation and therefore harvest. This resulted in many unproductive days operating check stations. Slowly during the 21st century many if not all of Alabama's WMAs shifted to the season map permit. This had an advantage for both the hunter and the WMA staff, primarily being everyone did not have to get up at 3:00AM to issue and receive the daily permit. However, an unexpected result happened when the wildlife section shifted to the map permit. The hunters interpreted this as deer managers not being interested in biological data from deer that was collected at the former check stations under the daily permit system. Even though the check stations were being operated and regulations state all deer harvested must be submitted at a check station for biological data collection, the deer being turned in declined significantly. This had led to another attempt by the wildlife section to improve data collection for all species and will be discussed later in this paper. In order to gain insight into deer hunting man-days under the season map permit era employees make vehicle counts of hunters on the area on the way to operate the check stations when a deer gun hunt is in progress. These vehicle counts are used to estimate hunting pressure. The procedure and computations used were developed by Chris Cook, Alabama Deer Project Leader. Archery deer hunting pressure is obtained by the incidental observation method and harvest is provided primarily by the hunters. Information stations are provided at key access points where archery hunters can record their harvest data. Small game hunters can also utilize these information stations, but their cooperation has traditionally not been proactive. Fortunately, or Unfortunately depending on your view point the gun deer hunters have provided some partial data at these locations also. From the deer managers point of view yes, the hunter provided some information, we know a deer was harvested, but we did not get all the biological information we need such as a jawbone to determine age, so that the age structure of the female and male segments of the population can be assessed.

Turkey hunting man-days and harvest has always been by incidental observation and the hunter using the information stations to record their harvest. In general turkey hunters are more cooperative about providing harvest information. Another method that is providing information to biologist is Facebook. This can provide insight into both data reported at the WMA and what is not reported.

Game harvest and hunting pressure estimates is both an art and science and depends on the diligence of both the hunters utilizing an area and the employees who work there. Negligence on anyone's part results in lost data and diminished opportunity to better manage the species which we all enjoy.

A new era is being implemented by the wildlife section that has the potential to benefit greatly the species we manage and the hunters who enjoy them. The Daily Permit System will be mandatory for everyone hunting any species in Wildlife Section District II during the 2019-2020 season and beyond. Under this system Daily Permits are provided at many convenient access points to all D-2 WMA's. Hunters are required to get a permit, complete an entry section, tear off that part of it and deposit in a lockbox when they enter the WMA and report on the remaining section the results of their hunt for the day also deposited in the lockbox. There will be self help instructions on collection of the biological data if the check stations are closed. Check stations will still be operated on peak use days, but we do expect to gain a better understanding of hunting activity and harvest for all species using the Daily Permits because theoretically we should get 100% data. Of course, no one in the wildlife section is naive enough to believe we will get perfect cooperation, but we do expect to have a baseline of data better than ever before. If further explanation is needed contact me at Steve.Bryant@dcnr.alabama.gov or (256) 435-5422

CHECK IN

SPECIES HUNTED (Circle as many as apply)

Deer	Woodcock	Waterfowl	Hog
Turkey	Gallinule	Squirrel	OTHER:
Dove	Rail	Rabbit	_____
Quail	Snipe	Raccoon	_____

Hunt Date: _____ **Telephone #**_____

Print Name:_____

County of Residence:_____ **State of Residence:**_____

CHECK OUT

WILDLIFE MANAGEMENT AREA DAILY PERMIT

#00001

Check out portion **must be carried by each user** while on the WMA. Check out portion **MUST** be completed and put in permit box at the conclusion of the holder's activity within WMA.

Print Name: _____

Hunt (TIME IN):_____ **(TIME OUT):**_____

Telephone #_____

FIRST TIME TO HUNT A WMA? YES ☐ NO ☐

Report your deer or turkey harvest within 48 hours and record your Confirmation # on your harvest record.

GAME CHECK OUTDOOR ALABAMA

HELP STOP POACHING BY CALLING OPERATION GAMEWATCH (800) 272-4263

WILDLIFE RESTORATION

**Hunters must complete the hunt report on the back of this permit.*

WILDLIFE MANAGEMENT AREA DAILY PERMIT

#00001

Check in portion **MUST** be completed and put in permit box **BEFORE** engaging in any activity on the WMA.

WMA DAILY PERMIT • HUNT REPORT

Check out portion must be carried by each user while on the WMA. This hunt report **MUST** be completed and put in permit box at the conclusion of the holder's activity within the WMA.

DEER HARVESTED (Circle): **ANTLERED / ANTLERLESS**
Male or Female

Chest Girth _____ # of Points _____ Inside Spread ____
Main Beam Length Left ____ Main Beam Length Right ____
Beam Cir. (above burr) Left ____ Beam Cir. Right ____

Method (Circle): Gun Primitive Weapon Archery

SPECIES HUNTED (Circle as many as apply)

Deer	Woodcock	Waterfowl	Hog
Turkey	Gallinule	Squirrel	OTHER:
Dove	Rail	Rabbit	_____
Quail	Snipe	Raccoon	_____

NUMBER HARVESTED

(Enter 0 if you hunted a species and none were bagged)

DEER _____	WOODCOCK _____	RACCOON _____
SQUIRRELS _____	GALLINULE _____	HOGS _____
RABBITS _____	RAIL _____	OPOSSUM _____
DOVES _____	SNIPE _____	
QUAIL _____	WATERFOWL _____	

TURKEY HARVESTED: Y or N
Spur Length: **R** _____ **L** _____ Beard Length _____
Other Species/Comments: _____

Hunters: Complete information on both sides of check out portion of the permit. Failure to comply with WMA regulations is a Class C Misdemeanor and subject to fines up to $500 for first offense.

CHECK IN

WMA DAILY PERMIT

Failure to comply with WMA regulations is a Class 3 misdemeanor and subject to fines up to $500 for first offense.

#00002

Hunt Date: _____ **Telephone #**_____

Print Name:_____

County of Residence:_____ **State of Residence:**_____

CHECK OUT

WILDLIFE MANAGEMENT AREA DAILY PERMIT

#00002

Check out portion **must be carried by each user** while on the WMA. Check out portion **MUST** be completed and put in permit box at the conclusion of the holder's activity within WMA.

Print Name: _____

Hunt (TIME IN):_____ **(TIME OUT):**_____

Telephone #_____

FIRST TIME TO HUNT A WMA? YES ☐ NO ☐

SPECIES HUNTED (Circle as many as apply)

Deer	Woodcock	Waterfowl	Hog
Turkey	Gallinule	Squirrel	OTHER:
Dove	Rail	Rabbit	_____
Quail	Snipe	Raccoon	_____

Report your deer or turkey harvest within 48 hours and record your Confirmation # on your harvest record.

***Hunters must complete the hunt report on the back of this permit.**

HELP STOP POACHING BY CALLING
OPERATION GAMEWATCH (800) 272-4263

WILDLIFE MANAGEMENT AREA DAILY PERMIT

Check in portion **MUST** be completed and put in permit box **BEFORE** engaging in any activity on the WMA.

WMA DAILY PERMIT • HUNT REPORT

Check out portion must be carried by each user while on the WMA. This hunt report **MUST** be completed and put in permit box at the conclusion of the holder's activity within the WMA.

NUMBER HARVESTED

(Enter 0 if you hunted a species and none were bagged)

BLACK DUCK _____	SCAUP _____	GALLINULE _____
BUFFLEHEAD _____	SCOTER _____	RAIL _____
CANVASBACK _____	G.W TEAL _____	SNIPE _____
GADWALL _____	B.W. TEAL _____	WOODCOCK _____
GOLDENEYE _____	WIGEON _____	FOX SQUIRREL _____
H. MERGANSER _____	WOOD DUCK _____	GRAY SQUIRREL _____
MALLARD _____	CANADA GOOSE _____	RABBITS _____
MOTTLED _____	SNOW GOOSE _____	RACCOON _____
PINTAIL _____	WHITE-FRONTED GOOSE _____	OPOSSUM _____
REDHEAD _____	COOT _____	FOX _____
RINGNECK _____	DOVES _____	BOBCAT _____
RUDDY _____	QUAIL _____	HOGS _____
SHOVELER _____		

DEER HARVESTED (Circle): **ANTLERED / ANTLERLESS**
MALE or FEMALE

Chest Girth _____ # of Points _____ Inside Spread ____
Main Beam Length Left ____ Main Beam Length Right ____
Beam Cir. (above burr) Left ____ Beam Cir. Right ____

Method (Circle): Gun Primitive Weapon Archery

Hunters: Complete information on both sides of check out portion of the permit. Failure to comply with WMA regulations is a Class C Misdemeanor and subject to fines up to $500 for first offense.

Table I. Deer Harvest on Alabama's Wildlife Management Areas, 2018-19 Season.

AREA	HUNTING SEASON	GUN STALK HUNTS		DOG HUNTS		ARCHERY		PRIMITIVE WEAPONS		TOTAL	
		HARVEST	MAN-DAYS	HARVEST	MAN-DAYS	HARVEST	MAN-DAYS	HARVEST	MAN-DAYS	HARVEST	MAN-DAYS
James D. Martin-Skyline WMA	2012-13	300	4319			47	1140	35	283	382	5742
	2013-14	352	7305			75	1505	4	145	431	8955
	2014-15	338	6316			47	1300	24	535	409	8151
	2015-16	239	5625			33	1070	26	680	298	7375
	2016-17	201	4750			34	1150	39	820	274	6720
	2017-18	187	4820			23	690	19	600	229	6110
	2018-19	198	6943			27	805	0	255	225	8003
Forever Wild Land Trust-Alabama Power PDHA	2014-15	7	73							7	73
	2015-16	8	75							8	75
	2016-17	2	68							2	68
	2017-18	5	92							5	92
	2018-19	3	50							3	50

JAMES D. MARTIN - SKYLINE WILDLIFE MANAGEMENT AREA
HUNTING DATA
2016-17 SEASON THROUGH 2018-19 SEASON

2016-2017 SEASON

SPECIES	ESTIMATED MAN-DAYS HUNTED	ESTIMATED HARVEST	KNOWN HARVEST
DEER	6270	274	
TURKEY	1865	65	51
SQUIRREL	600	700	
QUAIL	30	16	
RABBIT	550	825	
DOVE	120	130	
WATERFOWL	20	15	
RACCOON	200	10	
OPOSSUM	0	0	
WOODCOCK	18	6	
SNIPE	0	0	
FOX	0	0	
PIG	0	0	
TRAPPING	TN 360	31	
	9673		

2017-2018 SEASON

SPECIES	ESTIMATED MAN-DAYS HUNTED	ESTIMATED HARVEST	KNOWN HARVEST
DEER	6110	229	
TURKEY	1710	60	47
SQUIRREL	600	700	
QUAIL	30	16	
RABBIT	520	745	
DOVE	95	97	
WATERFOWL	0	0	
RACCOON	200	10	
OPOSSUM	0	0	
WOODCOCK	15	4	
SNIPE	0	0	
FOX	0	0	
PIG	0	0	
TRAPPING	0	0	
	9280		

2018-2019 SEASON

SPECIES	ESTIMATED MAN-DAYS HUNTED	ESTIMATED HARVEST	KNOWN HARVEST
DEER	8003	225	
TURKEY	700	75	63
SQUIRREL	580	600	
QUAIL	30	15	
RABBIT	500	420	
DOVE	75	80	
WATERFOWL	30	30	
RACCOON	15	15	
OPOSSUM	0	0	
WOODCOCK	0	0	
SNIPE	0	0	
FOX	0	0	
PIG	0	0	
TRAPPING	0	0	
	9933		

APC Harris Relicensing

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Thursday, June 4, 2020 9:21 AM
To: Anderegg, Angela Segars
Cc: APC Harris Relicensing
Subject: Re: Skyline WMA recreation use data

Hello Angie,
I've made the request to my wma manager for the skyline data and I'll forward to you when they come in. Not sure if I responded previously. Thanks.
kg

Get Outlook for iOS [aka.ms]

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Wednesday, June 3, 2020 2:48:28 PM
To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Cc: APC Harris Relicensing <g2apchr@southernco.com>
Subject: FW: Skyline WMA recreation use data

Hi Keith,

We're putting together the draft Recreation Evaluation Study Report for Harris relicensing. Do you have data yet for the 2019-2020 hunting season for Skyline that you could send our way? Also, we were wondering if you have any thoughts on use at Skyline in 2020 (given COVID-19) and any projections on future use at Skyline and/or hunting in general.

Let me know if you have any questions or would like to discuss.

Thanks!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Thursday, August 22, 2019 8:18 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: RE: Skyline WMA recreation use data

Good morning Andrea,
We have a couple of methods that we use, recently, we've implemented a self-service check in box that will improve our estimates. Please review the attached documents and let me know if you have any questions.
Regards,

keith

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Thursday, August 15, 2019 3:32 PM
To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Subject: RE: Skyline WMA recreation use data

Hi Keith,

A couple questions. How are man-days hunted and harvest estimated? And how is man-day defined?

Thanks!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Monday, August 12, 2019 9:36 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: RE: Skyline WMA recreation use data

Good morning Angie,
Attached is the requested information, please let me know if you have any questions.
Regards,
Keith

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Thursday, August 8, 2019 12:22 PM
To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Subject: Skyline WMA recreation use data

Hi Keith,

As you are aware, we are in the process of relicensing the Harris Hydroelectric Project with the Federal Energy Regulatory Commission. As part of the process, Alabama Power is required to obtain information on recreation use within the Project Boundary. Could you please provide information on recreation use at Skyline for the past several years? Specifically, we are looking for numbers of deer and turkey hunters.

Also, I saw online that Frank Allen is the point of contact for obtaining permits at Skyline. Should he be added to our stakeholder list for relicensing? If so, would you mind sending me his email address?

Please let me know if you have any questions or would like to discuss any of the details.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

FEDERAL ENERGY REGULATORY COMMISSION
MEMORANDUM

DATE: June 9, 2020

FROM: Sarah Salazar, Environmental Biologist
Division of Hydropower Licensing
Office of Energy Projects

TO: Public Files for the R.L. Harris Hydroelectric Project
(FERC Project No. 2628-065)

SUBJECT: Email communication with the Alabama Rivers Alliance regarding the comment period for the Initial Study Report for the R.L. Harris Hydroelectric Project.

On June 5, 2020, Jack West (Alabama Rivers Alliance) emailed Commission staff to inquire about the comment period for the Initial Study Report for the R.L. Harris Hydroelectric Project. Commission staff responded on June 8, 2020.

A copy of the email correspondence is attached.

Sarah Salazar

From: Sarah Salazar
Sent: Monday, June 08, 2020 12:52 PM
To: Jack West
Cc: Allan Creamer; Rachel McNamara
Subject: RE: Question Re: Harris Relicensing

Good afternoon Jack,

Yes, we strongly recommend filing any comments you have on the Initial Study Report, including the draft study reports, by June 11, 2020.

To the extent that you think that any of the approved study plans and schedules should be modified to address your concerns, we recommend that you file, by June 11, 2020, a request for study plan modification(s) using the criteria in the Commission's regulations at 18 C.F.R. § 5.15(d) (2019). The approved study plans can be found in the applicant's Revised Study Plan that was filed on March 13, 2019. Updates to the study schedules, as required in the Commission's April 12, 2019 Study Plan Determination, were filed in an updated Revised Study Plan on May 13, 2019. If you would like to request any new studies, you would need to file, by June 11, 2020, such a request using the criteria in the Commission's regulations at 18 C.F.R. §5.9(b) and 5.15(e) (2019). I'm including excerpts of the cited regulations below.

Excerpt from 18 C.F.R. § 5.15

(d) *Criteria for modification of approved study*. Any proposal to modify an ongoing study . . . must be accompanied by a showing of good cause why the proposal should be approved, and must include, as appropriate to the facts of the case, a demonstration that:
  (1) Approved studies were not conducted as provided for in the approved study plan; or
  (2) The study was conducted under anomalous environmental conditions or that environmental conditions have changed in a material way.

(e) *Criteria for new study*. Any proposal for new information gathering or studies . . . must be accompanied by a showing of good cause why the proposal should be approved, and must include, as appropriate to the facts of the case, a statement explaining:
  (1) Any material changes in the law or regulations applicable to the information request;
  (2) Why the goals and objectives of any approved study could not be met with the approved study methodology;
  (3) Why the request was not made earlier;
  (4) Significant changes in the project proposal or that significant new information material to the study objectives has become available; and
  (5) Why the new study request satisfies the study criteria in § 5.9(b).

Excerpt from 18 C.F.R. § 5.9(b)

(b) *Content of study request*. Any information or study request must:
  (1) Describe the goals and objectives of each study proposal and the information to be obtained;
  (2) If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;
  (3) If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study;
  (4) Describe existing information concerning the subject of the study proposal, and the need for additional information;

(5) Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements;
(6) Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate filed season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and
(7) Describe considerations of level of effort and cost, as applicable, and why proposed alternative studies would not be sufficient to meet the stated information needs.

Thanks again for your inquiry. I hope this response answers your question. Please let me know if you have additional questions.

Note, I will be filing this email to our record for the project.

Sarah L. Salazar ✧ *Environmental Biologist* ✧ *Federal Energy Regulatory Commission* ✧ *888 First St, NE, Washington, DC 20426* ✧ *(202) 502-6863*

From: Jack West <jwest@alabamarivers.org>
Sent: Saturday, June 06, 2020 2:19 PM
To: Sarah Salazar <Sarah.Salazar@ferc.gov>
Cc: Allan Creamer <Allan.Creamer@ferc.gov>; Rachel McNamara <Rachel.McNamara@ferc.gov>
Subject: Re: Question Re: Harris Relicensing

Sarah,

No problem at all. Thanks for the response, and have a great weekend.

On Fri, Jun 5, 2020 at 4:54 PM Sarah Salazar <Sarah.Salazar@ferc.gov> wrote:

> Hi Jack,
>
> Thanks for your message and inquiry. Sorry for the delay in responding. I was actually off today, but I will get back to you first thing next week.
>
> Sarah L. Salazar ✧ *Environmental Biologist* ✧ *Federal Energy Regulatory Commission* ✧ *888 First St, NE, Washington, DC 20426* ✧ *(202) 502-6863*
>
>
> **From:** Jack West <jwest@alabamarivers.org>
> **Sent:** Friday, June 05, 2020 11:56 AM
> **To:** Sarah Salazar <Sarah.Salazar@ferc.gov>; Allan Creamer <Allan.Creamer@ferc.gov>; Rachel McNamara <Rachel.McNamara@ferc.gov>
> **Subject:** Question Re: Harris Relicensing

Hi Sarah, Allan, and Rachel:

Thank you for encouraging stakeholder input during the Harris relicensing. I'm writing with a procedural question regarding the timing of stakeholder requests for additional modeling of downstream release alternatives.

During the ISR meeting in April and during some HAT meetings, stakeholders have been asked by Licensee to suggest any additional flow release alternatives we would like to see modeled as soon as possible. We believe that modeling a wider variety of flows will strengthen the studies and inform future adaptive management, and we do plan to suggest other downstream release alternatives to model.

However, without at least draft reports of the Aquatic Resources Study and the Aquatic Habitat study, we feel it is premature to ask stakeholders to put forth all alternatives. Flows, thermal impacts on aquatic resources, water quality, and aquatic habitat reports are all deeply interrelated. Flows and the thermal regime, in particular, should be considered together, but analysis of the impacts of temperature on aquatic life is still forthcoming.

Licensee itself acknowledges that the results from the Aquatic Resources Study are needed to design the fourth flow scenario it plans to model (an alternative Green Plan). Those same results will help stakeholders, as well, to make the most informed flow recommendations for study.

We understand that the modeling of additional flows takes time and effort, and we have no desire to unnecessarily delay, but to be of the most value, requests for additional flow modeling should be informed by the results of the fisheries studies.

Which brings me to the question: Do absolutely all requests for modeling of additional flows need to be submitted by the comment period ending June 11, or will there be an opportunity for stakeholders to put forth additional release alternatives once the draft fisheries studies are available?

I can certainly include these thoughts in our comments to be filed next week. Again, my thanks for incorporating stakeholders in this process, and I look forward to continuing to participate in the relicensing.

I hope you're staying safe and well.

--

Jack West, Esq.

Policy and Advocacy Director

Alabama Rivers Alliance

2014 6th Ave N, Suite 200

Birmingham, AL 35203

205-322-6395

www.alabamarivers.org

Celebrating more than 20 years of protecting Alabama's 132,000 miles of rivers and streams!

--
Jack West, Esq.
Policy and Advocacy Director
Alabama Rivers Alliance
2014 6th Ave N, Suite 200
Birmingham, AL 35203
205-322-6395
www.alabamarivers.org

Celebrating more than 20 years of protecting Alabama's 132,000 miles of rivers and streams!

Document Content(s)

APC Harris Relicensing

From: Ken Wills <memontei@aol.com>
Sent: Wednesday, June 10, 2020 9:27 PM
To: APC Harris Relicensing
Subject: Support for Botanical Area Designation of Flat Rock Backcountry Within Harris Relicensing Project

Hello all,

On behalf of the Alabama Glade Conservation Coalition, I want to thank Alabama Power for all their cooperation in working with us to protect the special botanical resources in and around the backcountry granite outcrop habitat at Flat Rock Park. The initial results of the commissioned botanical surveys show that the pristine backcountry outcrops and surrounding backcountry habitats have rare species found in few other places within Alabama and are indeed worthy of the protection afforded by the proposed land use change from Recreation to Natural Undeveloped. In relation and as follow-up on a recent discussion in a HAT meeting, we highly endorse the idea of giving this area its on special Botanical Area designation in the land use plan for the Harris Relicensing Project.

Such a Botanical Area designation should have the same protections afforded lands under the Natural Undeveloped classification as well as additional protections tailored to protecting the special and sensitive botanical resources of this area. Botanical Area classification should emphasize protection of the area from motorized vehicle disturbance (for which Alabama Power has recently made great progress), removal of exotic species such as Chinese Privet (which volunteers from groups like the Glade Coalition could help with), and possibly the reintroduction of fire through controlled burns (which other conservation organizations could possibly help with). The botanists and others involved in the Alabama Glade Conservation Coalition would be happy to help draft specifications for a Botanical Area land use classification as well as a specific management plan for the backcountry area at Flat Rock Park.

Thanks again for all your cooperation in protecting the special backcountry granite outcrop and surrounding habitats at Flat Rock Park. Let us know how we can be of futher assistance in this process.

Thanks,
Kenneth Wills
Acting Coordinator
Alabama Glade Conservation Coalition
(205) 515-9412

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426
June 10, 2020

OFFICE OF ENERGY PROJECTS

Project No. 2628-065 – Alabama
R.L. Harris Hydroelectric Project
Alabama Power Company

VIA FERC Service

Ms. Angie Anderegg
Harris Relicensing Project Manager
Alabama Power Company
600 North 18th Street Birmingham,
AL 35203

Subject: Staff Comments on the Initial Study Report and Initial Study Report Meeting Summary for the R.L. Harris Hydroelectric Project

Dear Ms. Anderegg:

Staff have reviewed Alabama Power Company's (Alabama Power) Initial Study Report (ISR) and associated draft study reports for the R.L. Harris Hydroelectric Project (Harris Project) filed on April 10, 2020, attended the ISR Meeting held via teleconference on April 28, 2020, and reviewed the ISR Meeting Summary filed on May 12, 2020. Alabama Power filed its ISR two days earlier than the published deadline of April 12, 2020. However, staff is maintaining the original deadline posted in previously issued process plans, June 11, 2020, for filing: comments on the ISR and draft study reports; comments on the ISR Meeting summary; requests for modifications to the approved study plan; and proposals for new studies.

Any stakeholder requests for study plan modifications or new studies should follow the Commission's regulations at 18 C.F.R. § 5.9(b) and 5.15 (2019), which are attached for stakeholder convenience (Attachment B). A copy of the Commission's Integrated Licensing Process (ILP) schedule for the Harris Project pre-filing milestones is attached as a reminder (Attachment C).

Based on a review of the ISR, associated draft study reports, discussions at the ISR Meeting, and a review of the ISR Meeting Summary, staff provide comments and recommended updates on Alabama Power's filings in Attachment A. Unless otherwise noted, please address the comments in Attachment A in the Updated Study Report or the

preliminary licensing proposal and license application, as appropriate. Alabama Power's requests for variances to their approved schedules for the Water Quality Study, the Draft Recreation Evaluation Study Report, and the Cultural Resources Study[1] will be addressed after the close of the ISR comment period.

If you have questions please contact Sarah Salazar at (202) 502-6863, or at sarah.salazar@ferc.gov.

Sincerely,

Allan E. Creamer

for Stephen Bowler, Chief
South Branch
Division of Hydropower Licensing

Enclosures: Attachment A
Attachment B
Attachment C

[1] Alabama Power intends to submit its Clean Water Act section 401 Water Quality Certification application to the Alabama Department of Environmental Management in April 2021 instead of in 2020, as originally proposed. Alabama Power proposes to file its Draft Recreation Evaluation Study Report in August 2020 instead of June 2020 to allow time to complete two new recreation surveys, the Tallapoosa River Downstream Landowner Survey and the Tallapoosa River Recreation User Survey. Alabama Power also proposes to finalize the Area of Potential Effect (APE) for its Cultural Resources Study and file it with documentation of consultation in June 2020.

Attachment A

Staff comments on the Initial Study Report (ISR) and Initial Study Report Meeting Summary

Draft Operating Curve Change Feasibility Analysis (Phase 1) Study Report

1. Figure 5-3, on page 39 of the Draft Operating Curve Change Feasibility Analysis (Phase 1) Study Report, shows how changing the winter pool elevation from the current project operating curve to the +1, +2, +3, and +4-foot winter operating curves could affect reservoir elevations in Lake Harris throughout the year. Moreover, the figure documents the interaction between higher winter pool levels and low-inflow periods. During the period between 2006 and 2008, which encompasses two low-flow periods, the model showed that increasing the winter pool elevation can result in higher reservoir elevations during low-flow years, compared to the existing operating curve. However, Figure 5-3 shows that from about July 2007 through mid-February 2008, modeled reservoir levels for the +2 and +3-foot winter pool curve alternatives were lower than that of the other operating curve alternatives for the same operating period. Please explain what appears to be an anomaly in the modeling result in the final report.

Draft Downstream Release Alternatives (Phase 1) Study Report

2. During the ISR Meeting, Alabama Power requested that stakeholders provide downstream flow alternatives for evaluation in the models developed during Phase 1 of the Downstream Release Alternatives Study. Stakeholders expressed concerns about their ability to propose flow alternatives without having the draft reports for the Aquatic Resources and Downstream Aquatic Habitat Studies, which are scheduled to be available in July 2020 and June 2020, respectively. It is our understanding that during Phase 2 of this study, Alabama Power would run stakeholder-proposed flow alternatives that may be provided with ISR comments, as well as additional flow alternatives that stakeholders may propose after the results for the Aquatic Resources and Downstream Aquatic Habitat Studies are available. Please clarify your intent by July 11, 2020, as part of your response to stakeholder comments on the ISR.

3. According to the approved study plan, the goal of the Downstream Release Alternatives Study is to evaluate the effects of four downstream flow release alternatives on project resources. The four release alternatives are: (1) the Green Plan, or Alabama Power's current pulsing operation; (2) the Pre-Green Plan, or Alabama Power's historic peaking operation; (3) the Pre-Green Plan with a continuous baseflow of 150 cubic feet per second (cfs); and (4) a modified Green Plan. The Phase 1 Report, filed on April 10, 2020, presented complete results for Pre-Green Plan operation and Green Plan operation, partial results for the Pre-Green Plan with a 150-cfs baseflow, and no results for the modified Green-Plan alternative.

During the ISR Meeting, Alabama Power requested that stakeholders identify and propose downstream flow release alternatives so that the proposed alternative's effects on environmental resources can be assessed during Phase 2 of the study. To facilitate modelling of downstream flow release alternatives, we recommend that Alabama Power run base flows of 150 cfs, 350 cfs, 600 cfs, and 800 cfs through its model for each of the three release scenarios (i.e., the Pre-Green Plan, the Green Plan, and the modified Green Plan flow release approach). The low-end flow of 150 cfs was proposed by Alabama Power as equivalent to the daily volume of three 10-minute Green Plan pulses. This flow also is about 15 percent of the average annual flow at the United States Geological Survey's flow gage (#02414500) on the Tallapoosa River at Wadley, Alabama, and represents "poor" to "fair" habitat conditions.[1] We recommend 800 cfs as the upper end of the base flow modeling range because it represents "good" to "excellent" habitat,[2] and is nearly equivalent to the U.S. Fish and Wildlife Service's Aquatic Base Flow guideline for the Tallapoosa River at the Wadley gage.[3] The proposed base flows of 350 cfs and 600 cfs cover the range between 150 cfs and 800 cfs.

In addition, we recommend that the modeling for Alabama Power's Aquatic Resources Study and Downstream Aquatic Habitat Study,[4] as well as any Phase 2

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[1] *See* Tennant, D.L. 1976. Instream flow regimens for fish, wildlife, recreation, and related environmental resources. in Instream flow needs, Volume II: Boise, ID, Proceedings of the symposium and specialty conference on instream flow needs, May 3-6, American Fisheries Society, p. 359-373. Tennant (1976) defines habitat quality (measured by average depth and velocity of flow) as a percentage of the average annual flow. Poor habitat is represented by 0.1 (10 percent of the average annual flow), fair habitat is represented by 0.1 to 0.3 (10 to 30 percent of the average annual flow), and good habitat is represented by 0.3 to 0.4 (30 to 40 percent of the average annual flow), depending on season.

[2] *Id*.

[3] For purposes of this analysis, we assumed an aquatic base flow of 0.5 cubic feet per second per square mile (or cfsm) of drainage area (1,675 square miles at the Wadley gage). *See* U.S. Fish and Wildlife Service. 1981. Interim Regional Policy for New England Streams Flow Recommendations. Region 5. Boston, Massachusetts.

[4] The Aquatic Resources Study involves the use of a bioenergetics model to conduct simulations needed to test potential influence of water temperature and flow on growth rates of fish species downstream from Harris Dam. The Downstream Aquatic Habitat Study involves using a HEC-RAS model to evaluate the effect of alternative operations on the amount and persistence of wetted aquatic habitat in the Tallapoosa River downstream from Harris Dam.

assessment(s) include all the downstream flow release alternatives identified and evaluated as part of the Downstream Flow Release Alternatives Study. The results of all the modeling for the Aquatic Resources Study and Downstream Aquatic Habitat Study should be included in the final study reports and filed with the Updated Study Report, due by April 12, 2021.

4. The Draft Downstream Release Alternatives (Phase 1) Study Report refers to data sets (e.g., topographic and geometric data on pages 12-13 and 17-19) that were used to develop the models. To assist us in interpreting the models, we recommend including in the final study report a table and/or figure that summarizes all of the data sets used in the models and identifies their spatial extents in terms such as watershed segments, river miles (RMs), and square miles covered by each dataset (as appropriate), with reference to other geographic landmarks (e.g., nearest city, dam, bridge, etc.). Please incorporate into the table and/or figure, the stakeholder- and Alabama Power-identified erosion areas of concern. In addition, please provide the metadata for each data set used.

5. Page 14 of the Draft Downstream Release Alternatives (Phase 1) Study Report includes a description of the HEC-ResSim model that was developed for the project. Harris Dam was modeled in HEC-ResSim with both a minimum release requirement and maximum constraint at the downstream gage at Wadley. The draft report states that the minimum release requirement is based on the flow at the upstream Heflin gage, which is located on the Tallapoosa River arm of Harris Reservoir and has 68 years of discharge records. Page 5 of the draft report indicates that there is also a gage (Newell) on the Little Tallapoosa River Arm of the reservoir, which has 45 years of discharge records. It appears that only the Heflin gage was used in developing the minimum release requirement. As part of your response to stakeholder comments on the ISR, please explain the rationale for basing the minimum releases in the HEC-ResSim model only on the flows at the Heflin gage and not also on the flows at the Newell gage.

6. Pages 15 and 16 of the Draft Downstream Release Alternatives (Phase 1) Study Report, state that the drought indicator thresholds, or triggers, are only evaluated on the 1st and the 15th of every month in the model and that once a drought operation is triggered, the drought intensity level can only recover from drought condition at a rate of one level per "period." Please clarify in the final report if one "period" is equal to 15 days (i.e., the interval for evaluating drought triggers) and if this protocol is used for managing reservoir operations currently, or if it is only a parameter used in the model.

Draft Erosion and Sedimentation Study Report

7. The Erosion and Sedimentation Study in the approved study plan states that Alabama Power would analyze its existing lake photography and Light Detection and Ranging (LIDAR) data using a geographic information system (GIS) to identify elevation or contour changes around the reservoir from historic conditions and quantify changes in

lake surface area to estimate sedimentation rates and volumes within the reservoir. In addition, the approved study plan states that Alabama Power will verify and survey sedimentation areas for nuisance aquatic vegetation. According to the study schedule, Alabama Power will prepare the GIS overlay and maps from June through July 2019 and conduct field verification from fall 2019 through winter 2020.

The Draft Erosion and Sedimentation Study Report does not include a comparison of reservoir contour changes from past conditions or the results of nuisance aquatic vegetation surveys. The report states that limited aerial imagery of the lake during winter draw down and historic LIDAR data for the reservoir did not allow for comparison to historic conditions and that Alabama Power will conduct nuisance aquatic vegetation surveys during the 2020 growing season.

It is unclear why the existing aerial imagery and Alabama Power's LIDAR[5] data did not allow for comparison with past conditions or why the nuisance aquatic vegetation surveys will be conducted during the 2020 growing season instead of during the approved field verifications from fall 2019 to winter 2020. As part of your response to stakeholder comments on the ISR, please clarify what existing aerial imagery and LIDAR data was used and why it was not suitable for comparison with past conditions. Also, please explain the change in timing for conducting the nuisance aquatic vegetation surveys.

Draft Water Quality Report

8. Figure 3-8, on page 18 of the Draft Water Quality Study Report shows dissolved oxygen (DO) profiles for the Harris Project forebay. While much of the data is typical of the DO stratification pattern in a southern reservoir, the figure also shows that in June, July, and August of 2017 and 2019, there was a 2.0 to 3.0 milligram per liter increase in DO concentration at a depth of about 20 to 25 meters in Lake Harris, which is uncommon in such reservoirs. Please include Alabama Power's interpretation of this DO anomaly in the final Water Quality Study Report.

Draft Threatened and Endangered (T&E) Species Study Report

9. The goals of Alabama Power's T&E Species Study are to assess the probability of T&E species populations and/or their critical habitat occurring within the Harris Project boundary or project area and determine if there are project related impacts (i.e., lake fluctuations, downstream flows, recreation and shoreline management activities, timber

[5] During the June 4, 2020 Harris Action Team #1 and #5 meeting, Alabama Power stated it has LIDAR data sets from different years and would check its records to confirm the number of LIDAR data sets, and for which years the LIDAR data were collected.

management, etc.) to those species and critical habitats. According to the study schedule, Alabama Power would develop the GIS overlays and maps from April through July 2019, and conduct field verifications, if required, from October 2019 through September 2020.

The Draft T&E Species Study Report does not provide information on the presence or absence of potentially suitable habitat within the project boundary for all of the T&E species (e.g., red cockaded woodpecker,[6] northern long-eared bat,[7] pool sprite,[8] and white fringeless orchid[9]) on the official species list for the project.[10] Therefore, Alabama Power was unable to determine whether or not these species are likely to occur within the project boundary or identify a complete list of T&E species that require field surveys.

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[6] Page 8 the report states that land use data is not specific enough to determine if the 3,068 acres of coniferous forest in the project boundary at Lake Harris has the specific habitat characteristics suitable for red-cockaded woodpeckers.

[7] Page 19 of the report states that the Lake Harris and Skyline project boundaries fall within the range of the northern long eared bat and that there are no known hibernacula or summer roost trees within the project boundaries. However, as discussed in the ISR meeting, the report does not state whether any known northern long-eared bat hibernacula occur within a 0.25-mile radius of the project boundaries, or whether known summer roost trees occur within a 150-foot radius of the project boundaries. The report also does not provide information about timber/vegetation management practices within the project boundary. This information is needed in order to determine known occurrences of northern long-eared bats within or adjacent to the project boundaries and to determine potential project effects to this species.

[8] Page 21 of the reports states that pool sprite was documented at Lake Harris in Flat Rock Park in 1995. While subsequent surveys have not detected pool sprite, the report indicates that there are 138.4 acres of granite geology within the project boundary at Lake Harris. However, this species' vernal pool habitat was not identified at the project due to "a lack of available data."

[9] Page 22 the report states that National Wetland Inventory data is not detailed enough to identify potentially suitable habitat for white fringeless orchid within the project boundary.

[10] See FWS's official lists of T&E species within the Harris Project boundaries (i.e., at Lake Harris and Skyline) that were accessed on July 27, 2018, by staff using the FWS's Information for Planning and Conservation website (https://ecos.fws.gov/ipac/) and filed on July 30, 2018.

As part of your response to stakeholder comments on the ISR, please provide: (1) the maps and assessment of the availability of potentially suitable habitat within the project boundary for all of the T&E species on the official species list for the project; (2) documentation of consultation with FWS regarding the species-specific criteria for determining which T&E species on the official species list will be surveyed in the field; (3) a complete list of T&E species that will be surveyed during the 2nd study season as part of the T&E Species Study; and (4) confirmation that Alabama Power will complete the field verification scheduled by September 2020.

Draft Project Lands Evaluation (Phase 1) Report

10. The goals of the Project Lands Evaluation include: (1) identifying and classifying lands at the project that are needed for Harris Project purposes; (2) evaluating existing land use classifications at Lake Harris and determining if any changes are needed to conform to Alabama Power's current land classification system and other Alabama Power Shoreline Management Plans; and (3) identifying lands to be added to, or removed from the current project boundary.

Appendix B of the Draft Project Lands Evaluation (Phase 1) Report includes a small scale map of Lake Harris and the existing shoreline classifications, as well as larger scale maps showing parcels of land within the project boundary for which Alabama Power is considering either changing the existing land use classification, adding parcels to the project boundary, or removing parcels from the project boundary. However, the report does not include large scale maps showing the land use classifications for all of the existing shoreline. To facilitate review of the existing shoreline land use classifications, please file larger scale maps of all the shoreline areas as a supplement to the Draft Project Lands Evaluation Report, as part of your response to stakeholder comments on the ISR. Please include land use classifications on the maps. In addition, if available, please file the GIS data layers of the existing and proposed shoreline land use classifications.

Attachment B

Excerpt from 18 C.F.R. § 5.15

(d) *Criteria for modification of approved study*. Any proposal to modify an ongoing study . . . must be accompanied by a showing of good cause why the proposal should be approved, and must include, as appropriate to the facts of the case, a demonstration that:

(1) Approved studies were not conducted as provided for in the approved study plan; or

(2) The study was conducted under anomalous environmental conditions or that environmental conditions have changed in a material way.

(e) *Criteria for new study*. Any proposal for new information gathering or studies . . . must be accompanied by a showing of good cause why the proposal should be approved, and must include, as appropriate to the facts of the case, a statement explaining:

(1) Any material changes in the law or regulations applicable to the information request;

(2) Why the goals and objectives of any approved study could not be met with the approved study methodology;

(3) Why the request was not made earlier;

(4) Significant changes in the project proposal or that significant new information material to the study objectives has become available; and

(5) Why the new study request satisfies the study criteria in § 5.9(b).

Excerpt from 18 C.F.R. § 5.9(b)

(b) *Content of study request*. Any information or study request must:

(1) Describe the goals and objectives of each study proposal and the information to be obtained;

(2) If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;

(3) If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study;

(4) Describe existing information concerning the subject of the study proposal, and the need for additional information;

(5) Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how

the study results would inform the development of license requirements;

(6) Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate filed season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and

(7) Describe considerations of level of effort and cost, as applicable, and why proposed alternative studies would not be sufficient to meet the stated information needs.

Attachment C

R.L. Harris Process Plan and Schedule for the Integrated Licensing Process (ILP)

(shaded milestones are unnecessary if there are no study disputes; if due date falls on a weekend or holiday, the due date is the following business day)

18 C.F.R.	Lead	Activity	Timeframe	Deadline
§ 5.5(a)	Alabama Power	Filing of NOI and PAD	Actual filing date	6/1/2018
§ 5.7	FERC	Initial Tribal Consultation Meeting	No later than 30 days from NOI and PAD	7/1/2018
§5.8	FERC	FERC Issues Notice of Commencement of Proceeding and Scoping Document (SD1)	Within 60 days of NOI and PAD	7/31/2018
§5.8 (b)(3)(viii)	FERC/ Stakeholders	Public Scoping Meetings and Environmental Site Review	Within 30 days of NOI and PAD notice and issuance of SD1	8/28/2018 - 8/29/2018
§ 5.9	Stakeholders/ FERC	File Comments on PAD, SD1, and Study Requests	Within 60 days of NOI and PAD notice and issuance of SD1	9/29/2018
§5.10	FERC	FERC Issues Scoping Document 2 (SD2), if necessary	Within 45 days of deadline for filing comments on SD1	11/13/2018
§5.11(a)	Alabama Power	File Proposed Study Plans	Within 45 days of deadline for filing comments on SD1	11/13/2018
§5.11(e)	Alabama Power/ Stakeholders	Study Plan Meetings	Within 30 days of deadline for filing proposed Study Plans	12/13/2018
§5.12	Stakeholders	File Comments on Proposed Study Plan	Within 90 days after proposed study plan is filed	2/11/2019
§5.13(a)	Alabama Power	File Revised Study Plan	Within 30 days following the deadline for filing comments on proposed Study Plan	3/13/2019
§5.13(b)	Stakeholders	File Comments on Revised Study Plan (if necessary)	Within 15 days following Revised Study Plan	3/28/2019
§5.13(c)	FERC	FERC Issues Study Plan Determination	Within 30 days following Revised Study Plan	4/12/2019
§5.14(a)	Mandatory Conditioning Agencies	Notice of Formal Study Dispute (if necessary)	Within 20 days of Study Plan determination	5/2/2019
§5.14(l)	FERC	Study Dispute Determination	Within 70 days of notice of formal study dispute	7/11/2019
§5.15(a)	Alabama Power	Conduct First Season Field Studies	Spring/Summer 2019	

18 C.F.R.	Lead	Activity	Timeframe	Deadline
§5.15(c)(1)	Alabama Power	File Initial Study Reports	No later than one year from Study Plan approval	4/12/2020
§5.15(c)(2)	Alabama Power	Initial Study Results Meeting	Within 15 days of Initial Study Report	4/28/2020
§5.15(c)(3)	Alabama Power	File Study Results Meeting Summary	Within 15 days of Study Results Meeting	5/12/2020
§5.15(c)(4)	Stakeholders/ FERC	File Meeting Summary Disagreements/Modifications to Study/Requests for New Studies	Within 30 days of filing Meeting Summary	6/11/2020
§5.15(c)(5)	Alabama Power	File Responses to Disagreements/Modifications/ New Study Requests	Within 30 days of disputes	7/11/2020
§5.15(c)(6)	FERC	Resolution of Disagreements/ Study Plan Determination (if necessary)	Within 30 days of filing responses to disputes	8/10/2020
§5.15	Alabama Power	Conduct Second Season Field Studies	Spring/Summer 2020	
§5.15 (f)	Alabama Power	File Updated Study Reports	No later than two years from Study Plan approval	4/12/2021
§5.15(c)(2)	Alabama Power	Second Study Results Meeting	Within 15 days of Updated Study Report	4/27/2021
§5.15(c)(3)	Alabama Power	File Study Results Meeting Summary	With 15 days of Study Results Meeting	5/12/2021
§5.15(c)(4)	Stakeholders/ FERC	File Meeting Summary Disagreements/ Modifications to Study Requests/Requests for New Studies	Within 30 days of filing Meeting Summary	6/11/2021
§5.15(c)(5)	Alabama Power/ Stakeholders	File Responses to Disagreements/Modifications/ New Study Requests	Within 30 days of disputes	7/11/2021
§5.15(c)(6)	FERC	Resolution of Disagreements/ Study Plan Determination (if necessary)	Within 30 days of filing responses to disagreements	8/10/2021
§5.16(a)	Alabama Power	File Preliminary Licensing Proposal (or Draft License Application) with the FERC and distribute to Stakeholders	Not later than 150 days before final application is filed	7/3/2021
§5.16 (e)	FERC/ Stakeholders	Comments on Alabama Power's Preliminary Licensing Proposal, Additional Information Request (if necessary)	Within 90 days of filing Preliminary Licensing Proposal (or Draft License Application)	10/1/2021
§5.17 (a)	Alabama Power	License Application Filed		11/30/2021

Document Content(s)

APC Harris Relicensing

From: Windows Live™ Team <JIMALLEN1959@hotmail.com>
Sent: Thursday, June 11, 2020 4:23 PM
To: APC Harris Relicensing
Subject: Tallapoosa river

I am writing you about the flow of water from Lake Harris dam.
We own a cabin on the East bank of the Tallapoosa river and a 19acre island across one fork of the river.
The excessive flow of water released from the dam is eroding the island, and floating the river is nearly Impossible when the dam is shut off. We need a more constant flow of water, and raising the winter level will only worsen the problem.
I understand that I was to fill out some kind of survey by 5:00, but I could not find out how.

Thanks,
James H. Allen
334-863-0347

Sent from Mail [go.microsoft.com] for Windows 10

APC Harris Relicensing

From: Clark, Maria <Clark.Maria@epa.gov>
Sent: Thursday, June 11, 2020 7:45 PM
To: Anderegg, Angela Segars
Cc: Sarah Salazar; Clark, Maria
Subject: EPA comments on R.L. Harris Dam Relicensing Draft Study Reports

Dear Angie,

U.S. Environmental Protection Agency appreciates the opportunity to review the Draft Study Reports regarding the relicensing of the R.L. Harris Dam on the Tallapoosa River in Alabama. We also appreciate the outreach that Alabama Power has done in the early stage of the process to ensure that issues can be fully addressed prior to finalizing the major components of the proposed project.

During the April 29, 2020, Initial Study Report meeting, Federal Energy Regulatory Commission (FERC) and Alabama Rivers Alliance submitted questions asking why modelling of downstream releases were limited to the Green Plan, Pre-Green Plan, and Pre-Green Plan with 150 cfs minimum flow. Questions were also asked as to why only the 150 cfs minimum flow was selected. Multiple questions were asked about the possibility of having an option of the Green Plan with a minimum flow.

Further, Alabama Power suggested that any requests for additional flow scenarios be submitted as soon as possible before phase 2 starts. The EPA requests that the flow scenarios include the evaluation of an option including both the pulses of the Green Plan with a minimum flow, and a higher minimum flow. The 150 cfs minimum flow was selected based upon the volume of water used for the Green Plan, as opposed to an analysis based upon protective minimum flows for aquatic life.

Additionally, EPA requests the inclusion of both adaptively managed flow scenarios and adaptive management as an outcome. The state-of-the-science on environmental flows includes adaptive management as a key feature for the protection of aquatic life. The evaluation could examine how monitoring would be used to evaluate the success of the flows, and any potential adjustments that may be needed over time. The EPA submitted resources that supports this request in March 2019.

We thank you in advance for the opportunity to work with you during the FERC relicensing process.

Maria R. Clark

NEPA Section - Region 4
Strategic Programs Office
U.S. Environmental Protection Agency
61 Forsyth, Street South West
Atlanta, GA 30303
404-562-9513

David Bishop, Helena, AL.
June 10, 2020 FERC Permit P-2628-065

Dear FERC,

I have spent much time fishing the Tallapoosa River from Wadley to Horseshoe Bend. I have been following the re-licensing for the past couple of years and have listened in on one call.

I began fishing on the Tallapoosa River near Wadley with my family in 1962. Both my grandfathers before me fished on the river since they were children in the early 1900's. As an adult I fish often (35-40 days) every year. As a kid I probably fished 100 times a year. I grew up less than a mile from Lake Harris but have only fished it a handful of times. I have no problem with the lake.. But I do have a problem with it's operation regarding downstream releases.

As recently as last week (June 2-3, 2020), actual release was at least 3 times more volume than scheduled. Currently, I live 2 hours away from where I fish, so I always call the dial-up line before leaving the house. It said only one turbine would be generating. This information was wrong. Not only was it an inconvenience, but a real endangerment to those of us who rely on the phone schedule for release information . In this case, at Horseshoe Bend, the water rose at least 5 feet in a 45 minute span. This has happened numerous times and presents a real danger to small craft. We were run off the river for about 10 hours while the water was too high and fast to fish. I do my best to pick good, safe times to fish. I check with the power company ahead of time. I know that water from the dam takes 10 hours to reach Horseshoe Bend. In spite of all I know, I don't know what the Power Company doesn't share. They could send real time alerts to my phone. This would go a long way toward protecting the lives of Alabama citizens.

We have noticed a large amount of bank erosion and tree loss in the years since the dam was built. A corresponding widening and shallowing of the stream with warmer water resulting in fewer fish has been noted by many who fish the river.I feel that responsible and constant release would mimic the pre-dam flow and allow the river to recover to its natural state. I am also concerned that raising the winter pool of the lake will result in more flooding, erosion, loss of property and life downstream. Also, public access is limited to only two points above Lake Martin and below Wadley. This needs to be remedied so that more people may enjoy the river. FERC can take the lead and make sure that those of us downstream can enjoy our river as before.

Thank you,David Bishop
205-613-3091
177 River Valley Road
Helena, AL 35080

Document Content(s)

Dear Secretary Bose,

Our property is located on the Tallapoosa River, in Tallapoosa County, between Bibby's Ferry and Germany's Ferry. Over the past 20+ years the banks have drastically eroded and it has gotten even worse in the past 4 years. When the dam is let off the water level gets so high, to the top of the banks. There have been numerous trees along the bank that have fallen into the river. In one area alone the bank has eroded so much that 2 trees have already fallen and a 3rd tree is on the verge of falling. These trees were not "side by side" along the river bank. The 3rd tree that is on the verge of falling was several feet behind the other 2 trees that fell.

There is an island on the property as well. This use to be 1 acre – now it's much less than that. Several trees on that island have also fallen. There is a slue that goes between the riverbank and the island. The water in the slue is normally anywhere from ankle high to knee high. However when the dam is let off the water is up to the top of the bank – well over 7 feet deep. This has caused several trees along the slue to fall and block the water flow in the slue. When the water is down there is very little water, or no water, going down the slue. When the water is up the slue looks like a river.

The falling trees worry me, but what worries me the most is where the banks have not only washed away but caused "caves". In the past we had a small fence several feet from the bank to keep kids from running and falling in the river. A lot of the fence posts have now fallen down the banks and there are huge drop off's that the fence no longer protects the kids from falling down. Approximately 10 years ago we noticed a huge hole, like a cave, in the bank that is close to our picnic area and it is getting larger every year and closer to our picnic area. We are afraid the picnic area will eventually cave in unless something is done about this. Please note this picnic area was not even close to the bank when it was built. Now there are huge drop off's close to the picnic area.

Just this year we noticed a big cave in on the bank of the slue. The only time the water is high enough in the slue to reach the top of the bank is when the water is let off. The cave in is now approx. 2 feet into the bank and getting close to the road we use.

We have repeatedly asked for help from various sources for ideas or help to keep the banks from eroding. So far we have received no help or ideas. I'm afraid we will be enjoying a day on the river and a bank will cave in and cause harm or even death to someone. I have pictures from 2016 as well as pictures from 2020 that will show the erosion.

Thanks,

Michele Waters

256-397-0214
Watermf@auburn.edu

13765 Bibby's Ferry Road
Wadley, AL 36276

Document Content(s)

6/11/2020

Dear Secretary Bose,

I am writing in regard to FERC project number P-2628-065 as it pertains to our property on the Tallapoosa River, in Tallapoosa County, between Bibby's Ferry and Germany's Ferry.

My grandmother farmed this property as a youth and it has been a part of our lives over the past 50 plus years growing up. Over the years, I have seen the drastic changes to the beautiful river and our land that borders its banks. I know there are natural changes to a river's edge, but there has to be ways to preserve the land so that it doesn't just completely erode away become part of the river and no more a place where we can fish, camp and play.

Over the past four years it has become increasingly worse and we are losing more and more trees in addition to the soil that keeps them a root! When the water is released from the dam the water level quickly tops our banks gushing and washing away our land and our trees.

We have an island on the property as well that use to be one acre and it continues to erode away along with its vegetation. We use to be able to walk the slue that's between the riverbank and the island, but the fast moving high waters have taken down so many trees it is almost completely closed off.

The banks of the river are becoming dangerous as the water erodes them away taking our land and the beauty they retain. There is a responsibility that comes with those who regulate the dam that causes these changes. We have repeatedly asked for help from various sources for ideas or help to keep the banks from eroding. Please let us know what can be done to preserve our beautiful river land so that our children and our children's children can enjoy for years to come.

Thank you,

Sharon Holland

Skholland23@gmail.com
678-699-7303

Where I live
3219 Southridge
Stockbridge, GA 30281

Where I love to play
Bibby's Ferry Road on the Tallapoosa River
Wadley, AL 36276

Document Content(s)

June 11, 2020

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

RE: Comments on Initial Study Reports, Study Modification Requests, and New Study Proposal for R.L. Harris Hydroelectric Project (P-2628-065)

Dear Secretary Bose:

Enclosed for filing in the above-referenced docket are comments, study modification requests, and a new study proposal submitted by Alabama Rivers Alliance for the R.L. Harris Hydroelectric Project.

Thank you for your assistance in this matter. If you have any questions or need additional information, please call me at 205-322-6395.

Sincerely,

Jack K. West

Jack K. West, Esq.

Alabama Rivers Alliance
Policy and Advocacy Director
2014 6th Avenue North
Suite 200
Birmingham, AL 35203

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Alabama Power Company	)	R.L. Harris Hydroelectric Project
	)	
	)	Project No. 2628-065

ALABAMA RIVER ALLIANCE'S COMMENTS ON INITIAL STUDY REPORTS, STUDY MODIFICATION REQUESTS, AND NEW STUDY PROPOSAL

The Alabama Rivers Alliance (ARA) submits the following comments on the currently available draft study reports as part of the Federal Energy Regulatory Commission's Integrated Licensing Procedure (ILP) for the R.L. Harris Hydroelectric Project, FERC Project No. P 2628-065 ("Harris" or "Harris Project"). Study modification requests for the Water Quality Study and Downstream Release Alternatives Study are contained in Sections I and II, and a new study proposal for a Battery Storage Feasibility Study comprises Section IV. Drafts of the Downstream Aquatic Habitat Study Report, Aquatic Resources Study Report, and the Recreation Study Report will be filed by Licensee over the summer, and the results of the forthcoming fisheries studies will likely inform future comments on the study reports currently available and commented upon here.

I. DRAFT WATER QUALITY REPORT

A. Request for Water Quality Study Modification

The caliber and usefulness of the studies conducted pursuant to the ILP will only be as good as the quality and quantity of data collected. ARA recommends that each opportunity to gather relevant data be taken during the relicensing process. The Draft Water Quality Study Report gathers data from three sources: Alabama Power Company (Licensee), the Alabama Department of Environmental Management (ADEM), and Alabama Water Watch.[1]

Of primary concern for downstream ecological health are the two monitors collecting data closest to the dam, both of which are operated and monitored by Licensee. Continuous, 15-minute interval data for dissolved oxygen levels and water temperature has been collected from a monitor in the tailrace (approximately 800 feet from the dam) during the months of June - October in 2017, 2018, and 2019 ("Tailrace Monitor"). A second continuous, 15-minute interval monitor operated by Licensee was placed roughly 0.5 miles downstream of the dam ("Downstream Monitor") and collected dissolved oxygen and temperature data from March 12 through October 31 of 2019, excluding approximately a week's worth of data due to problems with the monitor.[2]

[1] Draft Water Quality Study Report (Mar. 2020), Accession No. 20200410-5095, at 5.
[2] *See* Appendix B (Excel spreadsheet) of the Draft Water Quality Report, "Downstream Monitor 2019" and "Notes" tabs.

Data collected by these two monitors, in particular, are essential to understanding the quality of water being discharged by Harris because they are closest to the dam and are the only continuous samplings included in the study. The ILP process allows for two seasons of study and data collection; however, Licensee is only collecting one season's worth of water quality data under the current study plan.[3] While the 2019 dissolved oxygen levels from the Downstream Monitor met or exceeded 5mg/L 99.9% of the time,[4] this is but one year's worth of data collected during a non-drought year. Data from the Tailrace Monitor for 2017 and 2018—closer in time to actual drought conditions in late 2016—shows "numerous events" where dissolved oxygen levels did not meet 5mg/L.[5] Due to flooding events, the Downstream Monitor could not be deployed until March 12, 2019, and was inoperable for approximately another week due to a dead battery and washing ashore.[6] Combined, roughly three weeks of data (or ~10% of the total) scheduled to be collected in the Water Quality Study Plan was not collected because of equipment failure and environmental conditions.

To bolster the studies being performed, and to provide the most useful reports to stakeholders and FERC, pursuant to 18 C.F.R. § 5.15(d), ARA proposes a second year of water quality monitoring at the Downstream Monitor to collect dissolved oxygen and water temperature data in 15-minute intervals from July1 – October 31, 2020, and from March 1 – June 30, 2021. While 2020 has been a wet year thus far, conditions later in the year and early next year may provide an opportunity to collect data during drier, potentially drought, periods.

Additionally, we request that discharge data be included along with the dissolved oxygen and temperature data collected by the Downstream Monitor in 2020-21 to enable stakeholders to better understand the relationship between releases and water quality. The Tailrace Monitor data included in Appendix B to the Water Quality Report for 2017-2019 includes 15-minute interval discharge data for "Turbine 1," "Turbine 2," and "Total Discharge," and such data should be included with the continued monitoring data.

Finally, an assessment of any aeration or aspiration devices used to boost dissolved oxygen levels should also be included in order to take into account such artificial enhancements (and to consider any declines in water quality were these devices not to function properly). Documents filed with FERC prior to Harris' operation describe "incorporating into the turbine discharge an aspiration system to provide up to a 2 ppm increase in dissolved oxygen."[7] The condition of any existing aspiration system and a comparison to current technologies used to enhance dissolved oxygen levels should be undertaken.

As FERC staff have recognized, it is difficult to draw conclusions and make decisions with only one season's worth of data from a critical monitoring location.[8] Without additional monitoring efforts, Licensee, FERC, and stakeholders will miss an opportunity to collect data more reflective

[3] *See* Final Water Quality Study Plan (May 2019), Accession No. 20190513-5093.
[4] Draft Water Quality Study Report (Mar. 2020), Accession No. 20200410-5095, at 46.
[5] *Id.*
[6] *See* Appendix B (Excel spreadsheet) of the Draft Water Quality Report, "Notes" tab.
[7] Application of Alabama Power Company for Approval of Revised Exhibit S to License (Apr. 30, 1982), Accession No. 19820504-0246, at 5.
[8] *See* Initial Study Report Meeting Summary (May 12, 2020). Accession No. 20200512-5083, at 24-27.

of periods where water quality is decreased and water quality criteria more difficult to meet. Gathering a second year of continuous, 15-minute interval data for dissolved oxygen and temperature (paired with discharge data) at the Downstream Monitor will provide a more robust dataset and strengthen the studies conducted during this ILP.

B. Water Temperature Concerns

There is significant stakeholder concern over the temperature of releases from Harris, and ARA understands that analysis of the effects of temperatures will be included in the forthcoming Aquatic Resources Study Report.[9] This concern stems from the scientific literature documenting the ecological consequences of cold-water pollution from hydroelectric dams[10] and decades of research on Harris indicating "thermal alteration and generation frequency negatively affect the occupancy of most fish species below the dam."[11] As additional study and analysis of the thermal regime progresses and is reported in the Aquatic Resources Study, ARA recommends that *temperature and flows be considered in tandem* during this analysis because "both discharge and temperature must be simultaneously considered for the successful implementation of environmental flow management below dams."[12]

The existing license for Harris required Licensee to work with state agencies and EPA prior to commencement of construction to come up with an "optimum design and placement of the project intake structures to permit withdrawal of water from selected levels of the reservoir to control the water quality of the discharges from the powerhouse."[13] Within four years of the issuance of the existing license, Licensee was required to file a revised (and then a re-revised) Exhibit S that included its plans to study the potential fishery resources of the reservoir and "a description of measures being taken to maintain or change the water quality of the Tallapoosa River downstream from the project."[14]

Licensee's re-revised Exhibit S filed in April of 1982 evidenced Licensee's understanding of the connection between temperatures and water quality and the need to design an intake structure to withdraw high-quality surface waters. Licensee's re-revised Exhibit S reads in part:

> "For enhancement of discharge water quality, it is desirable to withdraw water from as close to the surface as possible. At Harris Dam, which employs seasonal drawdown, the objective of surface withdrawal has been solved by incorporating into the design movable sills at the invert of each intake opening.…Location of

[9] Initial Study Report Meeting Summary (May 12, 2020). Accession No. 20200512-5083, at 26.
[10] Julian D. Olden & Robert J. Naiman, *Incorporating Thermal Regimes into Environmental Flows Assessments: Modifying Dam Operations to Restore Freshwater Ecosystem Integrity*, Freshwater Biology (2010) 55, at 88-90.
[11] Elise R. Irwin, *Adaptive Management of Flows from R.L. Harris Dam (Tallapoosa River, Alabama)—Stakeholder Process and Use of Biological Monitoring Data for Decision Making*, U.S. Geological Survey Open-File Report 2019-1026, at 22 [hereinafter "USGS Open-File Report 2019-1026"].
[12] Olden, *supra* note 10, at 87.
[13] Harris Dam License, FERC No. P-2628, Article 51, Appendix F to PAD, Accession No. 20180601-5125 [hereinafter "Harris License"].
[14] Harris License, Article 52.

> these sills at the highest levels possible for operation will ensure the highest quality water being drawn into the turbines."[15]

Despite early attempts to engineer an intake to accommodate epilimnetic withdrawals and "solve" the problem of cold releases with lower dissolved oxygen content, thermal pollution[16] has plagued the river downstream from Harris since it began operations.

Unfortunately, neither the Aquatic Resources Study Plan nor the Draft Water Quality Report contemplate the study of any potential remedial actions to adjust water temperatures in line with unregulated reaches of the Tallapoosa. Licensee has acknowledged that once an issue has been identified with water temperatures, it plans to study technologies that can address the thermal regime.[17] Due to the available evidence of low temperatures impacting both colonization and persistence of fishes and the downstream macroinvertebrate community[18] and the sizeable stakeholder concern, ARA urges thorough study of the infrastructure enhancements available for implementation at Harris to control release temperatures. A variety of temperature management strategies exist, including multi-level intake structures, floating intakes, and reservoir destratification approaches using pumps and submerged weirs, as well as operational adjustments in the timing and volume of releases.[19]

II. DRAFT DOWNSTREAM RELEASE ALTERNATIVES STUDY REPORT

The extent to which the Harris project has altered flows of the Tallapoosa River is reflected in comments submitted by the Alabama Department of Conservation and Natural Resources (ADCNR) in 1982, which lament the "loss of 49 percent of the last major free-flowing river habitat…in Alabama."[20] According to the ADCNR's reading of USGS data at the time, flows from the pre-dam period of 1923 to 1972 equaled or exceeded the minimum flow of 45cfs stipulated in Article 13 of the license *100% of the time*.[21] Flows of 8,000cfs due to single turbine generation at Harris were equaled or exceeded during that era only 4.4% of the time, and flows of 16,000cfs due to two-unit generation were equaled or exceeded only 1.2% of the time.[22] For decades the Tallapoosa downstream of Harris has weekly experienced flows it otherwise would have seen, on average, roughly eight days out of a given year.

This flow regime has not been without consequences. Researchers have documented as much as a 67% reduction in flows than during pre-dam periods, greater instability of day-to-day flow

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[15] Revised Exhibit S to Harris License Article 52 (Apr. 20, 1982), Accession No. 19820504-0246, at 5.
[16] Olden, *supra* note 10, at 91.
[17] Initial Study Report Meeting Summary (May 12, 2020). Accession No. 20200512-5083, at 26.
[18] *See generally*, USGS Open-File Report 2019-1026.
[19] Olden, *supra* note 10, at 97-101; *See also* Karin Krchnak et al., *Integrating Environmental Flows into Hydropower Dam Planning, Design, and Operations*, World Bank Technical Guidance Note (Nov. 22, 2009), at 24-27, *available at* http://documents.worldbank.org/curated/en/712981468346147059/Integrating-environmental-flows-into-hydropower-dam-planning-design-and-operations.
[20] Comments filed by ADCNR (Aug. 11, 1982) Accession No. 19820813-0012, at 3.
[21] *Id.* (emphasis added).
[22] *Id.*

variations, and an increase in very low-flow periods.[23] The flow instability and altered thermal patterns caused by hydropeaking operations have depressed species richness, "influenced fish persistence and colonization," reconfigured the downstream macroinvertebrate community, and created "adverse effects on hydraulic variables such as water velocity, depth, and temperature."[24]

As a result of Harris operations, the 14-mile stretch of the Tallapoosa from the dam to Alabama Highway 77 is currently listed by ADEM as a Category 4C waterbody impaired due to hydrologic alteration.[25] And the U.S. Geological Survey's (USGS) Open-File Report from last year indicates "that hydrologic alteration in the river has affected various biological processes."[26]

Despite the past decades of disruption, studies performed during the ILP and a reinvigorated adaptive management approach can shape a new framework for creating positive ecological responses below Harris. As the USGS Open-File Report on adaptive management of flows from Harris states, "[i]f flow and thermal alteration from the dam can be modified toward improving natural resource objectives, adaptive management processes and long-term monitoring could further reduce uncertainty related to biotic response to new Federal Energy Regulatory Commission licensing requirements."[27]

A. A Wider Variety of Release Patterns Needs to Be Modeled and Considered

We appreciate that Licensee was willing fifteen years ago to enter into a collaborative process with stakeholders and to voluntarily operate the Harris project according to an adaptive management plan known as the Green Plan,[28] the purpose of which "was to reduce effects of peaking operations on the aquatic community downstream."[29] The Green Plan was a starting point for adaptive management, but evidence suggests it has not improved conditions for aquatic life. The most recent published literature demonstrates that although "[h]abitat availability for fishes increased under the Green Plan management…improved conditions did not improve recruitment processes for species of interest."[30] Further, "results indicate that the Green plan did not meet the stakeholder objective to restore and maintain macroinvertebrate community composition similar to unregulated reaches within the regulated portions of the river."[31]

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[23] Elise R. Irwin & M.C. Freeman, *Proposal for Adaptive Management to Conserve Biotic Integrity in a Regulated Segment of the Tallapoosa River, Alabama, U.S.A.*, Conservation Biology (2002), 16(5): 1212-1222.
[24] USGS Open-File Report 2019-1026, at 2-3.
[25] ADEM's *2020 Alabama Integrated Water Quality Monitoring and Assessment Report* required by Clean Water Act Section 305(b), Appx. B, at 33 *available at* http://www.adem.state.al.us/programs/water/waterforms/2020AL-IWQMAR.pdf.
[26] USGS Open-File Report 2019-1026, at 9.
[27] USGS Open-File Report 2019-1026, at 3.
[28] FERC Scoping Document 2 (Nov. 16, 2018), Accession No. 20181116-3065, FN11 at 16 ("The Green Plan is an adaptive management program that began in 2005, and that consists of providing pulsing flow releases (10 to 30 minutes in length) in the Tallapoosa River to enhance aquatic habitat, fish, and other aquatic organism downstream from Harris Dam.").
[29] Downstream Release Alternatives Study Plan (May 2019), Accession No. 20190513-5093, at 2.
[30] USGS Open-File Report 2019-1026, at 22.
[31] *Id.* at 3.

Since beginning adaptive management and the Green Plan roughly fifteen years ago, no actual adaptation or iteration has occurred. This relicensing and the studies now underway provide an opportunity to iterate, adapt, and improve flows and subsequent impacts on downstream aquatic life, recreation opportunities, erosion and sedimentation, and water quality. In order to make the refinements contemplated by a full adaptive management process, a wide variety of flow scenarios should be studied, and "[c]ontinuing adaptive management in tandem during the FERC relicensing process would be advantageous to include a specific assessment of long-term objectives of all stakeholders."[32]

B. Until Aquatic Resources and Aquatic Habitat Study Reports Are Available, It Is Premature to Ask Stakeholders to Specify All Flow Alternatives to Model

Commenters, stakeholders, and FERC staff have encouraged Licensee to examine a broad range of flows throughout the ILP.[33] Currently, licensee is studying two possibilities other than its current flow regime and its prior flow regime. The Draft Downstream Release Alternatives Phase 1 Report filed by Licensee assesses impacts to operational parameters (*e.g.*, generation, reservoir levels, flood control) under three flow scenarios: (i) the current Green Plan pulsing regime that has been in effect since 2005 through a voluntary adaptive management process; (ii) the pre-Green Plan regime with no intermittent flows between peaks, which occurred from 1983 to 2004; and (iii) a continuous minimum flow of 150cfs, which is the equivalent daily volume of the current Green Plan pulses and has never been physically implemented and studied.

A fourth release scenario, the alternative/modified Green Plan, will be evaluated in Phase 2 of the study, once results from the Aquatic Resources Study are available to shape the design of an altered Green Plan.[34] The two alternatives that have never been implemented—a continuous minimum flow of roughly an equivalent volume and altering the timing of the existing Green Plan releases—are effectively different flavors of the existing release scheme, though studying those modifications may yield important insights into improving flows.

The summary of the Initial Study Report meeting reflects that Licensee desires "to hear from stakeholders now" regarding alternative flow scenarios stakeholders would like to have modeled,[35] despite no draft Aquatic Resources Study or Aquatic Habitat Study reports being available. The downstream release alternatives, aquatic resources, water quality, and aquatic habitat reports are *all deeply interrelated*, and without at least draft reports of the fisheries studies, stakeholders should not be required to propose alternative flow scenarios until more information is available. Indeed, Licensee itself acknowledges that the results from the Aquatic Resources Study are needed

[32] *Id.* at 19.
[33] Initial Study Report Meeting Summary (May 12, 2020), Accession No. 20200512-5083, at 40; *see also* Comments submitted by the Environmental Protection Agency (Sept. 25, 2018), at 5 ("The EPA encourages APC to consider adding as many feasible modeling scenarios as possible to determine the optimal downstream flow conditions.").
[34] Draft Downstream Release Alternatives Phase 1 Report (Apr. 2020), Accession No. 20200410-5069, at 2, FN1.
[35] Initial Study Report Meeting Summary (May 12, 2020), Accession No. 20200512-5083, at 21.

to design the fourth flow scenario it plans to model.[36] Those same results will also inform what variety of inputs stakeholders suggest.

In fact, the logical time to propose additional flow scenarios is after Licensee has "analyze[d] the effects of each downstream release alternative on other resources, including water quality… downstream aquatic resource (temperature and habitat), wildlife and terrestrial resources, threatened and endangered species, recreation, and cultural resources," which will be accomplished by Phase 2 of the study.[37] At a minimum, stakeholders should be equipped with the draft fisheries studies showing the current status of aquatic resources before being required to list all alternative flows to be studied.

C. Preliminary Proposals for Additional Flow Modeling and Study Modification Request

However, ARA understands that the modeling of additional flows takes time and effort, and Licensee has made clear that it would like to have as much stakeholder input as to various flows to model as soon as possible. While reserving the right to request other release alternatives be considered once more information is made available to stakeholders, ARA proposes the following study modification request pursuant to 18 C.F.R. § 5.15(d) for additional flow scenarios be analyzed as part of the Downstream Release Alternatives Study:

(i) A variation of the existing Green Plan where the Daily Volume Release is 100% of the prior day's flow at the USGS Heflin streamgage, rather than the current 75%;

(ii) A hybrid Green Plan that incorporates both a base minimum flow of 150 cfs and the pulsing laid out in the existing Green Plan release criteria;

(iii) A constant but variable release that matches the flow at the USGS Wadley streamgage to the UGSG Heflin streamgage to mimic natural flow variability;[38] and

(iv) 300cfs and 600cfs minimum flows.

Some of these flows, particularly items (iii) and (iv) may have been modeled internally by Licensee as part of the original adaptive management process; however, those models are not currently available as part of this relicensing.[39] Studying a wider range of potential flows during the ILP

[36] Draft Downstream Release Alternatives Phase 1 Report (Apr. 2020), Accession No. 20200410-5069, at 2, FN1 ("Results from the other three scenarios as well as from the Aquatic Resources Study are needed to design the alternative to be studied.").
[37] *Id.* at 2-3.
[38] We understand that there may limitations imposed by the existing turbines to implementing this type of flow, but modeling it would provide a frame of reference to other options relative to a more natural flow.
[39] USGS Open-File Report 2019-1026, at 10 ("The other three alternatives were based upon the concept of mimicking the flow regime recorded at the USGS streamgage in Heflin, at Wadley, 22 km below the dam. The Heflin streamgage measures flows in the unregulated upper portion of the Tallapoosa River (fig. A1); several stakeholders hypothesized that mimicking these flows at the dam would allow for some natural flow variability in the regulated portion of the river. The first of these alternatives was, in effect, modeled as a constant flow from the dam to maintain the Heflin

could result in improved diversity and abundance of aquatic life and habitat, more recreation opportunities, decreased erosion and sedimentation, and gains in water quality.

III. DRAFT EROSION AND SEDIMENTATION REPORT

FERC has identified erosion and sedimentation as an issue to assess for cumulative impacts, with the tentative geographic scope of inquiry to encompass the upper Tallapoosa and the 44 river miles downstream of Harris dam, including Horseshoe Bend Military Park.[40] The Erosion and Sedimentation Study Plan involves "collecting and summarizing information under baseline operations," meaning the project and project operations as they exist today.[41] While the Draft Erosion and Sedimentation Study Report primarily attributes erosion downstream of the dam to clear-cutting and agricultural use, it reports that "erosion at these sites may be exacerbated as a result of flow releases from Harris Dam."[42]

Article 20 of the existing license states that Licensee "is responsible for and must take reasonable measures to prevent erosion and sedimentation."[43] Such measures and responsibility must be comprehensive in light of hydropeaking's amplifying effects on other potential sources of erosion both upstream and downstream of Harris. The High Definition Stream Survey (HDSS) completed as part of the Erosion and Sedimentation Study Report describes opportunities to "support targeted restoration, habitat improvement," and identified at least one area that "would be an excellent area to focus streambank rehabilitation efforts."[44] The HDSS states that it documents baseline conditions and that future surveys could be directly compared to it in order to understand ongoing shifts in river conditions.[45] ARA supports the collection of future surveys for this purpose.

As part of its environmental analysis, ARA encourages FERC to consider all historical evidence available when assessing how geology and soils may be impacted over another 30- to 50-year license term, including any evidence submitted by stakeholders in the form of photographs, maps, and personal accounts. If the Green Plan, or a similar pulsing flow regime is to be continued as part of a renewed license, a suspended solids sampling conducted pre-pulse, during generation, and post-pulse would better identify how and when sediment transport is occurring in the river, enabling an identification of project operations' impact apart from natural river processes and other potential sources of erosion.

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target at Wadley (Heflin), which consisted of minimum flows plus any necessary generation flows. The second was similar, except the flow from the dam was to never reach levels below 8.5 m3/s (Heflin 300). The third was an option proposed by the power utility, in which at least 75 percent of the Heflin target was maintained by 2–3 daily pulses, 1 at 0600 and 1 at 1200.").

[40] FERC Scoping Document 2 (Nov. 16, 2018), Accession No. 20181116-3065, at 21-22.

[41] Erosion and Sedimentation Study Plan (May 2019), Accession No20190513-5093, at 2.

[42] Draft Erosion and Sedimentation Study Report (Mar. 2020), Accession No. 20200410-5091, at 31.

[43] Harris License, Article 20.

[44] *See* Appendix E to Draft Erosion and Sedimentation Study Report (Mar. 2020), Accession No. 20200410-5091, High Definition Stream Survey Final Report prepared by Trutta Environmental Solutions, LLC, at 43.

[45] *Id.*

IV. NEW STUDY PROPOSAL FOR BATTERY STORAGE FEASIBILITY STUDY TO RETAIN FULL PEAKING CAPABILITIES WHILE MITIGATING HYDROPEAKING IMPACTS

Project operations of hydropeaking dams come with environmental costs, and over the past decade dam operators have faced increasing pressure to shift from highly-altered hydrologic conditions (*i.e.*, peaking operations) to more natural flows to restore downstream ecosystems.[46] Yet the need to meet peak system demand remains, and researchers are increasingly studying the use of battery energy storage systems (BESS) to mitigate the effects of hydropeaking while retaining full peaking capabilities. Increasingly cost-effective BESS can substitute for the peaking ability (or a portion of the peaking ability) usually provided by conventional hydropower plants by storing hydropower produced during off-peak hours (*e.g.*, generated with a continuous minimum flow or variable flow) and discharging this power during peak periods.[47]

By implementing BESS, restrictions can be imposed on ramping rates, which requires operators to adjust flows more slowly and constrains peaking capabilities; however, supplemental energy can be discharged from the BESS to still meet peak demand. BESS also provide additional grid benefits of frequency regulation, voltage support, black start services, and can further accommodate intermittent renewables, which make up a growing portion of the generation mix. According to new research, BESS "should begin to enter into discussions related to hydropeaking mitigation, especially given the typically long duration of operating licenses."[48]

At Harris, Licensee has expressed concerns that a 150cfs minimum flow would begin to constrain the utility's ability to peak with its current level of flexibility.[49] By undertaking a study of pairing BESS with existing hydropower generation, FERC, Licensee, and stakeholders may uncover a cost-effective path to expand operational flexibility, create new grid benefits, and achieve multiple stakeholder objectives, including accommodating a wider range of releases and mitigated peaking that improve ecological health downstream. Some studies indicate that "BESS can help to restore the natural [flow] regime at lower costs than using environmental flows alone," and such may be the case with the Harris Project.[50]

Pursuant to 18 C.F.R. §§ 5.15(e) and 5.9(b), ARA submits this proposal for a new study to determine the feasibility of adding BESS to the Harris Project to both serve project purposes and address project effects.

A. Goals, Objectives, and Information to Be Obtained - § 5.9(b)(1)

[46] Ryan A. McManamay et al., *Organizing Environmental Flow Frameworks to Meet Hydropower Mitigation Needs*, Environmental Management 58(3):365-85, doi: 10.1007/s00267-016-0726-y (Jun. 25, 2016), at 366.
[47] *See generally* Yoga Anindito et al., *A New Solution to Mitigate Hydropeaking? Batteries Versus Re-Regulation Reservoirs*, Journal of Cleaner Production 210 (2019) 477-489, *available at* https://kern.wordpress.ncsu.edu/files/2018/11/1-s2.0-S0959652618334401-main.pdf.
[48] Anindito, *supra* note 47, at 487.
[49] Initial Study Report Meeting Summary (May 12, 2020). Accession No. 20200512-5083, at 23.
[50] Anindito, *supra* note 47, at 487.

The goal of conducting the Battery Storage Feasibility Study is to determine whether a BESS system could be economically integrated at Harris to mitigate the impacts of hydropeaking while retaining full system peaking capabilities. The objectives of the study are to assess:

1. What type, size, and configuration of BESS is most practical?
2. How much would the BESS cost, and what are the ownership options?
3. What are the economic benefits of a BESS addition, including capacity and ancillary benefits and the ability to enable future additions of non-dispatchable renewables?
4. Could BESS integration allow Harris to generate more often while retaining week-day peaking capabilities?
5. What are the technical and economic barriers to integrating BESS?

B. Resource Management Goals of the agencies or Indian Tribes with Jurisdiction over the Resource to Be Studies - § 5.9(b)(2)

Not applicable.

C. Relevant Public Interest Considerations in Regard to the Proposed Study - § 5.9(b)(3)

Sections 4(e) and 10(a) of the Federal Power Act require the Commission to give equal consideration to all uses of the waterway on which a project is located. When reviewing a proposed action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power and developmental values.

This study request relates to the public interest of restoring riverine ecosystems, including by providing more natural flow regimes that promote aquatic habitat and increase opportunities for fishing and other recreation. Riverine ecosystems are resources of particular public interest for a variety of reasons, including their ecological functions, sporting interest, and subsistence use. Describing the effects on these resources is necessary to fulfill the Commission's responsibilities under the National Environmental Policy Act (NEPA). Ensuring that environmental measures pertaining to these resources are considered in a reasoned way is relevant to the Commission's public interest determination.

D. Existing Information and the Need for Additional Information - § 5.9(b)(4)

While sources of information related to project generation and peak demand exist, there is a need for a more holistic understanding of Harris' role in the power system and what contributions it is required to make to meet system peak demand. The Pre-Application Document (PAD) filed by Licensee does not contain detailed information about the current operational flexibility of Harris, its limitations, and the causes of those limitations. A data gap exists around Project ramping rates, and understanding the extent to which imposing maximum ramping rates can smoothen the dam's discharge pattern and mitigate the impacts of hydropeaking would be useful to many stakeholders and to FERC. To ARA's knowledge, no battery feasibility study has been performed at other hydropower projects owned by Licensee that could provide sufficient comparable information, and

a feasibility study is needed to assess how much operational flexibility BESS could provide and how it might allow for more fine-tuned control of ramping rates and discharges while also benefitting the larger grid and Licensee.

E. Nexus to Project - § 5.9(b)(5)

A clear project nexus exists between project operations, downstream releases, and aquatic habitat. The Harris Project regulates the timing, allocation, and distribution of water flows in the Tallapoosa below Harris Dam, and prior to the Green Plan, completely cut off flows of the river at times. This regulation influences the availability of water for a variety of uses, including power generation, fisheries, and recreation. This requested study could form the basis for license requirements stipulating minimum or variable releases, mitigation measures, and assist future adaptive management.

F. Study Methodology - § 5.9(b)(6)

Integrating BESS at hydropower projects is a relatively new field with no established methodology.[51] This study can be completed through desktop analysis only and is primarily a financial cost/benefit analysis. By lessening hydropeaking activities, energy and perhaps capacity revenues from Harris will be reduced, and the study must quantify the additional value of BESS to Harris. Adding BESS has the potential to produce energy, capacity, and ancillary revenues (as well as deferral of transmission and distribution investments) that could offset these implementation costs. Importantly, some of these values are not dependent upon water flow.

Study activities will include:

- Creating a survey of battery cost estimates based on public sources focusing on price projections for 2023 and beyond, as well as any incentives that may be available.
- Describing the operational flexibility gains for a range of BESS (*e.g.*, 5 MW, 2-hour; 5 MW, 4-hour; 10 MW, 2-hour; 10 MW, 4-hour) vs. costs.
- Comparing BESS options to "business-as-usual" Harris operations to quantify revenues to be replaced by a BESS alternative. This will provide a preliminary alternative framework to consider changes in operations and allow for comparisons against other possible project mitigation measures.

[51] Examples of battery-paired hydropower projects, such as the 4 MW battery storage project added to Byllesby project in Virginia and the hydro-battery microgrid project in Alaska, can be used to further develop this study. *See generally* James R. Thrasher, *How the Byllesby Hydro Plant Continues to Make History*, Hydro Review (Jul. 29, 2019), *available at* (https://www.hydroreview.com/2019/07/29/hydro-review-how-the-byllesby-hydro-plant-continues-to-make-history/#gref); Clay Koplin, *Cordova's Microgrid Integrates Battery Storage with Hydropower*, T&D World (Mar. 7, 2019), *available at* https://www.tdworld.com/distributed-energy-resources/energy-storage/article/20972311/cordovas-microgrid-integrates-battery-storage-with-hydropower; and Marek Kubik, *Adding Giant Batteries To This Hydro Project Creates A 'Virtual Dam' With Less Environmental Impact*, Forbes (May 23, 2019), *available at* https://www.forbes.com/sites/marekkubik/2019/05/23/adding-giant-batteries-to-this-hydro-project-cre

- Identifying any technical requirements and limitations to integrating BESS, including siting restrictions and any separate metering needed to allow the BESS to draw power from hydro generation, the grid, or a combination of the two.
- Preparing a report summarizing economic data and other analysis to be presented to stakeholders and commented upon.

G. Level of Cost and Effort - § 5.9(b)(7)

The total cost of this study is expected to be $20,000 - $30,000. This cost estimate is based on a recent battery storage feasibility study conducted for a series of four hydroelectric dams in the northeast. The study would include a review of dam operational constraints and power system requirements (2 days), gathering BESS economic data (1/2 day), analysis (4 days), project report development (3 days), and presentation of results to the stakeholders (1/2 day).

H. Changes in Law or Regulations - § 5.15(e)(1)

There have been no material changes in law or regulations applicable to the information in this study proposal.

I. Goals and Objectives of Other Studies - § 5.15(e)(2)

This study request puts forward new goals and objectives that are not addressed by the methodology of any of the current approved studies.

J. Timing of Request - § 5.15(e)(3)

Adding battery storage to existing hydropower projects is a relatively new topic with examples and studies just becoming available. The enabling factor has been decreases in battery prices in recent years, making the technology an increasingly economic option, along with the growing body of scientific literature documenting the need for better environmental performance at hydropeaking dams.

This study request was not made earlier because the subject of minimum flows constraining Licensee's ability to peak arose after the Draft Downstream Release Alternatives Study Report was filed. This study can be completed in a relatively short amount of time with desktop work only, and if taken into account with the ongoing flow modeling, could inform possible release alternatives and operational parameters that meet the objectives of Licensee and stakeholders, making it an appropriate request at this stage in the relicensing.

K. Changes in Project Proposal - § 5.15(e)(4)

There have been no significant changes in the project proposal.

Document Content(s)

June 11, 2020

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

RE: Comments on Initial Study Reports for Relicensing of Harris Dam (P-2628-065)

As a charter member of the Tallapoosa River Heritage group, I am the official spokesperson for other members who have concerns about our river and its ecosystems. Disturbed by changes that have been taking place on our river, we need to express our opinions, document our information, and preserve our memories of a river that has been vital to our economy for generations.

Some of those who have submitted to interviews go back three generations on the Tallapoosa, whether they are landowners or not. The Tallapoosa River has always been important, and only through our efforts do we believe that it will continue to be.

In fact, the area surrounding the town of Wadley itself (where my family has resided for at least four generations before me) was developed on the west bank of the Tallapoosa River to take the best advantage of the power it could provide (reprint of *LaGrange Reporter*, 14 Aug. 1908, as quoted in *Taproots: An Historical Account of Southern Union State Junior College and Areas in Randolph County*, October 1978). In fact, the main thoroughfare of the town was changed when the location of the river bridge was moved in the 1920s. The location of the bridge and its proximity to the river have always significantly influenced the town's configuration and therefore, its residents.

I am filing these anecdotal records on behalf of the following persons who for one reason or another either do not have an email address or who are intimidated by the submission process.

Dana Chandler
Wayne Cotney
Ronnie Siskey and Nelson Hay
Mike Smith
John Carter Wilkins

Dana Chandler (This is a reprint of an article I wrote for the local newspaper this spring)

Although most Randolph County residents are familiar with the river and its recreational uses, few of us may be aware of its historical and archaeological significance. According to Dana Chandler of Tuskegee University who is an expert on the river and its history, "The Tallapoosa river system was home for Native Americans from Archaic (3000 to 1000 BCE) through Creek (1600 to 1830 CE) time periods. Not only was the river a major transportation route, it also supplied an abundance of aquatic life to the communities. Interestingly, there were over a hundred habitation sites located along the Big and Little Tallapoosa river systems. Furthermore, the natives relied on river mollusks as a staple and even developed a tool used for

opening them and extracting the meat. Although these tools have been found in other locales, they are found in abundance throughout these river systems" (email communication, 2 March 2020).

Chandler adds the Tallapoosa River was once the habitat for more species of mollusks than any other Alabama river. Of course, many of these are now gone because of the inconsistent river flow, among other reasons.

Over 100 fish wiers (traps) were lost when the river was dammed, and now below the dam, the inconsistent release of water has led to other sites being washed away or covered, ones that were used during the prehistoric period.

During the historic period, the river was navigable up to a point at Malone, but now many crossing sites have been decimated. These were all along the river.

The river banks have long been spots to find pottery shards and other Native American artifacts, but those sites are now almost gone, having been covered or washed away (personal communication, 1 March 2020).

We have a responsibility to preserve those sites that still exist and to record our experiences for those who come after us.

Wayne Cotney

Wayne Cotney is another lifelong river who has fished from the Wadley bridge to the head of the backwater since 1954. He has especially enjoyed fishing around Horseshoe Bend and the Frogeye/Bibby's Ferry areas. He tells me that it breaks his heart to know how the river used to be and to see it now and how much it has changed just during his lifetime.

When he was a boy, he and his grandfather Bishop, neither of whom could swim, would use fish baskets. There were always trees to hold on to, and trees that were small when he was a boy are now large trees, and some have even washed away. He remembers fishing around Capp's Island, so named for Capp Hodnett, a local farmer. All that's left are a few trees and a pile of rocks.

He remembers when the bridge was built at Horseshoe Bend and when folks kept boats tied to the banks up and down the river. Fishing was a way of life—and a way of feeding one's family—during those days. Those days are long gone, for several reasons, including but not limited to erosion and "fast water" that comes from up the river.

Wayne knows and uses the 800 number to check the generation schedule. However, he finds the information he obtains from the number to be quite inadequate, even downright incorrect. For instance, he was fishing June 2 and 3, 2020, near Horseshoe Bend. Checking the generation schedule, he learned the turbine would run from the morning of June 2 to 8 PM. According to Wayne, you seldom see big surges at Horseshoe Bend like the ones you see in Wadley, and if you do, it takes about 10 hours to reach the bend. On June 2, the rushing water ran him and his companions out of the water. They are experienced fishermen, and this water seemed to be more than what would have been released through generation.

He has noticed during the past week (June 1-9) that the river banks are washing away, with water at flood stage for several days. It appears that 25-50 feet of bank have eroded since last fall.

There was a sandbar below the Horseshoe Bend bridge that has all but disappeared, but for the past few months, it seems to be reappearing! That is the enigma of the Tallapoosa River and its path. This is just one person's experiences with a river that has almost mythical significance to folks around here.

Ronnie Siskey and Nelson Hay

Ronnie Siskey and his brother-in-law Nelson Hay live within sight of the river and have been fishing its waters for years. Eating a mess of fish for supper that they pulled from the river in the afternoon was not unusual at all for their family. They are familiar with the Tallapoosa River and fish "patterns."

I am directly quoting him: "I haven't been able to fish all year. The water won't let me fish. I can call and get the release schedule, but then I can't go by it because it's not reliable. I used to be able to depend on it being accurate. Not anymore."

Mike Smith

Mike Smith, a resident of Wadley in his early 70s, has been raised and has lived on the river all of his life. He inherited the property that his parents owned on the banks of the Tallapoosa just below the Wadley bridge, and he, too, has seen the banks of the river gradually erode over the years, leaving trees uprooted or barely hanging onto the soil at the edge of the water that alternately rushes and meanders on its way to Horseshoe Bend. He says that his biggest concern is the erosion that is eating away at the bank. He lives within sight of Hutton Creek, which crosses Highway 22 just inside the Wadley city limits. He has watched that creek fill with trees and silt to the point that it no longer flows as freely as it did when he was a boy.

His father, Charles Smith, was a fisherman who caught baskets of fish that were plentiful in the river during the 1950s and 60s. According to Mike, his dad "caught lots of fish. We gave them away, sold them, ate them, froze them. There were always plenty of fish!"

Although Mike never fished as his father did, others were allowed to "put in" at their place for years. However, no one does that anymore, just highlighting the issues that come with the fishing on the river these days. It is not the relaxing activity that it once was.

John Carter Wilkins

John Carter Wilkins is yet another lifelong Wadley resident who has lived on the river over half his life. He has, of course, witnessed the erosion issues, but his concern is the mostly for the wildlife that no longer exists on his property.

In the past, he says that he could catch a mess of yellow cats, but now he is lucky if he catches one. Bullfrogs used to be so plentiful that he could frog gig at night, but not he might see one frog if he goes out at night.

The land and the wildlife are no longer what they were. To him, that is the greatest shame of all.

Document Content(s)

STATE OF ALABAMA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
WILDLIFE AND FRESHWATER FISHERIES DIVISION

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P. O. Box 301456
Montgomery, AL 36130-1456
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June 11, 2020

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

RE: Comments on the Harris Project Initial Study Report (ISR) including Project Lands Evaluation, Operating Curve Change Feasibility, Downstream Release Alternatives Study, Water Quality Study, Erosion and Sedimentation Study, Threatened and Endangered Species Desktop Assessment, Cultural Resources Programmatic Agreement and Historic Properties, Management Plan Study, Area of Potential Effects (APE) and Harris Relicensing Initial Study Report Meeting April 28, 2020 for the R. L. Harris Hydroelectric Project (FERC No. 2628).

Dear Ms. Bose:

The Alabama Department of Natural Resources (ADCNR) Division of Wildlife and Freshwater Fisheries (WFF), has reviewed the filed Harris Project Initial Study Report (ISR) in regards to the relicensing of R.L. Harris Hydroelectric Project No. 2628 and submits the following comments and recommendations for your consideration:

Initial Study Report (ISR)

- On page 11, section 4.1 of Initial Study Report, "*i.e.*" ("that is") should be changed to "*e.g.*" ("for example"). The alternative/modified Green Plan operation downstream release alternative will be evaluated as part of Phase 2. Results from the other three scenarios as well as from the Aquatic Resources Study are needed to design the alternative to be studied. Downstream Aquatic Habitat Study and Recreational Evaluation Study results should be included in footnotes in order to fully evaluate and recommend an alternative Green Plan to be modeled and evaluated as a downstream release alternative. Without the ability to fully evaluate the Aquatic Resources Study, Downstream Aquatic Habitat Study and Recreational Evaluation Study results at this time, ADCNR recommends multiple base flow scenarios calculated from available aquatic inflow and base flow records and guidelines representative for the tailwaters downstream to the Horseshoe Bend with Pre-Green Plan, Green Plan and Modified Green Plan be modeled during the evaluation process. All operational changes to downstream releases should evaluate methods for how these flows could be provided while maintaining state dissolved oxygen guidelines and a natural temperature regime, at all times for the sustainable benefit of aquatic resources.

- On page 12, section 4.2 of Initial Study Report, remove the descriptive words "slight" and "worse" when detailing if alternatives will increase or decrease average annual economic costs to Alabama Power customers and provide estimated amount ranges for each alternative. If, "there are currently too many unknowns at this time to generate accurate and reliable Hydro Budget results", please explain how an assumption of whether it will be "same" or "worse" can be made. For comparisons of alternatives, additional details are recommended to provide how a Pre-Green Plan peaking operation with a 150 cfs continuous minimum flow regardless of generation or no generation to produce the minimum flow would not be a significant economic gain, if not evaluating capital and O&M costs into the equation.

- On page 15, section 5.2 of Initial Study Report, remove "well' in statement, "showed dissolved oxygen levels were well above 5 mg/L during each of their sampling events."

- On page 15, section 5.2 of Initial Study Report, additional data, evidence or other alternatives should be provided to make the statement that "The low dissolved oxygen events in 2017 may be attributed to conditions in the Harris Reservoir that were impacted by severe drought in the summer and fall of 2016, where inflows to the lake were at historic lows." On page 17, Figure 3-7 of the Water Quality Study does not indicate that temperature stratification occurred differently in 2017 verses 2018 or 2019. Year 2017 data, on page 37, Figure 4-4, and downstream water quality data on page 46, Figure 6-1 of the Water Quality Study disputes the theory that conditions were caused by previous year conditions. Inflows were above average during 2017, which means discharge was higher. This is another reason low dissolved oxygen could have been more pronounced in 2017. This same scenario has been observed in Lake Martin, where higher spring/summer rainfall leads to increased discharge, which leads to poorer water quality below the thermocline (Sammons and Glover, 2013). If a dam is drawing from the hypolimnion under these conditions, it can lead to a discharge of lower oxygenated water during a high precipitation spring/summer. In addition to evaluating potential causes of the 2017 low dissolved oxygen events, changes and improvements that can be made to detect, adjust and improve operations to prevent another 2017 event from occurring again should be considered and evaluated for the sustained benefit of downstream aquatic resources.

- On page 17, section 6.1 of Initial Study Report delete "likely" and insert, "potential" prior to cause(s).

- On page 18, section 6.2.1 of Initial Study Report, include additional details of how causes of erosion were determined. Methods primarily cover how sites of erosion were identified, not caused.

- On page 18, section 6.2.1 of Initial Study Report, verify and confirm accuracy of statement "Twenty-five percent of the Little Tallapoosa River basin has been converted to hay/pasture fields (MRLC 2019)". Table 2-3, of the Erosion and Sedimentation Study, indicate a net loss of Hay/Pasture in the Little Tallapoosa River Basin of -8,815.1 acres from 2001 to 2016. These two statements appear to be contradictory.

- On page 19, section 6.2.2 of Initial Study Report, it states "Notably, only one area scored as impaired to non-functional (located on the right bank between river mile [RM] 16.3 to 16.9)." On page 33, Figure 21 of Appendix E Downstream Bank Stability Study Report of the Erosion and Sedimentation Study, a red section is downstream of No Business Creek within the 3.5-5 range appears present. Explain and verify that this area is not considered a second impaired site.

- On page 19, section 6.2.2 of Initial Study Report, "primarily caused" should be changed to "potentially caused". Remove "natural riverine processes" and replace with "regulated riverine processes" or define how natural riverine processes are defined in this context and occur below a controlled and regulated tailrace.

- On page 19 section 6.2.2. of Initial Study Report. Providing the dissolved oxygen percent of measurements greater than 5 milligrams per liter is correct but misleading in regards to aquatic resources protection. It is important to note when presenting this data that it only takes a single incident of depleted dissolved oxygen to cause an aquatic species kill event. A caveat or footnote is recommended to address this fact.

- On page 19, section 6.2.2 of Initial Study Report, it states, "Questions have also been raised regarding potential effects the Harris Project may have on other aquatic fauna within the Project Area, including macroinvertebrates such as mollusks and crayfish. Alabama Power is investigating the effects of the Harris

Project on these aquatic species and is performing an assessment of the Harris Project's potential effects on species mobility and population health." There are currently records of mussel species Under Review for federal listing with substantial 90-day findings that occur and occurred historically in the Tallapoosa River and its tributaries. Alabama Spike (*Elliptio arca*) and Delicate Spike (*Ellipto arctata*) are currently state protected species and Under Review by United States Fish and Wildlife Service (USFWS) with a substantial 90-day finding. Threatened and Endangered Species study plan states in the methods that additional species of concern may be added at the request of USFWS and/or ADCNR if determined to be appropriate. Please provide details on what specific mollusks and crayfish species will be evaluated. A list of state protected species currently being evaluated during the relicensing process is recommended.

- Page 27, section 9.1 of Initial Study Report, there are additional state protected species that are not T&E. The final report may not address all state protected species and a statement should be included to clarify. The Initial Study Report plan used the term "and/or".

Draft Phase 1 Project Lands Evaluation Study Report

- Appendix B includes Figure of Maps and Supporting Information of Proposed Changes of the Project Lands Evaluation Study Report. These maps indicate there are several recreational properties which are being re-classified away from recreation (net loss of 600 acres- page 14, Table 6-1). In addition to the acreages provided, it would be beneficial to provide and understand the amount of linear feet of shoreline for each parcel being proposed for addition, re-classification or removal. Undisturbed natural shorelines and shorelines designated for recreational use benefit wildlife and aquatic resources and also provide recreational opportunities for anglers and hunters. Impacts to shoreline habitat in Lake Harris can negatively impact aquatic, semi-aquatic, and terrestrial species. Studies have shown that undeveloped shoreline areas provide the most suitable habitat for maintaining abundance, diversity, and species richness of aquatic, semi-aquatic, and terrestrial species. We recommend that natural vegetated shorelines remain undisturbed as much as possible when evaluating land classifications and future shoreline land use. When evaluating classification changes, linear lake front footage would be a useful metric to provide. ADCNR would like to ensure a suitable site(s) is(are) identified and reserved for future construction of an appropriately sized boating access facility(ies). Future boating demand on Lake Harris is currently unknown for the entire duration of the license, therefore ADCNR continues to request consultation with Alabama Power in the selection of future recreational sites to safeguard they are located in suitable areas for anglers and boaters. The sites need to be large enough to suit any future demand of boaters and anglers and the sites need to meet the engineering requirements for an appropriately sized facility. We recommend any suitable identified property continue to be classified as recreational. The distribution of public boat ramps in the lake should be fully evaluated when considering reclassifying recreation zoned areas. In areas of the lake with few public boating access points or high boat ramp usage, there should be recreational zoned properties for future boat ramp additions available to meet angler demand.

- Appendix B, Figures R1-R6 of the Project Lands Evaluation Study Report, indicates that these acreages are not suitable for recreation due to their location within areas of the lake with limited demand for public recreation opportunities. ADCNR requests the opportunity to evaluate the results from the Recreation Evaluation Study prior to this determination for these zoning reclassifications.

- On page 9, of the Project Lands Evaluation Study Report, the third bullet named Project Operations (formerly titled Prohibited Access) states "For security, the allowable uses in this classification are primarily restricted to Alabama Power personnel; however, in some cases, such as guided public tours, limited public access is available." ADCNR recommends that bank fishing be included in the "some cases" exemptions statement for these areas. Canoe or kayak access points should also be evaluated in these areas during the relicensing process, since they are currently nonexistent.

Draft Operating Curve Change Feasibility Analysis Phase1 Report

- On page 6, section 2.1.1.5 Lower Tallapoosa River of the Operation Curve Change Feasibility Analysis Study discusses downstream gages. Include years of discharge and stage data for these gages, similar to previous gages years of discharge and stage data discussed and included in the document.

- On pages 45-50, Figures 5-7 through 5-12 of the Operation Curve Change Feasibility Analysis Study visually indicate inundation boundaries for the baseline of four winter pool alternatives. Include a Table with calculated totals of inundated acreages for the baseline and four winter pool increase alternatives to assist with the quantitative evaluation of inundation effects downstream of the dam.

Draft Downstream Release Alternatives Phase 1 Report

- The Downstream Release Alternatives Study as is, presents the results for three downstream release alternatives: Pre-Green Plan operation, Green Plan operation, and Pre-Green Plan operation with a 150 cfs continuous minimum flow. Throughout the document the "Pre-Green Plan operation with a 150 cfs continuous minimum flow", is often referenced as "continuous minimum flow of 150 cfs". When referencing this downstream release alternative in the document it would be helpful to use the full "Pre-Green Plan operation with a 150 cfs continuous minimum flow" to clarify and fully identify the alternative. If a modified Green Plan, details pending, is evaluated with a continuous minimum flow, the addition will assist in differentiating the alternatives.

- A fourth Modified Green Plan downstream release alternative was included to be evaluated in the initial Study Plan for the Downstream Release Alternatives Study. ADCNR maintains its recommendation for a fourth alternative Modified Green Plan be fully evaluated. Details and design of a Modified Green Plan alternative are pending results from the Aquatic Resources Study. For a complete Downstream Release Alternative Study comparing four release alternatives, the Modified Green Plan alternative should be completed and included in this study or Phase 2. ADCNR requests the opportunity to provide specific recommendations for the Modified Green Plan alternative after assessing all of the planned study reports. ADCNR has consistently stated and provided published peer reviewed references that support recommendations for downstream flows to mimic a natural flow regime with an adaptive management of flows that follows state dissolved oxygen guidelines and provides natural temperature regimes, at all times for the sustained long term benefit and conservation of aquatic species (See *ADCNR*, P-2628-005 FERC ¶ 20181002-5006).

- On page 1, section 1.0 of the Downstream Release Alternatives Study, replace "However, some stakeholders noted that the temperature of the turbine releases could have potential effects on aquatic resources in the Tallapoosa River below Harris Dam." with "However, some stakeholders noted that the temperature of the turbine releases has documented negative impacts on aquatic resources in the Tallapoosa River below Harris Dam." (See *ADCNR*, P-2628-005 FERC ¶ 20181002-5006).

- On page 2, section 1.1, of the Downstream Release Alternatives Study, change "*i.e.*" to "*e.g.*" It should be "for example" not "that is" if an Aquatic Resources Study is required to evaluate and design the alternative to be studied as stated in footnote of the page. Downstream Aquatic Habitat Study and Recreational Evaluation Study results should be considered as inclusions in the footnote as prerequisites to fully evaluate and recommend an alternative Modified Green Plan to be modeled and evaluated as a downstream release alternative.

- On page 21, section 4.3.3 Model Flow Data of the Downstream Release Alternatives Study, ADCNR recommends re-stating that the Modified Green Plan alternative is not included in this model section pending results from additional studies and will be evaluated in Phase 2. This section states why 2001 data was used and presented but does not specify why the date range of 1/1/01-1/31/01 was specifically selected from the entire year data. ADCNR recommends including why this month was selected and providing additional figures similar to Fig. 4-3. showing a months' worth of data at four 1-month intervals covering spring, summer and fall sample portions of hydrographs to fully illustrate model flow data throughout the year.

- On page 25, section 5.2 of the Downstream Release Alternatives Study, remove the descriptive words "slight" and "worse" when detailing if alternatives will increase or decrease average annual economic costs to Alabama Power customers and provide estimated amount ranges for each alternative. If, "there are currently too many unknowns at this time to generate accurate and reliable Hydro Budget results", please explain how an assumption of whether it will be "same" or "worse" can be made. For comparisons of alternatives,

additional details should be provided describing how a Pre-Green Plan peaking operation with a 150 cfs continuous minimum flow, regardless of generation or no generation to produce the minimum flow, would not be a significant economic gain, if not evaluating capital and O&M costs into the equation.

- On page 27, section 6.0 Conclusions of the Downstream Release Alternatives Study, a space between "results indicate" should be included.

Draft Water Quality Study Report

- On pages ii-iv., Table of Contents, of the Water Quality Study, some of the page numbering does not coincide with the document contents. For example, Lake Levels and Hydrology page 7 of Table of Contents is on page 8.

- On page 3, section 1.1, of the Water Quality Study, after "A summary of data sources for this report is provided in" a large space creates and extra page that appears to be unnecessary and should be removed.

- On page 8, section 2.0, of the Water Quality Study "October of 2107" should be changed to 2017.

- On page 9, Figure 2-2 of the Water Quality Study, specify if the 1987-2016 data is a monthly average or long-term average in the figure key or label.

- On page 22, Table 3-2 of the Water Quality Study, include minimum and maximum ranges of data to this Table, if available.

- On page 25, Figure 4-1 of the Water Quality Study, provide major tributary names and periodic river mile markings to aid in location descriptions.

- On page 27, Table 4-3 of the Water Quality Study, include minimum and maximum ranges of data to this Table, if available.

- On page 39, of the Water Quality Study, "Error! Reference source not found?" should be removed or corrected.

- On page 42, Table 4-11 of the Water Quality Study, if available, separate and provide this data into Pre-Green Plan and Post-Green Plan implementation year groupings to further examine if operational differences affect water quality.

- On page 46, section 6.2 of the Water Quality Study, additional data, evidence or other alternatives should be provided to make the statement that "The low dissolved oxygen events in 2017 may be attributed to conditions in Harris Reservoir that were impacted by severe drought in the summer and fall of 2016, where inflows to the lake were at historic lows (Figure 6-1)" On page 17, Figure 3-7 of the Water Quality Study does not indicate that temperature stratification occurred differently in 2017 versus 2018 or 2019. Year 2017 data, on page 37, Figure 4-4, and downstream water quality data on page 46, Figure 6-1 of the Water Quality Study disputes the theory that conditions were caused by previous year conditions. Inflows were above average during 2017, which means discharge was higher. This is another reason low dissolved oxygen could have been more pronounced in 2017. This same scenario has been observed in Lake Martin, where higher spring/summer rainfall leads to increased discharge, which leads to poorer water quality below the thermocline (Sammons and Glover 2013). If a dam is drawing from the hypolimnion under these conditions, it can lead to a discharge of lower oxygenated water during a high precipitation spring/summer. In addition to evaluating potential causes of the 2017 low dissolved oxygen events, changes and improvements that can be made to detect, adjust and improve operations to prevent another 2017 event from occurring again should be considered and evaluated for the sustained benefit of downstream aquatic resources.

Draft Erosion and Sedimentation Study Report

- Throughout the Erosion and Sedimentation Study when referencing "cause of erosion" change to "potential cause(s) of erosion/sedimentation." On page 2, section 2.0 Goals and Objectives in the Erosion and Sedimentation Study Plan it states, "The goals of this study are to identify any problematic erosion sites and sedimentation areas and determine the likely causes." "Once areas are identified, Alabama Power will perform assessments and collect additional information, as necessary, to describe and categorize each area according to its severity and potential cause(s)."

- On page 6, section 2.0 Lake Harris, 2.1 Methods in the Erosion and Sedimentation Study, replace, "determine the cause of erosion:" with "determine areas of erosion and potential cause(s):" For the potential cause(s) categories considered, provide a definition of each and additional details into the methods utilized to characterize how each cause was determined and differentiated. The methods described appear to detail how areas of erosion were identified but do not detail how potential cause(s) were determined. A reference to the Erosion and Sedimentation Study Plan Study Plan methods or inclusion of section 4.1 study plan methods should be provided.

- On page 12, section 2.2 Results, 2.2.1 Erosion Survey in the Erosion and Sedimentation Study insert "potential cause(s)" into "Each site was photographed and examined to determine the cause of erosion."

- On page 20, section, of the Erosion and Sedimentation Study, verify and confirm accuracy that Table 2-3 indicates a net loss of Hay/Pasture in the Little Tallapoosa River Basin of -8,815.1 acres from 2001 to 2016. Text indicates a "Twenty-five percent of the Little Tallapoosa River basin has been converted to hay/pasture fields (MRLC 2019)" These two statements appear to be contradictory.

- On page 24, section 3.2 Results of the Erosion and Sedimentation Study, change "primarily caused" to "potentially caused". Remove "natural riverine processes" and replace with "regulated riverine processes" or define how natural riverine processes are defined in this context and occur below a controlled and regulated tailrace.

- On page 25, Table 3-2 of the Erosion and Sedimentation Study, add score ranges (minimum and maximum scores) in addition to the means. If previous sites E22 and E23 are included in this Table, provide an asterisk and footnote specifying which ones they are. Include in discussion section how this scoring method compared to the method used at sites E22 and E23.

- On page 26, Figure 3-1 of the Erosion and Sedimentation Study, include site numbers from Table 3-2 into this map or provide incremental river mile markers.

- On page, Table 4-1 of the Erosion and Sedimentation Study indicates a 592.1 acreage increase in deciduous forest. Deciduous forest stream buffers have been shown to reduce nitrogen, phosphorous and sedimentation from surface water runoff into streams, lakes and estuaries. This could be included in the discussion section as a positive observed land use trend in the area (Klapproth and Johnson 2009; Roy *et al.* 2006).

- On page 31, Section 5.0 Discussion and Conclusions of the Erosion and Sedimentation Study, provide additional information on definitions and methodology in how cause(s) were determined before the conclusion that erosion was a result of anthropogenic and/or natural processes independent of project operations. As is, the use of the word "potential" should be included. Provide the current definition of "project operations" for this study and include it prior to other document "project operations" statements. If referring to "fluctuations" from project operations, this should be clearly stated throughout Erosion and Sedimentation Study. Among Study plans there appears to be variations in the provided definition of "Project operations" and "project related impacts". For example, on page 4 the Erosion and Sedimentation Study Plan states "Project operations" as "(*i.e.*, water level fluctuations or construction/maintenance activities on/at Project facilities or lands)", but on page 2 of the Threatened and Endangered Species Study Plan it states "project related impacts" as "(*i.e.*, lake fluctuations, downstream flows, recreation and shoreline management activities, timber management, etc.)". Providing consistency of these definitions among studies would be beneficial during the relicensing evaluation process. In addition, including "etc." which indicates that "further, similar items are included" after using "*i.e.*" or "that is" is a contradictory use of the terms.

- On page 31, section 5.0 Discussion and Conclusions of the Erosion and Sedimentation Study, replace "extremely small" with "relatively small".

- On page 31, section 5.0 Discussion and Conclusions of the Erosion and Sedimentation Study, insert "potentially" prior to "affected"

- On page 31, section 5.0 Discussion and Conclusions of the Erosion and Sedimentation Study, insert "potentially" prior to "clear-cut". Reword sentence to read: "The observed erosion at the these sites is the potential result of adjacent land use and clearing of riparian plant cover destabilizing soils along the affected banks, although erosion at these sites may have been initially caused or exacerbated as result of altered flow releases from Harris Dam."

- On page 31, section 5.0 Discussion and Conclusions of the Erosion and Sedimentation Study, insert "in the reservoir" after decrease in "Sedimentation in Lake Harris is most pronounced in the Little Tallapoosa River arm where sediment transported from upstream settles out of the water column as water velocities decrease" statement.

- In Appendix E Downstream Bank Stability Study Report of the Erosion and Sedimentation Study, include periodic river mile markers and corresponding segment numbers in figures of the study.

- On page 33, Figure 21 of Appendix E Downstream Bank Stability Study Report of the Erosion and Sedimentation Study, a red section in downstream of No Business Creek within the 3.5-5 range appears present. In results or discussion explain how this area is not included as a second impaired site.

- On page 34, Table 3 of Appendix E Downstream Bank Stability Study Report of the Erosion and Sedimentation Study, if available, include ranges (minimum and maximum scores) with segment data.

- On page 43, Conclusions section of Appendix E Downstream Bank Stability Study Report of the Erosion and Sedimentation Study include a definition and discussion about the potential for head cutting in tributaries due to main river channel operations. Head cutting is a process by which the upstream portion of a stream channel becomes destabilized and erodes progressively in an upstream direction. Accelerated velocities can lead to an increase in head cutting upstream from affected areas (Annear *et al*. 2002).

Draft Threatened and Endangered Species Desktop Assessment

- Throughout the Threatened and Endangered Species Desktop Assessment, capitalize species common names. When a species is first used in the document, include the scientific name in parentheses. The common name can then be used in the remaining sections of the document.

- Range Figures included in the Threatened and Endangered Species Desktop Assessment illustrating aquatic species habitat ranges, include the tributaries and streams names on the maps.

- On page 6, Table 1-1 of the Threatened and Endangered Species Desktop Assessment in Scientific names column change "*Villosa trabalis*" to "*Venustaconcha trabalis*", "*Quadrula cylindrica*" to "*Theliderma cylindrica*". Correct error for scientific name of Shiny Pigtoe to "*Fusconaia cor*" (Williams *et al*. 2017).

- On page 6, Table 1-1 of the Threatened and Endangered Species Desktop Assessment all of the species listed in this table are now State Protected, see Alabama Regulations relating to game, fish and furbearing animals. 2019-2020. Alabama Department of Conservation and Natural Resources, with the exception of the plant species listed, Little Amphianthus, White Fringeless Orchid, Price's Potato-bean and Morefield's Leather Flower.

- On page 6, Table 1-1 of the Threatened and Endangered Species Desktop Assessment change column heading "Occurrence" column to "Recent Documented Occurrence in Harris Project Boundary". Within the

document "Recent" should be defined, for example, "In this report any documented occurrence within the past 25 years will be classified as a Recent Documented Occurrence".

- On page 6, Table 1-1 of the Threatened and Endangered Species Desktop Assessment, Williams *et al.* (2008) is cited but this resource is not utilized anywhere else in the document. Recommend including the most up to date resources in the following species descriptions.

- On Page 9, 3.2 Palezone Shiner section of the Threatened and Endangered Species Desktop Assessment if an updated survey is proposed for this species suggest including and discussing or note that it will be included in an additional Phase 2 study report.

- On page 10, 3.4 Finelined Pocketbook section of the Threatened and Endangered Species Desktop Assessment, include "primarily" in the statement, "this mussel lives in large to small streams in habitats "primarily" above the fall line." See Williams *et al.* 2008 distribution map and distribution descriptions.

- On page 10, 3.4 Finelined Pocketbook section of the Threatened and Endangered Species Desktop Assessment, include, if any, the last mussel survey completed in the Tallapoosa Harris Tailrace and tributaries. Include a statement indicating if a mollusk tailrace study has been considered in the study plan development process and why it was not deemed necessary for this species.

- On page 10, 3.4 Finelined Pocketbook section of the Threatened and Endangered Species Desktop Assessment, a statement should be included notifying that ADCNR and USFWS are currently reintroducing the Finelined Pocketbook into suitable historical habitats within the state (USFWS 2019).

- On page 10, 3.4 Finelined Pocketbook section of the Threatened and Endangered Species Desktop Assessment, the reasons for decline could be updated and improved by summarizing statements from USFWS (2019), Nine Mobile River Basin mussels (Finelined Pocketbook (*Hamiota (=Lampsilis) altilis*), Orangenacre Mucket (*Hamiota (=Lampsilis) perovalis*), Alabama Moccasinshell, (*Medionidus acutissimus*), Coosa Moccasinshell (*Medionidus parvulus*), Southern Clubshell (*Pleurobema decisum*), Dark Pigtoe *(Pleurobema furvum*), Southern Pigtoe (*Pleurobema georgianum*), Ovate Clubshell (*Pleurobema perovatum*), Triangular Kidneyshell (*Ptychobranchus greenii*)) 5-year review. This review states that suitable habitats and water quality, free of excessive sedimentation and other pollutants, are required for Finelined Pocketbook. The primary cause of curtailment of range and fragmentation of habitat for these mussel species has been contributed to the historic construction of dams and impoundment of large reaches of major river channels (Federal Register 58 FR 14330). Although most of these actions took place in the past, the impacted conditions and habitat continue to affect the species. In recent years, some improvements have been made to improve riverine conditions. For example, flow improvements have been made below Weiss Dam on the Coosa River that benefit existing populations of Southern Clubshell. Watershed-specific threats continue to negatively impact the species. These threats include: 1) coal mining activities 2) oil and gas exploration 3) water withdrawal 4) hypolimnetic discharges 5) poor water quality due to insufficient releases from dams 6) instream aggregate mining 7) navigation channel maintenance activities (8) agricultural practices that degrade water quality by increasing nutrients, herbicide/surfactant compounds, and hormones in surface waters; (9) hydropeaking dams that alter downstream flow conditions, water temperatures, and dissolved oxygen (10) increasing urban development that degrades water quality and stream geomorphology; and (11) climate change, which is expected to result in more frequent and extreme dry and wet years in the Southeast over the next century.

- On page 10, 3.4 Finelined Pocketbook section of the Threatened and Endangered Species Desktop Assessment, change statement "No populations were identified within the Project Boundary at Lake Harris, but future surveys have been proposed by Alabama Power." to "To date, no populations were identified within the Project Boundary at Lake Harris, but surveys focused on the 3.75 mile stretch of the Tallapoosa River where critical habitat is known to occur from the County 36 bridge to a shoal below the Highway 431 bridge are currently being conducted by Alabama Power and USFWS."

- On page 11, 3.5 Alabama Lampmussel section of the Threatened and Endangered Species Desktop Assessment, a statement should be included notifying that ADCNR and USFWS is currently reintroducing the Alabama Lampmussel into suitable historical habitats within the state (USFWS 2012).

- On page 11, 3.5 Alabama Lampmussel section of the Threatened and Endangered Species Desktop Assessment, reasons for imperilment should be updated and improved summarizing statements from USFWS released a Five-Year Review for the species (USFWS 2012).

- On page 11, 3.5 Alabama Lampmussel section of the Threatened and Endangered Species Desktop Assessment, include that in laboratory trials Alabama Lampmussel glochidia have been found to utilize Rock Bass (*Ambloplites rupestris*), Green Sunfish (*Lepomis cyanellus*), Bluegill (*Lepomis macrochirus*), Smallmouth Bass (*Micropterus dolomieu*), Spotted Bass (*Micropterus punctulatus*), Largemouth Bass (*Micropterus salmoides*), and Redeye Bass (*Micropterus coosae*) as host fish and that Banded Sculpin (Cottus carolinae) appear to be marginal hosts (Williams et. Al. 2008).

- On page 12, 3.6 Cumberland Bean section of the Threatened and Endangered Species Desktop Assessment, a statement should be included notifying that ADCNR and USFWS is currently reintroducing the Cumberland Bean into suitable historical habitats within the state (USFWS 2020).

- On page 12, 3.6 Cumberland Bean section of the Threatened and Endangered Species Desktop Assessment, reasons for imperilment should be updated and improved summarizing statements from USFWS released a Five-Year Review for the species (USFWS 2020).

- On page 12, 3.7 Fine-Rayed Pigtoe section of the Threatened and Endangered Species Desktop Assessment, reasons for species decline should be updated and improved summarizing statements from USFWS released a Five-Year Review for the species (USFWS 2013b).

- On page 13, 3.8 Pale Lilliput section of the Threatened and Endangered Species Desktop Assessment, a statement should be included notifying that ADCNR and USFWS is currently reintroducing the Pale Lilliput Mussel into suitable historical habitats within the state (USFWS 2011).

- On page 13, 3.8 Pale Lilliput section of the Threatened and Endangered Species Desktop Assessment, reasons for imperilment should be updated and improved summarizing statements from USFWS released a Five-Year Review for the species (USFWS 2011).

- On page 13, 3.8 Pale Lilliput section of the Threatened and Endangered Species Desktop Assessment, include, in laboratory trials by ADCNR, Pale Lilliput glochidia have been found to utilize Northern Studfish (*Fundulus catenatus*), Blackspotted Topminnow (*Fundulus olivaceus*) and Blackstripe Topminnow (*Fundulus notatus*) as primary hosts. (Fobian *et al.* 2015)

- On page 13, 3.9 Rabbitsfoot section of the Threatened and Endangered Species Desktop Assessment, a statement should be included notifying that ADCNR and USFWS is currently reintroducing the Rabbitsfoot into suitable historical habitats statewide.

- On page 13, 3.9 Rabbitsfoot section of the Threatened and Endangered Species Desktop Assessment, include, suitable fish hosts for Rabbitsfoot populations west of the Mississippi River include Blacktail Shiner (*Cyprinella venusta*) from the Black and Little rivers and Cardinal Shiner (*Luxilus cardinalis*), Red Shiner (*Cyprinella lutrensis*), Spotfin Shiner (*Cyprinella spiloptera*), and Bluntface Shiner (*Cyprinella camura*) from the Spring River, but host suitability information is lacking for most of the eastern range (Fobian 2007). A host study by ADCNR in 2011, found Scarlet Shiner (*Lythrurus fasciolari*), Whitetail Shiner (*Cyprinella galactura*) and Striped Shiner (*Luxilus chrysocephalus*) to be sympatric hosts with Rabbitsfoot from Paint Rock River, AL. Marginal minnow hosts from studies have included Central Stoneroller (*Campostoma anomalum*), Emerald Shiner (*Notropis atherinoides*), Rosyface Shiner (*Notropis rubellus*), Bullhead Minnow (*Pimephales vigilax*) and Rainbow Darter (*Etheostoma caeruleum*), but not in all stream populations tested (Fobian 2007, Watters *et al.* 2005).

- On page 14, 3.10 Snuffbox section of the Threatened and Endangered Species Desktop Assessment, update and include that in 2019, USFWS released a Five-Year Review for the species (USFWS 2019b). Reasons for imperilment could be added and improved summarizing statements from this document as well.

- On page 15, 3.11 Shiny Pigtoe Mussel section of the Threatened and Endangered Species Desktop Assessment, reasons for imperilment should be updated and improved summarizing statements from USFWS released a Five-Year Review for the species (USFWS 2013c).

- On page 16, 3.12 Southern Pigtoe section of the Threatened and Endangered Species Desktop Assessment, change "finelined pocketbook mussel" to "Southern Pigtoe".

- On page 16, 3.12 Southern Pigtoe section of the Threatened and Endangered Species Desktop Assessment, the reasons for decline could be updated and improved by summarizing statements from USFWS (2019), Nine Mobile River Basin mussels (Finelined Pocketbook (*Hamiota (=Lampsilis) altilis*), Orangenacre Mucket (*Hamiota (=Lampsilis) perovalis*), Alabama Moccasinshell, (*Medionidus acutissimus*), Coosa Moccasinshell (*Medionidus parvulus*), Southern Clubshell (*Pleurobema decisum*), Dark Pigtoe *(Pleurobema furvum*), Southern Pigtoe (*Pleurobema georgianum*), Ovate Clubshell (*Pleurobema perovatum*), Triangular Kidneyshell (*Ptychobranchus greenii*)) 5-year review. This review states that suitable habitats and water quality, free of excessive sedimentation and other pollutants, are required for Southern Pigtoe. The primary cause of curtailment of range and fragmentation of habitat for mussel species has been contributed to the historic construction of dams and impoundment of large reaches of major river channels (Federal Register 58 FR 14330). Although most of these actions took place in the past, the impacted conditions and habitat continue to affect the species. In recent years, some improvements have been made to improve riverine conditions. For example, flow improvements have been made below Weiss Dam on the Coosa River that benefit existing populations of Southern Clubshell. Watershed-specific threats continue to negatively impact the species. These threats include: 1) coal mining activities 2) oil and gas exploration 3) water withdrawal 4) hypolimnetic discharges 5) poor water quality due to insufficient releases from dams 6) instream aggregate mining 7) navigation channel maintenance activities (8) agricultural practices that degrade water quality by increasing nutrients, herbicide/surfactant compounds, and hormones in surface waters; (9) hydropeaking dams that alter downstream flow conditions, water temperatures, and dissolved oxygen (10) increasing urban development that degrades water quality and stream geomorphology; and (11) climate change, which is expected to result in more frequent and extreme dry and wet years in the Southeast over the next century.

- On page 17, 3.13 Slabside Pearlymussel section of the Threatened and Endangered Species Desktop Assessment, include that in 2013, USFWS designated critical habitat for the species (Federal Register 78:59555-59620). A statement similar to the Rabbitsfoot section could be included for consistency.

- On page 25, Discussion and Conclusions: section of the Threatened and Endangered Species Desktop Assessment, include a caveat statement or footnote reiterating that this is a desktop assessment and that to be certain of species occurrence, surveys should be conducted by qualified biologists to determine if a sensitive species occurs within a project area. Species not listed for a specific area does not imply that they do not occur there, only that their occurrence there is as yet unrecorded by state or federal agencies. This assessment is currently under review and reflects only our current understanding of species distributions.

- On page 25, Discussion and Conclusions: section of the Threatened and Endangered Species Desktop Assessment, change "…extant populations of 20 federal and state protected T&E species (Appendix B)." to "….extant populations of 20 federally T&E species of which 16 are state protected (Appendix B)."

- Appendix B Species Habitat Range Maps of the Threatened and Endangered Species Desktop Assessment, all figures with "extant population" shown. change to "Recent Documented Occurrence". In addition, make sure "Current Range" and "Documented Historic Range" terminology is defined in the assessment. As is, all Figure Titles in Appendix B should have "Current" inserted before Habitat Range and after the Species name.

- Figure 3.12-1 Appendix B of the Threatened and Endangered Species Desktop Assessment, Southern Pigtoe does not occur in the Tennessee River system. It does not have critical habitat in the Paint Rock River system. This map appears to be inaccurate and should be deleted.

- Figure 3.13-1 Appendix B of the Threatened and Endangered Species Desktop Assessment, The Paint Rock River has designated critical habitat for this species. See Federal Register 78:59555-59620 for critical habitat details that should be included.

Cultural Resources Programmatic Agreement and Historic Properties, Management Plan Study

- ADCNR has no comments or recommendations at this time.

Area of Potential Effects (APE)

- ADCNR has no comments or recommendations at this time.

Harris Relicensing Initial Study Report Meeting April 28, 2020

- Recreational Evaluation Study discussion. Recreation use data was collected at recreational facilities from March to December 2019, however questionnaires were only filled out from May to December 2019. The Questionnaires missed an active time for anglers. ADCNR is concerned that recreational anglers may not be adequately represented in this data. ADCNR would like to make sure that anglers are adequately represented in the survey since it asks specific questions about specific facilities.

- Downstream Release Alternatives Study discussion. A fourth alternative is proposed in the study plan. It was to be a Modified Green Plan. Aquatic Resources Study is required to evaluate and design the alternative to be studied as stated in the footnotes.

- Erosion and Sedimentation Study discussion. ADCNR recommends including the APC response statement "Most of the erosion issues downstream are not due exclusively to operations. For example, areas where trees and vegetation are being cleared are not due exclusively to operations, but water fluctuations could exacerbate erosion." into the discussion section of the study.

- Threatened and Endangered Species Desktop Assessment discussion. APC stated that "No listed species have been documented in the Tallapoosa River below the Harris Dam." Should be changed to "No listed species have recently been documented in the Tallapoosa River between Harris Dam and Lake Martin." The Documented Historic Range for Finelined Pocketbook includes the Tallapoosa River.

Thank you for the opportunity to comment on the R.L. Harris Hydroelectric Project relicensing filed Harris Project Initial Study Report (ISR). We look forward to continuing our cooperative efforts with the Federal Energy Regulatory Commission, Alabama Power, and other stakeholders during this process.

If you have any questions regarding these comments, please contact me at (334-353-7484) or Todd.Fobian@dcnr.alabama.gov.

Sincerely,

Todd Fobian

Environmental Affairs Supervisor

References:

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Document Content(s)

R. L. HARRIS PROJECT

EROSION & SEDIMENTATION STUDY SITE EVALUATION FORM

Water Body: TALLAPOOSA River Date: 6-9-2020

Field Personnel: _____ Photo No.: _____

1. Erosion Area Location:
   ID: Joe Meigs Lat: 33 9min 29secN Long: 85°34min 29secW Time: 7:00 PM

2. Position in Landscape:
   - ☐ Levee/Embankment
   - ☑ Steep bank
   - ☐ Floodplain Terrace
   - ☐ Main Channel/Main Body of Lake
   - ☐ Cove
   - ☐ Other: River Bank

3. Physical Properties:
   Length: 184'
   Width: 315
   Shape: Rectangle
   Slope:
   - ☑ Steep (> 20%)
   - ☐ Moderate (8% to 20%)
   - ☐ Gentle (< 8%)

4. Erosion Processes:
   - ☑ Direct scour from river or tributary flows
   - ☐ Piping
   - ☐ Slumping due to scoured toe of bank
   - ☐ Gully or rill erosion from overland flows towards lake
   - ☐ Other: _____

5. Adjacent Land Use / Vegetative Cover:
   - ☐ Agricultural
   - ☐ Undeveloped, Grassy
   - ☐ Undeveloped, Wooded
   - ☐ Road Crossing/Bridge
   - ☐ Roadway, Gravel
   - ☐ Roadway, Paved
   - ☐ Park
   - ☐ Unvegetated
   - ☐ Early successional vegetation
   - ☑ Exposed roots or root undercutting
   - ☑ Leaning or fallen trees
   - ☐ Other: _____

6. Hydrologic Impact Information (Erosion area affected during or by):
   - ☐ Extreme Floods
   - ☐ Above normal high-water level
   - ☑ Within range of normal water level fluctuations

7. Description of Exposed Soils including Types and Depths:
   I have a lot of washed out area on my bank an lost about 10 to 12 feet of Bank

8. General Comments:
   Too much water for width of River
   _____ (Provide additional comments on back of sheet)

9. Potential Cause of Erosion/Sedimentation (check all that apply):
   - ☑ Project operations (water level fluctuations; maintenance/construction activities)
   - ☐ Natural factor independent of operations (e.g., seasonal flooding, riverine processes, etc.
   - ☐ Land use (e.g., farming, ranching, mining, development, etc.)
   - ☐ Anthropogenic (Foot/bike paths, vehicle traffic, waves from boats, etc.)
   - ☐ Other: _____

   Explain Reasoning for Potential Cause of Erosion/Sedimentation: _____

R. L. HARRIS PROJECT

EROSION & SEDIMENTATION STUDY SITE EVALUATION FORM

Water Body: TALLAPOOSA River Date: 6-9-2020

Field Personnel: _____ Photo No.: _____

1. Erosion Area Location:
   ID: DAVID ROYSTER Lat: 33° 9 m:N 29 sec N Long: 85° 34 m:W 29 sec W Time: 9:00 PM

2. Position in Landscape:
   - ✓ Levee/Embankment
   - ✓ Steep bank
   - Floodplain Terrace
   - Main Channel/Main Body of Lake
   - Cove
   - Other: RIVER BANK

3. Physical Properties:
   Length: 210'
   Width: 315'
   Shape: RECTANGLE
   Slope:
   - ✓ Steep (> 20%)
   - Moderate (8% to 20%)
   - Gentle (< 8%)

4. Erosion Processes:
   - ✓ Direct scour from river or tributary flows
   - Piping
   - Slumping due to scoured toe of bank
   - Gully or rill erosion from overland flows towards lake
   - Other: _____

5. Adjacent Land Use / Vegetative Cover:
   - Agricultural
   - Undeveloped, Grassy
   - Undeveloped, Wooded
   - Road Crossing/Bridge
   - Roadway, Gravel
   - Roadway, Paved
   - Park
   - Unvegetated
   - Early successional vegetation
   - ✓ Exposed roots or root undercutting
   - ✓ Leaning or fallen trees
   - Other: _____

6. Hydrologic Impact Information (Erosion area affected during or by):
   - Extreme Floods
   - ✓ Above normal high-water level
   - ✓ Within range of normal water level fluctuations

7. Description of Exposed Soils including Types and Depths:
   LARGE WASHED OUT AREA'S

8. General Comments:
   WATER RISES TOO MUCH AND IS TOO SWIFT FOR THE WIDTH OF RIVER, SOMEONE NEED'S TO LOOK AT THE EROSION WITH THE WATER DOWN (Provide additional comments on back of sheet)

9. Potential Cause of Erosion/Sedimentation (check all that apply):
   - ✓ Project operations (water level fluctuations; maintenance/construction activities)
   - Natural factor independent of operations (e.g., seasonal flooding, riverine processes, etc.
   - Land use (e.g., farming, ranching, mining, development, etc.)
   - Anthropogenic (Foot/bike paths, vehicle traffic, waves from boats, etc.)
   - Other: _____

   Explain Reasoning for Potential Cause of Erosion/Sedimentation:
   WATER WAY TO SWIFT

R. L. HARRIS PROJECT

EROSION & SEDIMENTATION STUDY SITE EVALUATION FORM

Water Body: Tallapoosa River Date: June 9, 2020

Field Personnel: Chuck Denman Photo No.: _____

1. Erosion Area Location:
   ID: _____ Lat: N 33' 00' 19.2" Long: W85' 34' 49.9" Time: 16.32

2. Position in Landscape:
   - ✓ Levee/Embankment
   - ~~✓ Steep bank~~
   - ✓ Floodplain Terrace
   - ✓ Main Channel/Main Body of Lake
   - ✓ Cove
   - ✓ Other: Left channel

3. Physical Properties:
   Length: 840'
   Width: 10-20 feet
   Shape: Irregular

   Slope:
   - ~~✓ Steep (> 20%)~~
   - ✓ Moderate (8% to 20%)
   - ✓ Gentle (< 8%)

4. Erosion Processes:
   - ✓ Direct scour from river or tributary flows
   - ✓ Piping
   - ~~✓ Slumping due to scoured toe of bank~~
   - ✓ Gully or rill erosion from overland flows towards lake
   - ✓ Other: _____

5. Adjacent Land Use / Vegetative Cover:
   - ✓ Agricultural
   - ✓ Undeveloped, Grassy
   - ~~✓ Undeveloped, Wooded~~
   - ✓ Road Crossing/Bridge
   - ✓ Roadway, Gravel
   - ✓ Roadway, Paved
   - ✓ Park
   - ✓ Unvegetated
   - ✓ Early successional vegetation
   - ✓ Exposed roots or root undercutting
   - ~~✓ Leaning or fallen trees~~
   - ✓ Other: _____

6. Hydrologic Impact Information (Erosion area affected during or by):
   - ✓ Extreme Floods
   - ✓ Above normal high-water level
   - ~~✓ Within range of normal water level fluctuations~~

7. Description of Exposed Soils including Types and Depths:
   Clay ,sand and rock

8. General Comments:
   Flushing effects from high water flow scours river bank while sediment deposited from low Flow in center of channel enableing vegitation to block center of channel causing greater flows along bank. (Provide additional comments on back of sheet)

9. Potential Cause of Erosion/Sedimentation (check all that apply):
   - ~~✓ Project operations (water level fluctuations; maintenance/construction activities)~~
   - ✓ Natural factor independent of operations (e.g., seasonal flooding, riverine processes, etc.
   - ✓ Land use (e.g., farming, ranching, mining, development, etc.)
   - ✓ Anthropogenic (Foot/bike paths, vehicle traffic, waves from boats, etc.)
   - ✓ Other: _____

   Explain Reasoning for Potential Cause of Erosion/Sedimentation: See above.

Document Content(s)

R. L. HARRIS PROJECT

EROSION & SEDIMENTATION STUDY SITE EVALUATION FORM

Water Body: Tallapoosa River Date: June 10, 2020

Field Personnel: Albert Eiland Photo No.: N/A

1. Erosion Area Location:
   ID: _____ Lat: N 33.167925 Long: W 85.581963 Time: 9:00 am

2. Position in Landscape:
   - Levee/Embankment
   - (X) Steep bank
   - Floodplain Terrace
   - Main Channel/Main Body of Lake
   - (X) Cove
   - Other: East bank of river.

3. Physical Properties:
   Length: .5 miles
   Width: 10-20 feet
   Shape: Irregular
   Slope:
   - (X) Steep (> 20%)
   - Moderate (8% to 20%)
   - Gentle (< 8%)

4. Erosion Processes:
   - Direct scour from river or tributary flows
   - (X) Piping
   - (X) Slumping due to scoured toe of bank
   - (X) Gully or rill erosion from overland flows towards lake
   - Other: The daily constant changes of the water levels as well as the soaking of the ground, allows trees to easily uproot, which causes the banks to wash away.

5. Adjacent Land Use / Vegetative Cover:
   - Agricultural
   - (X) Undeveloped, Grassy
   - (X) Undeveloped, Wooded
   - Road Crossing/Bridge
   - Roadway, Gravel
   - Roadway, Paved
   - Park
   - Unvegetated
   - Early successional vegetation
   - (X) Exposed roots or root undercutting
   - (X) Leaning or fallen trees
   - Other: Campground/Recreation

6. Hydrologic Impact Information (Erosion area affected during or by):
   - (X) Extreme Floods
   - (X) Above normal high-water level
   - (X) Within range of normal water level fluctuations

7. Description of Exposed Soils including Types and Depths:
   Clay, sand and rock.

8. General Comments:
   The constant flushing of water that causes the rise and fall of the water levels cause erosion, which then exposes tree roots which eventually lead to tree loss.
   (Provide additional comments on back of sheet)

9. Potential Cause of Erosion/Sedimentation (check all that apply):
   - (X) Project operations (water level fluctuations; maintenance/construction activities)
   - Natural factor independent of operations (e.g., seasonal flooding, riverine processes, etc.
   - Land use (e.g., farming, ranching, mining, development, etc.)
   - Anthropogenic (Foot/bike paths, vehicle traffic, waves from boats, etc.)
   - Other: _____

   Explain Reasoning for Potential Cause of Erosion/Sedimentation: See above.

Document Content(s)

File Erosion & Sedimentation Study Site Evaluation Form.pdf.PDF cannot be converted to PDF.

Chuck Denman
1810 Oak Grove Road
Titusville Florida
32796

Regarding:Alabama Power Company relicensing for the Harris Hydroelectric Project (FERC No. 2628-065).

Harris Dam additional studies suggested

A general review of historical materials ie newspapers, and other records dealing with the proposals for constructing the Dam. Including comments and conditions provided in initial permitting. With the goal being to determine if the dam has achieved the original benefits expected. Perhaps a score card.

A pre vs post Dam analysis of down stream impacts. Including flooding,erosion and habitat changes to flora and fauna.

1. Flooding :storm runoff model comparing 25,50 and 100 year 24 hour storm events.
2. Erosion : utilizing available remote sensing materials to compare river channel and islands size and shape today and pre dam.
3. Plants: utilize remote sensing materials to map flag grass and invasive plant communities to compare changes from pre Dam.
4. Fisheries: review available materials from locals in the community, fish and game and other resources to determine what effect the Dam has had on down stream fish types and numbers.

Document Content(s)

APC Harris Relicensing

From: Sarah Salazar <Sarah.Salazar@ferc.gov>
Sent: Friday, June 12, 2020 7:27 AM
To: Clark, Maria; Anderegg, Angela Segars
Cc: Allan Creamer; Stephen Bowler
Subject: RE: EPA comments on R.L. Harris Dam Relicensing Draft Study Reports

Good morning Maria,

If you haven't already filed these comments to the Commission's record, could you file them using either our eFiling option (for instructions on eFiling see https://www.ferc.gov/docs-filing/ferconline.asp [ferc.gov]).

Thank you in advance and let me know if you have any questions.

Sarah L. Salazar ✧ *Environmental Biologist* ✧ *Federal Energy Regulatory Commission* ✧ *888 First St, NE, Washington, DC 20426* ✧ *(202) 502-6863*

From: Clark, Maria <Clark.Maria@epa.gov>
Sent: Thursday, June 11, 2020 8:45 PM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Cc: Sarah Salazar <Sarah.Salazar@ferc.gov>; Clark, Maria <Clark.Maria@epa.gov>
Subject: EPA comments on R.L. Harris Dam Relicensing Draft Study Reports

Dear Angie,

U.S. Environmental Protection Agency appreciates the opportunity to review the Draft Study Reports regarding the relicensing of the R.L. Harris Dam on the Tallapoosa River in Alabama. We also appreciate the outreach that Alabama Power has done in the early stage of the process to ensure that issues can be fully addressed prior to finalizing the major components of the proposed project.

During the April 29, 2020, Initial Study Report meeting, Federal Energy Regulatory Commission (FERC) and Alabama Rivers Alliance submitted questions asking why modelling of downstream releases were limited to the Green Plan, Pre-Green Plan, and Pre-Green Plan with 150 cfs minimum flow. Questions were also asked as to why only the 150 cfs minimum flow was selected. Multiple questions were asked about the possibility of having an option of the Green Plan with a minimum flow.

Further, Alabama Power suggested that any requests for additional flow scenarios be submitted as soon as possible before phase 2 starts. The EPA requests that the flow scenarios include the evaluation of an option including both the pulses of the Green Plan with a minimum flow, and a higher minimum flow. The 150 cfs minimum flow was selected based upon the volume of water used for the Green Plan, as opposed to an analysis based upon protective minimum flows for aquatic life.

Additionally, EPA requests the inclusion of both adaptively managed flow scenarios and adaptive management as an outcome. The state-of-the-science on environmental flows includes adaptive management as a key feature for the protection of aquatic life. The evaluation could examine how monitoring would be used to evaluate the

success of the flows, and any potential adjustments that may be needed over time. The EPA submitted resources that supports this request in March 2019.

We thank you in advance for the opportunity to work with you during the FERC relicensing process.

Maria R. Clark

NEPA Section - Region 4
Strategic Programs Office
U.S. Environmental Protection Agency
61 Forsyth, Street South West
Atlanta, GA 30303
404-562-9513

APC Harris Relicensing

From: Duncan, Jeffrey R <Jeff_Duncan@nps.gov>
Sent: Friday, June 12, 2020 8:06 AM
To: Anderegg, Angela Segars
Cc: Tagger, Barbara
Subject: NPS comments delayed

Good morning Angie--

Just wanting to let you know that we are planning to submit comments on the RL Harris Sediment and Erosion Study, but our letter will be delayed as it works its way through the process. I'm not sure how long, but I'm hoping it will only be a few days. Given COVID-19 and changing personnel, the process is taking longer than usual. Please let me know if you have any questions or concerns.

Thanks, Jeff

Jeffrey R. Duncan, PhD.
Regional Aquatic Ecologist
Science and Natural Resources Management
National Park Service, Southeastern United States
100 West Martin Luther King, Jr. Blvd. Suite 215
Chattanooga, TN 37402
Ph: (423) 987-6127

"If we are going to succeed in preserving the greatness of the national parks, they must be held inviolate. They represent the last stands of primitive America. If we are going to whittle away at them we should recognize at the very beginning that all such whittlings are cumulative and the end result will be mediocrity."

- Newton Drury, Director National Park Service, 1940-1951

APC Harris Relicensing

From: Clark, Maria <Clark.Maria@epa.gov>
Sent: Friday, June 12, 2020 10:04 AM
To: Sarah Salazar; Anderegg, Angela Segars
Cc: Allan Creamer; Stephen Bowler
Subject: RE: EPA comments on R.L. Harris Dam Relicensing Draft Study Reports

Good morning Sarah,

I thought this one was only for Alabama. I already uploaded to eFiling FERC site.

Thank you and have a great weekend!
Maria

From: Sarah Salazar <Sarah.Salazar@ferc.gov>
Sent: Friday, June 12, 2020 8:27 AM
To: Clark, Maria <Clark.Maria@epa.gov>; Anderegg, Angela Segars <ARSEGARS@southernco.com>
Cc: Allan Creamer <Allan.Creamer@ferc.gov>; Stephen Bowler <Stephen.Bowler@ferc.gov>
Subject: RE: EPA comments on R.L. Harris Dam Relicensing Draft Study Reports

Good morning Maria,

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Thank you in advance and let me know if you have any questions.

Sarah L. Salazar ✧ *Environmental Biologist* ✧ *Federal Energy Regulatory Commission* ✧ *888 First St, NE, Washington, DC 20426* ✧ *(202) 502-6863*

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Maria R. Clark
NEPA Section - Region 4
Strategic Programs Office
U.S. Environmental Protection Agency
61 Forsyth, Street South West
Atlanta, GA 30303
404-562-9513

APC Harris Relicensing

From: Sarah Salazar <Sarah.Salazar@ferc.gov>
Sent: Friday, June 12, 2020 10:58 AM
To: Clark, Maria; Anderegg, Angela Segars
Cc: Allan Creamer; Stephen Bowler
Subject: RE: EPA comments on R.L. Harris Dam Relicensing Draft Study Reports

Thank you for filing these comments on the draft study reports, which are part of the ISR, to our record as well.

Sarah L. Salazar ✧ *Environmental Biologist* ✧ *Federal Energy Regulatory Commission* ✧ *888 First St, NE, Washington, DC 20426* ✧ *(202) 502-6863*

From: Clark, Maria <Clark.Maria@epa.gov>
Sent: Friday, June 12, 2020 11:04 AM
To: Sarah Salazar <Sarah.Salazar@ferc.gov>; Anderegg, Angela Segars <ARSEGARS@southernco.com>
Cc: Allan Creamer <Allan.Creamer@ferc.gov>; Stephen Bowler <Stephen.Bowler@ferc.gov>
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Cc: Sarah Salazar <Sarah.Salazar@ferc.gov>; Clark, Maria <Clark.Maria@epa.gov>
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Maria R. Clark
NEPA Section - Region 4
Strategic Programs Office
U.S. Environmental Protection Agency
61 Forsyth, Street South West
Atlanta, GA 30303
404-562-9513

LANCE R. LEFLEUR
DIRECTOR

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov
1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

June 11, 2020

Angie Anderegg
Hydro Services - Harris Relicensing Project Manager
Alabama Power Company
600 North 18th Street
P.O. Box 2641
Birmingham, AL 35291-8180

RE: Comments on Draft Harris Water Quality Study Report
R. L. Harris Hydroelectric Project (FERC No. 2628)

Dear Ms. Anderegg:

The Water Quality Branch at the Alabama Department of Environmental Management has reviewed the Draft Harris Water Quality Study Report for the R. L. Harris Hydroelectric Project, and we submit the following comments for consideration:

1. On page 13 of the report, the RLHR-1 DO profile is not consistent with the ADEM data we reviewed.
2. On page 23 of the report, it states that ADEM installed a monitoring station in the Tallapoosa River at the Malone bridge crossing in May 2019. The year should be corrected to 2018.
3. Starting on page 26 of the report, please note the location of the ADEM data used in the tables and whether the data was averaged.
4. On page 39 of the report, the "Error! Reference source not found." will need to be fixed.
5. On page 46 of the report, it states that the 2018 303(d) list included portions of 43 other lakes/reservoirs in Alabama due to mercury in fish tissue attributed to atmospheric deposition. That number should be corrected to 49 lakes/reservoirs and reservoir embayments in Alabama impaired for mercury due to atmospheric deposition.

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
4171 Commanders Drive
Mobile, AL 36615-1421
(251) 432-6533
(251) 432-6598 (FAX)

We appreciate the opportunity to provide comments on this project. If you have any questions, please do not hesitate to contact me at (334) 274-4250 (via email jhaslbauer@adem.alabama.gov), or David Moore of my staff at (334) 274-4165 (via email djmoore@adem.alabama.gov).

Sincerely,

Jennifer M. Haslbauer, Chief
Standards and Planning Section
Water Quality Branch
Water Division

JMH/DJM/jes

Document Content(s)

June 11,2020

Dear Secretary Bose,

HAT 1.

PROPOSED MODIFICATION TO OPERATING CURVE AND DOWNSTREAM FLOW STUDIES

18 CFR 5.15
For studies using 100 year climate data to model outcomes,

(d) I propose additional modelling based on predictive data from the studies of climate change. It is my understanding Federal Dams do additional modelling to take effects of climate change into account when undergoing licensing. This would include climate change considerations of Operating Curve Rules among others.

This idea was previously presented to FERC in 2019 comments by Maria Clark from the EPA.

Given the long life of the permit, the measurable manifestations of climate change and the Southern Company's goal to shift power generation away from fossil fuels, it seems prudent to take advantage of modelling in preparation to be best able to deal with unexpected situations such as greater reliance on hydro power by APC.

1. To my knowledge climate alternative data has not been modelled
2. Modelling is a very cost effective way to prepare for future events.

P-2628 HAT 2 Comments

Submitted separately are landowner forms reproduced from the study report and completed by landowning downstream stakeholders.They are reporting on erosion at their property sites. They represent lay attempts to recognize and monitor riverfront erosion. Whether or not each geo-located individual completed and submitted a form, each has taken their time to attend at least one meeting to express their grievance with downstream management over the life of the dam.

Also submitted is a screen shot of pinned landowner locations. Additionally, submitted is a page from the Trutta report locating erosion sites. There are correlations with landowner reported erosion and the study map. The Trutta float-the-river erosion survey is baseline information. It is a current day 'snapshot'. It may provide useful data for prospective study. Not being conversant in reading sonar / lidar data, I seek reassurance that riverbank video taken when the river channel is full does not dampen / downplay the classification of erosion sites.
The river's edges evaluated - as landowners experience it - when the water is low may expose more severe erosion than shown on the Trutta video.

Notable is the omission from the report of log/lat data for the sites identified in Figure 3-1 and Table 3-2. (Long/lat data was provided in Table 2-1 Summary of Lake Harris Erosion & Sedimentation)

#1 Request for long/data data for Figure 3-1 and Table 3-2 of the Trutta Report and Request greater resolution image of Figure 3-1

Of major concern to all Harris Project Stakeholders is the Erosion Issue. Foundational to taking steps going forward is looking back to what has been. The University of Alabama maintains an aerial photographic library including images of the Harris Project area beginning in 1942. In existence are digitized prints for 1942, 1950, 1954, 1964, 1973. These are housed at www.alabamamaps.ua.edu. Attached is a mosaic of a portion of the project area as it appeared in 1942. The full sized map is rendered and georeferenced.

#2 Proposed: A New Study of the downstream river using historic images overlaid onto current imagery

18 CFR 5.15 (e)

1. Erosion is a significant and persistent concern. Erosion is problematic for landowners and flora & fauna in and around the river.
2. To my knowledge, this type of GIS comparison using historic data to impact effects of release effects downriver have not been done.
3. At the initial licensing there was no post dam data to compare to compare to the historic data.
4. This is a simple and inexpensive study, using readily available data

18 CFR 5.0(b)

1. The study should look at and provide change analysis for:

a. Analysis of the river bank contour along its length through time. Free flowing rivers are elastic, moving silt and sedimentation from side to side and down its length. A river serving as a channel should show deviations from historic patterns.
b. Any changes in river bank elevation
c. Provide image overlays of historic data onto current imagery with the intent to discover what the data show about the effects of a dam on the downstream river and can be a tool to evaluate effect of future changes made to flow patterns.
d. Begin construction of a detailed GIS map with information relating fish populations, (and a whole host of other parameters) in 3D. That is, not only presence/absence of species along the river length, but presence (where data are available) of species during different decades in time. There are numerous possibilities.
e. APC can gather additional, (say scaled to 1:6000 or the highest resolution feasible) imagery to overlay on the historic public images available at 1:20000. This would provide a baseline for future studies. At our fingertips are 80 years of data.

2. This GIS modeling tool can also be applied to provide opportunity for interagency contribution towards building the most accurate picture of aquatic and other life of the Tallapoosa.

3. Creating the realization of and expounding upon the treasures of the Tallapoosa River is something all parties (APC and stakeholders above/below the dam) can rightly be proud of.

P-2628 HAT5 Comments

#1 Re: NOTIFICATION TO DOWNSTREAM USERS OF WATER RELEASE FROM HARRIS DAM

Downstream rivers users 'don't know what they can't know', They cannot know the mind of market forces determining when the turbines will run. APC and the dam managers have an obligation and responsibility, not to make the river safe for downstream users, but to provide users with accurate, timely and transparent information so users can make informed decisions regarding their own safety. APC must develop an effective way to 'push' dam operation realtime change notifications to those who opt in. Increased river usage as described by riverside landowners, reinforces the need-to-know for downstream users, especially those not already familiar with river level irregularities.

It appears FERC in Atlanta has approved the status quo notification system currently used by APC. The current system provides outdated and insufficient information for downstream users.

Accession Number:	20200317-3033
Description:	Letter order to Alabama Power Company accepting the automated downstream notification system for the Tallapoosa River Projects et al under P-349 et al.

If this issue is not part of the HAT 5 relicensing process, we need to know. When is the proper time to address this recreation / safety issue? Please have APC advise us of the process we need to pursue regarding revamping and modernizing the notification of release operations. This is an important issue, impacting below dam river use at each of APC dam projects.

And….. if this has been addressed and I missed it, I apologize.

PS a copy of the FERC Atlanta office correspondence with APC is sent as a separate PDF.

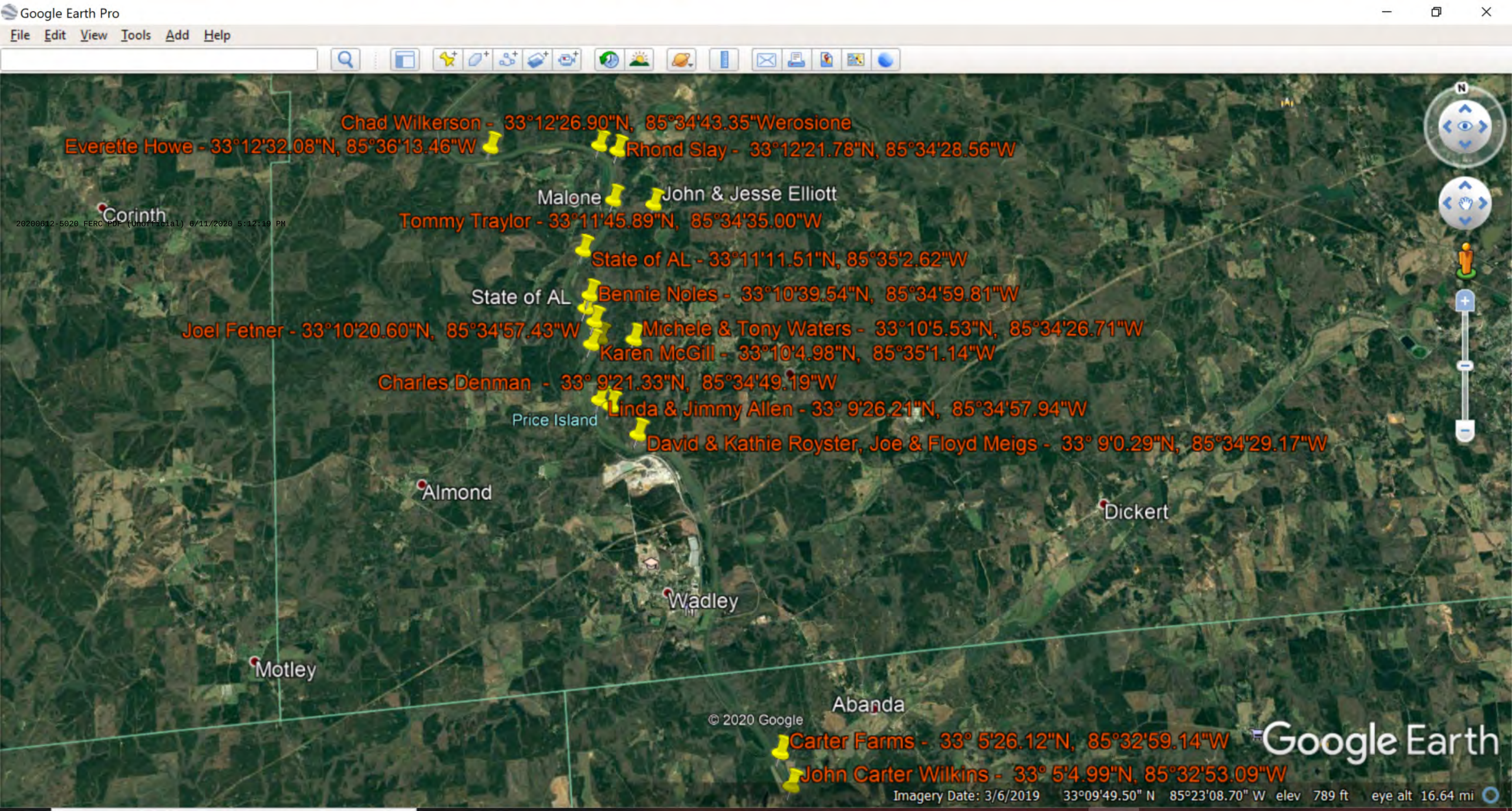
#2 RE: IMPROVED BELOW THE DAM RIVER ACCESS

As I understand it, part of the initial rational for the APC dam system included a 'give back to the public' component. This is easily realized on the impoundments created by dam construction.

Requiring more effort and thought are ways APC 'gives back' to below-dam river users. The below-the-dam efforts to provide access / ramps are as inherent in the mandate as are the creation of put-ins on the impoundment. To date, I have not seen any APC ideas or proposals put forth regarding downstream access. This is a real public/private partnership opportunity. forIf this is not a relicensing issue, please advise so we can pursue the proper channels. Again, I apologize in advance if I have missed APC correspondence.

Sincerely,
Donna Matthews
Box 1054
105 Woodland Ave E
Wedowee, AL 3278

Document Content(s)


Google Earth Pro
File Edit View Tools Add Help
Chad Wilkerson - 33°12'26.90"N, 85°34'43.35"W
erosione
Everette Howe - 33°12'32.08"N, 85°36'13.46"W
Rhond Slay - 33°12'21.78"N, 85°34'28.56"W
Malone
John & Jesse Elliott
Corinth
20200612-5020 FERC PDF (Unofficial) 6/11/2020 5:12:19 PM
Tommy Traylor - 33°11'45.89"N, 85°34'35.00"W
State of AL - 33°11'11.51"N, 85°35'2.62"W
State of AL
Bennie Noles - 33°10'39.54"N, 85°34'59.81"W
Joel Fetner - 33°10'20.60"N, 85°34'57.43"W
Michele & Tony Waters - 33°10'5.53"N, 85°34'26.71"W
Karen McGill - 33°10'4.98"N, 85°35'1.14"W
Charles Denman - 33° 9'21.33"N, 85°34'49.19"W
Linda & Jimmy Allen - 33° 9'26.21"N, 85°34'57.94"W
Price Island
David & Kathie Royster, Joe & Floyd Meigs - 33° 9'0.29"N, 85°34'29.17"W
Almond
Dickert
Wadley
Motley
Abanda
© 2020 Google
Carter Farms - 33° 5'26.12"N, 85°32'59.14"W
John Carter Wilkins - 33° 5'4.99"N, 85°32'53.09"W
Google Earth
Imagery Date: 3/6/2019 33°09'49.50" N 85°23'08.70" W elev 789 ft eye alt 16.64 mi
Type here to search
2:34 PM
6/10/2020

Tallapoosa River Streambank Condition

Document Content(s)

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

Re: R.L. Harris Dam Relicensing Project (FERC Project No. P-2628-065) located on the Tallapoosa River in Alabama. Comments on the Initial Study Report Meeting Summary dated May 12, 2020, and the Initial Study Report dated April 10, 2020.

Dear Secretary Bose:

The U.S. Environmental Protection Agency is providing clarifications and additional comments on the Initial Study Report (ISR) and the Summary Report.

ISR comments:

Section 4.2: Study Progress of the ISR, states …" *In evaluating the 150 cfs minimum flow alternative, there are too many unknowns at this time to generate reliable/accurate HydroBudget results; however, if the 150 cfs minimum flow is provided through a non-generation mechanism, the impact to hydropower generation will be the same or slightly worse than the impact from Green Plan operations. ...*" EPA would like to request clarification or supporting information regarding this conclusion.

Section 4.4: Remaining Activities does not include any follow-up to address these unknowns described in Section 4.2. Minimum flows are likely to have a significant impact on aquatic life resources, which will be evaluated in Phase 2. EPA recommends against making assumptions that minimum flows will have an adverse impact if the data is not ample enough to make that conclusion. For instance, quantifying the impact could result in finding that they are minor or negligible as compared to the Green Plan. EPA recommends that a Remaining Activity be added to gather the information needed to quantify the impacts.

Section 5.2: Reports on the dissolved oxygen (DO) data. The EPA recommends that data be included in the document where it is analyzed as an Appendix in all future documents or provide live links and page numbers to where the data is located, in order to provide an easier discussion to review.

The EPA would like to note that the analysis of DO is inconsistent with how it should be evaluated against the Water Quality Standard (WQS). Below are comments from prior EPA recommendations:

The WQ Study Plan does not indicate that the goal of characterizing water quality would be to evaluate where water quality standards are not being met, and to develop conditions to be included in the 401 Certification to operate the Project in such a manner as to attain those WQS. The goal as written does not indicate any action to be taken once the characterization of the water quality is complete. The EPA recommends that the goal be clarified to note that where WQS are not being met, the 401 may be conditioned so that WQS can be met through operational changes or other modifications to the project."

The purpose of collecting water quality data is to compare it to the Alabama WQS. However, the DO data analysis only reports the results in terms of percentages. The WQS, below, does not include the use of percentages for protection of Fish and Wildlife:

4. Dissolved oxygen:
(i) For a diversified warm water biota, including game fish, daily dissolved oxygen concentrations ***shall not be less than 5 mg/l at all times****; except under extreme conditions due to natural causes,* ***it may range between 5 mg/l and 4 mg/l,*** *provided that the water quality is favorable in all other parameters. The normal seasonal and daily fluctuations shall be maintained above these levels.* ***In no event shall the dissolved oxygen level be less than 4 mg/l due to discharges from existing hydroelectric generation impoundments.*** *All new hydroelectric generation impoundments, including addition of new hydroelectric generation units to existing impoundments, shall be designed so that the discharge will contain at least 5 mg/l dissolved oxygen where practicable and technologically possible. The Environmental Protection Agency, in cooperation with the State of Alabama and parties responsible for impoundments, shall develop a program to improve the design of existing facilities.*

Each data point must be compared to the WQS for DO. For WQS purposes, data are not aggregated and evaluated on percentages. DO is a parameter that has a direct effect on aquatic life. That is, if a sample is extremely low on a particular event, it does not help aquatic life if a sample taken at a later unrelated time shows sufficient oxygen. Therefore, the data for oxygen should not be averaged or reviewed as percentages, but reviewed against the water quality standard as stated above. For water below the dam, for instance, it should not be less than 4 mg/l. That is not to be averaged with other data. For downstream water, it shall not be less than 5 mg/l at all times, although it may range between 5 mg/l and 4 mg/l. The analysis should include a discussion of the number of samples that did not meet the state WQS for and the measured DO value. It is important to know both how many times the WQS were not met, as well as to know how much it deviated from the state WQS. This is critical as these data will be used as the basis for submitting the 401 WQ certification.

Section 5.4: The EPA recommends developing a matrix where each sampling result is compared to water quality standards.

Summary Report comments:

FERC and Alabama Rivers Alliance submitted questions asking why modelling of downstream releases were limited to 150 cfs and why an option was not presented to model the Green Plan with minimum flows. EPA raised the same concerns and would like to recommend the addition of a scenario that includes a minimum flow for the Green Plan.

In question 7 by EPA: Alabama Power responded that the flows would be set without variation or modification throughout the term of the license. EPA would like to provide another resource (supported by the US Department of Energy, 2020) that could improve the study results by comparing models used in this Multi-model research:

Multi-model Hydroclimate Projections for the Alabama-Coosa-Tallapoosa River Basin in the Southeastern United States https://www.ornl.gov/publication/multi-model-hydroclimate-projections-alabama-coosa-tallapoosa-river-basin-southeastern

This research focuses on the project area and includes relevant information and data that could be used for Alabama's study. Efforts to adaptively managing flows would allow Alabama Power to respond to changing conditions or new information within the system.

In question 8 by Alabama Rivers: EPA recommends that temperature be addressed in the water quality section and be included with the WQ certification as appropriate.

Thank you for the opportunity to comment.

Maria R. Clark

NEPA Section - Region 4

Strategic Programs Office

U.S. Environmental Protection Agency

61 Forsyth, Street South West

Atlanta, GA 30303

404-562-9513

Document Content(s)

Clark, Maria

From: Clark, Maria
Sent: Thursday, June 11, 2020 8:45 PM
To: Anderegg, Angela Segars
Cc: Sarah Salazar; Maria Clark
Subject: EPA comments on R.L. Harris Dam Relicensing Draft Study Reports

Dear Angie,

U.S. Environmental Protection Agency appreciates the opportunity to review the Draft Study Reports regarding the relicensing of the R.L. Harris Dam on the Tallapoosa River in Alabama. We also appreciate the outreach that Alabama Power has done in the early stage of the process to ensure that issues can be fully addressed prior to finalizing the major components of the proposed project.

During the April 29, 2020, Initial Study Report meeting, Federal Energy Regulatory Commission (FERC) and Alabama Rivers Alliance submitted questions asking why modelling of downstream releases were limited to the Green Plan, Pre-Green Plan, and Pre-Green Plan with 150 cfs minimum flow. Questions were also asked as to why only the 150 cfs minimum flow was selected. Multiple questions were asked about the possibility of having an option of the Green Plan with a minimum flow.

Further, Alabama Power suggested that any requests for additional flow scenarios be submitted as soon as possible before phase 2 starts. The EPA requests that the flow scenarios include the evaluation of an option including both the pulses of the Green Plan with a minimum flow, and a higher minimum flow. The 150 cfs minimum flow was selected based upon the volume of water used for the Green Plan, as opposed to an analysis based upon protective minimum flows for aquatic life.

Additionally, EPA requests the inclusion of both adaptively managed flow scenarios and adaptive management as an outcome. The state-of-the-science on environmental flows includes adaptive management as a key feature for the protection of aquatic life. The evaluation could examine how monitoring would be used to evaluate the success of the flows, and any potential adjustments that may be needed over time. The EPA submitted resources that supports this request in March 2019.

We thank you in advance for the opportunity to work with you during the FERC relicensing process.

Maria R. Clark
NEPA Section - Region 4
Strategic Programs Office
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Document Content(s)

Bham Now

Here are Alabama’s next 10 natural wonders and how you can help protect them

Sponsored

White-topped pitcher plants and Forever Wild's Splinter Hill Bog. Photo by Billy Pope.

Twenty-three years ago, the Alabama Environmental Council (AEC) ushered in one of the greatest periods of conservation in Alabama history. What did designating 10 Natural Wonders across the state achieve? Take a look.

Cahaba lilies at Cahaba River Park in Shelby County. Photo by Jim Schmalz for Bham Now

Shortly after shining a spotlight on Natural Wonders like the Cahaba River, Talladega Mountains, Little River Canyon, Monte Sano Mountain and the Mobile-Tensaw Delta, legislators, conservation officials and conservationists racked up an impressive list of accomplishments in those special places.

They included:

- Establishment of the Dugger Mountain Wilderness by Congress

- Establishment of the Mountain Longleaf National Wildlife Refuge and Cahaba River National Wildlife Refuge by Congress
- The state's largest conservation land acquisition, located in the Mobile-Tensaw Delta—fueled by the recently enacted Forever Wild Program
- Expansion of Monte Sano State Park, Historic Blakeley State Historical Park and Old Cahawba

- Creation of nature preserves such as the Sipsey River Swamp and much more

2020 Natural Wonders List

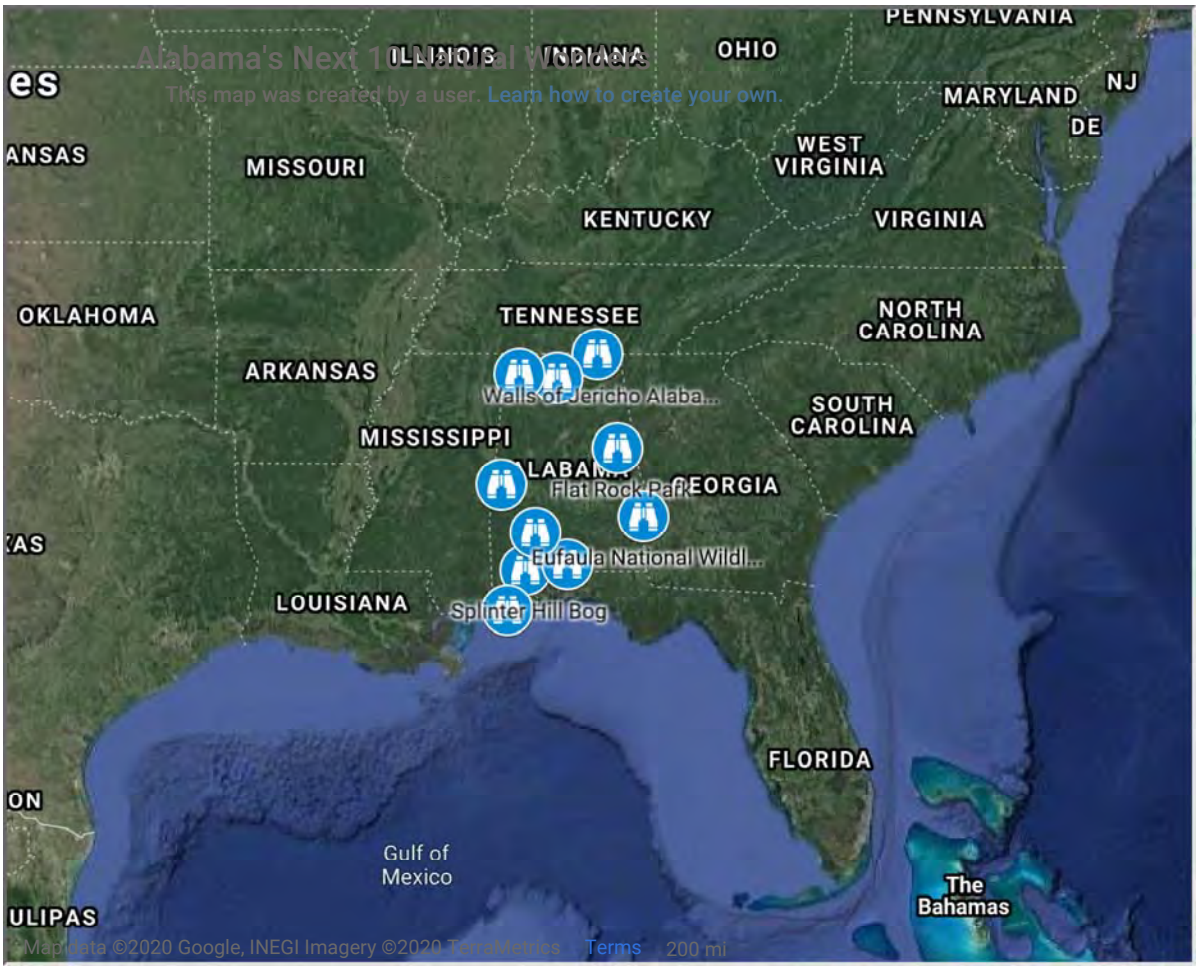
Bankhead National Forest. Photo by Robert Austin Wiley. Photo courtesy of Alabama Department of Conservation and Natural Resources

Can we repeat history? We think so.

In this, our third and final installment about Alabama's Natural Wonders, we asked Ken Wills, the AEC staffer who helped create the original 1997 list, to provide us with a list of 10 new Natural Wonders for 2020.

Along with his list, we have included "friends" groups and organizations dedicated to protecting and preserving these special places to help you get involved now.

Here is a map that notes locations of the Natural Wonders you can join us on our journey.



Wheeler National Wildlife Refuge—Winter Home to one of the Rarest Birds in the World

Photo by Keith Bozeman, Kayak at sunset at Wheeler National Wildlife Refuge near Decatur, Alabama. Courtesy of the Alabama Department of Natural Resources and Conservation

> *"Wheeler is the flagship National Wildlife Refuge in Alabama and it is the oldest," according to Ken Wills, co-author of the book Exploring Wild Alabama: A Guide to the State's Publicly Accessible Natural Areas. "It was a New Deal experiment to see if wildlife would use a manmade reservoir."*

Sandhill crane at the Wheeler National Wildlife Refuge, photo by David Frings, December 9, 2017

The area is home to almost every kind of duck imaginable, each year the ducks are joined in the winter by 10,000-15,000 sandhill cranes. Recently, the refuge's biggest celebrity has been the whooping crane, one of the rarest birds in the world. How rare? There are only a little over 400 whooping cranes in the wild. About 100 of the "whoopers" winter East of the Mississippi River. Out of that number, 25 more or less annually reside at Wheeler during the winter—that makes Wheeler key to the whooping crane's survival.

Advocates on behalf of the Wheeler National Wildlife Refuge: Friends of Wheeler National Wildlife Refuge & International Crane Foundation.

Cane Creek Canyon Nature Preserve—A Family Shares their Garden of Eden

Located just outside the city of Tuscumbia in Colbert County, Cane Creek Canyon Nature Preserve is a 700-acre private nature preserve that was opened in 1986 and is owned by Jim and Faye Lacefield. For anyone who has ever visited the place, it truly is Alabama's Garden of Eden.

> "This is a really special place," said Wills, who has known the Lacefields since his days at the University of Alabama. "The Lacefields have a real public recreation and conservation mindset. They have opened the property up to the public, created a series of trails and nice bridges. There are rare plants everywhere including French's 'Shooting stars.' He has even got some native cane stands."

If Jim Lacefield's name sounds familiar, he has written one of the most popular books about geology in the state, titled Lost Worlds in Alabama's Rocks. A must-read.

Granted official status as a nature preserve through a conservation easement with The Nature Conservancy of Alabama, Cane Creek Canyon is:

- Open to the public year-round Friday – Sunday and holidays (other days by appointment) 7 AM until 5 PM.
- There is no charge for hiking and other outdoor educational and recreational activities.

A**dvocates on behalf of Cane Creek Nature Preserve**: Friends of Cane Creek Canyon Nature Preserve and of course the Nature Conservancy in Alabama.

Walls of Jericho and the Paint Rock Forest—A Mythical Place

Walls of Jericho waterfall. Photo by ADCNR/Hannah Sumner

Wills listed the Walls of Jericho and the Skyline Mountains/Paint Rock watershed as his third natural wonder in North Alabama.

> "The walls are a mythical place," *described Wills.* "Forever Wild bought it several years ago, and if you take the trail down into it you better be prepared."

The trail to the walls is **rated difficult** by AllTrails.com. As many of the commenters say on their website, enjoy the steep hike down (even though it can be tricky), because traveling back you face a 1699-foot elevation gain.

Wills called the Walls a "big bowl with sinkholes." He said one of the highlights is to see the place after it rains, when "water goes shooting out the walls."

Walls of Jericho. Photo courtesy of the Nature Conservancy in Alabama.

Along with the Walls, the Skyline Mountains and Paint Rock watershed are natural wonders all to themselves. Bill Finch, Executive Director of the Paint Rock Forest Research Center said in an interview with Bham Now in October 2017, "the Paint Rock Forest is the center of deciduous forest diversity in North America and that it is probably one of the richest forests in the world."

Advocates on behalf of Walls of Jericho and the Paint Rock Forest: The Nature Conservancy in Alabama, Paint Rock Forest Research Center, Forever Wild Program

Livingston Lake "Lake LU" at University of West Alabama—Genuine Black Belt Prairie

Livingston Lake, which is also called Lake LU, on the campus of the University of West Alabama. Photo from Alabama Birding Trails Facebook page

Once one of the richest soils in North America if not on planet earth, over 350,000 acres of Back Belt prairie stretches from Alabama to Mississippi. Today, less than 1 percent of the prairies have survived.

> *"If you want to go show your family what a Black Belt Prairie looks like, go to the University of West Alabama, and there is an area called the Livingston Lake." directed Wills. "They have taken old*

> *hay fields and restored them to Black Belt Prairie. It is not a huge natural wonder but it is significant."*

Unbeknownst to most Alabamians, much of our state was prairie at the time of statehood. Lost to over-cultivation and cotton fields, there is a movement afoot to bring back Alabama's original landscape.

Advocates on behalf of Lake LU: Southeastern Grasslands Initiative, University of West Alabama

Flat Rock Park—From Rough Hangout to Park

Thanks to Alabama Power, Flat Rock in Randolph County, formerly a rough local "hangout" has been turned into a park. Located near Lake Harris, a few years ago the Alabama Glade Conservation Coalition sponsored a bioblitz in the backcountry

area of the park. It was there, they surveyed some of the last remaining pristine isolated granite outcrops in Alabama.

The coalition, for which Ken Wills is one of the founding members, aims to work cooperatively with Alabama Power to conserve this rare place. Their goal: conserve the first granite outcrop plant community habitat in Alabama.

Advocates on behalf of Flat Rock Park: Birmingham Botanical Gardens, Alabama Glade Conservation Coalition and Alabama Power

Splinter Hill Bog—Just Right Off I-65

Pitcher plant at The Nature Conservancy's Splinter Hill Bog, photo courtesy of The Nature Conservancy in Alabama

Want to see one of the most biodiverse places in Alabama, where plants eat bugs?

Wills tells you how to visit Splinter Hill Bog.

> *"If you are going to the Gulf Coast there are more places to stop than Peach Park, Priester's Pecans and Bates House of Turkey. One of the places to stop is one of the largest intact seepage bogs—pitchers plant bog in Alabama. Just three miles east off I-65 at the Raburn/Perdido exit, you can visit the Forever Wild land on one side and the Nature Conservancy land on the other side. You will see thousands of these carnivorous pitcher plants and sundews."*

How diverse is the place? Pull out that beach blanket you were going to use. For an area the size of the blanket there are 40-50 different kinds of species of plants and insects.

Advocates on behalf of Splinter Hill Bog: Forever Wild Program and The Nature Conservancy in Alabama

Conecuh National Forest—Home of the Gopher Tortoise

Hatchling Gopher Tortoise, photo by Mark Bailey

When you think of National Forests in Alabama, the Bankhead with Sipsey Wilderness and Talladega with Cheaha and Dugger Mountain Wildernesses tend to get all the publicity. Not any more, according to Wills. People are discovering the importance of the Conecuh National Forest.

> *"When you talk about Covington County, which the Wiregrass region is part of, that region was named after the flat plains of wiregrass and scattered pine, like a pine savannah. Some of the original cowboys in the south were in this region. It stayed that way until the advent of fertilizer after the civil war. They found the soils were easy to till, and started growing cotton. After the boll weevil, they grew peanuts. Due to cultivation and fire suppression, wiregrass is basically extinct in the wiregrass region."*

Fortunately, one of the few places you can find wiregrass today is in and around the Conecuh National Forest and Geneva State Forest. It's one of the last strongholds. The forest also provides great habitat for the declining threatened gopher tortoise. It is the only place you can find known gopher frogs in the state. And just recently, biologists have been reintroducing the endangered indigo snake.

Advocates on behalf of the Conecuh National Forest: Friends of Conecuh National Forests

Red Hills of Alabama—Like being in a hardwood forest in the Appalachians

The Red Hills Salamander (Phaeognathus hubrichti) is listed as the IUCN as an endangered species but the United States only listed them as a threatened species. They are only found in the Red Hills of Alabama.
John P. Clare
learn more at https://buff.ly/2VhtleY

2 Comment Share

Pop quiz! What is the state salamander of Alabama?

Answer: The Red Hill Salamander

Despite its location on the Coastal Plain, the Red Hills of Alabama have big deep ravines and hardwood forests that make you feel like you are in the Appalachians.

For years, this unique landscape which is primarily in Monroe County, has been unprotected until this year when the Forever Wild Program purchased over 4300+ acres of Red Hills habitat for recreation and yes a home for our state salamander. Forest-wise, like Paint Rock in the northern part of the state, this forest is an undiscovered biological hotspot that we are beginning to understand.

> *"If you are a first-time visitor, the easiest parcel of public land to go see this type of habitat is at Haines Island Park. It is a Corps of Engineers park on the Alabama River," added Wills.*

Advocates on behalf of the Red Hills: Alabama Birding Trails

Eufaula National Wildlife Refuge—Ducks and Alligators

Years ago, on my first visit to the city of Eufaula, I saw a young man wearing a t-shirt that said,

> *"Support your local hookers."*

Of course, they meant the local sport fishing businesses.

Eufaula National Wildlife Refuge is like the Wheeler Refuge in South Alabama," Wills said. "What's kinda neat is in the uplands in the refuge. They are taking old pine plantations and thinning them out. They are trying to create a pine savanna. The area was renowned as 'quail country' in Alabama. Now, they don't have much of that land on the public lands, so they are trying to restore that too."

The entire region is an outdoor recreation paradise. In addition to the National Wildlife Refuge there is Lakepoint State Park, Forever Wild's Wehle tract and the Barbour Wildlife Management Area.

Lots of birds, fish and yes, alligators! They do like to hang out in the sun in the summer, according to Wills.

Advocates on behalf of Eufaula National Wildlife Refuge: Ducks Unlimited, Friends of Eufaula National Wildlife Refuge

Dauphin Island—Finding Sanctuary for Birds

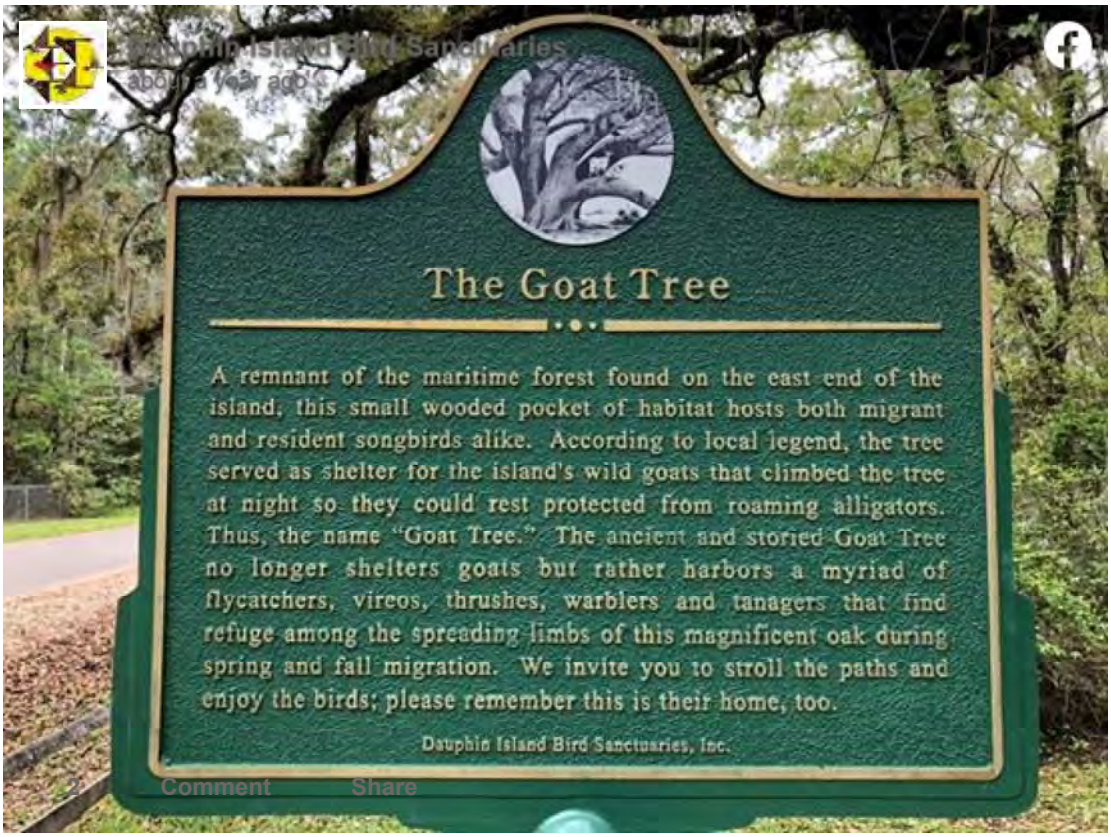
Indigo Bunting at Dauphin Island. Photo by Alabama Audubon

The last natural wonder Ken Wills added to his list was Dauphin Island.

> "Everybody thinks about Dauphin Island developing back in the 1950s, but that is part of its charm—it didn't become part of the condo coast. It is an extremely significant region for birds for several reasons."

According to Wills, when songbirds fly across the Gulf of Mexico from the Yucatan, they need a place to land. They need that coastal forest.

> *"Even vacant lots on Dauphin Island have value to those birds."*



In fact, Dauphin Island has been officially recognized as a *Globally Important Bird Area* by the National Audubon Society. Over 350 species of birds have been recorded on the Island.

Locally the "go-to" group is Dauphin Island Bird Sanctuaries. In a nutshell, the organization works with partners to protect bird habitat on the island. The Dauphin Island Bird Sanctuaries is the key to their survival.

Advocates on behalf of Dauphin Island: Dauphin Island Bird Sanctuaries, Alabama Audubon, Alabama Ornithological Society

2020 is the Year of Natural Wonders

Little River Canyon. Photo by Mary Jo Schmalz

This past April 22nd the Alabama Tourism Department declared 2020 the Year of Alabama Natural Wonders.

Are your favorite natural wonders on the 1997 Alabama Environmental Council, Ken Wills or Tourism's list? Let us know your special places in Alabama.

Visit Alabama's Natural Wonders and get involved. Let's usher in another "greatest era" in Alabama conservation history.

Sponsored by:

Pat Byington

Longtime conservationist. Former Executive Director at the Alabama Environmental Council and Wild South. Publisher of the Bama Environmental News for more than 18 years. Career highlights include playing an active role in the creation of Alabama's Forever Wild program, Little River Canyon National Preserve, Dugger Mountain Wilderness, preservation of special places throughout the East through the Wilderness Society and the strengthening (making more stringent) the state of Alabama's cancer risk and mercury standards.

Related

Get an inside look at Alabama's 10 Natural Wonders 23 years later

What will Alabama look like in 2119? With proper planning it can be a stunning oasis for people, business and wildlife.

Can you name Alabama's 10 Natural Wonders? See how a movement was born

Pat Byington / June 15, 2020

6/2 HAT 3 meeting summary

APC Harris Relicensing <g2apchr@southernco.com>

Tue 6/16/2020 7:29 PM

To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Bcc: amy.silvano@dcnr.alabama.gov <amy.silvano@dcnr.alabama.gov>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; evan.lawrence@dcnr.alabama.gov <evan.lawrence@dcnr.alabama.gov>; keith.henderson@dcnr.alabama.gov <keith.henderson@dcnr.alabama.gov>; mike.holley@dcnr.alabama.gov <mike.holley@dcnr.alabama.gov>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; matthew.marshall@dcnr.alabama.gov <matthew.marshall@dcnr.alabama.gov>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; ken.wills@jcdh.org <ken.wills@jcdh.org>; arsegars@southernco.com <arsegars@southernco.com>; ammcvica@southernco.com <ammcvica@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; jcarlee@southernco.com <jcarlee@southernco.com>; jefbaker@southernco.com <jefbaker@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; tlmills@southernco.com <tlmills@southernco.com>; cggoodma@southernco.com <cggoodma@southernco.com>; clowry@alabamarivers.org <clowry@alabamarivers.org>

1 attachments (388 KB)

2020-06-02 HAT 3 meeting summary.pdf;

HAT 3,

Attached is a summary from our June 2nd HAT 3 meeting that provided an update on the Aquatic Resources study. This summary can also be found on the relicensing website: www.harrisrelicensing.com.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Harris Action Team 3 Meeting Summary
June 2, 2020
1:00 pm to 3:00 pm
Conference Call

Participants:
See Attachment A

Action Items:

- Alabama Power will distribute the Draft Aquatic Resources Study Report to the HAT in July 2020.

Meeting Summary:
Angie Anderegg (Alabama Power) opened the meeting by introducing everyone and described the meeting purpose: for Auburn University to present its research to date and to inform the HAT of remaining work on the Aquatic Resources Study. Jason Moak (Kleinschmidt Associates) stated this meeting was intended to be held March 19, 2020 but was rescheduled due to COVID-19. This study has two main components: 1) a desktop assessment of current and historic information to describe the broad range of effects of the Harris Project (Project); and 2) Auburn University's research, which includes a literature review of temperature requirements of the target fish species, historical water temperature data, fish community surveys, and bioenergetics modeling.

Dennis Devries (Auburn University) summarized the first study objective and described the target species: Alabama Bass, Tallapoosa Bass, Redbreast Sunfish, and Channel Catfish. The Tallapoosa Bass was described several years ago and was formerly known as Redeye Bass in the study area[1]. There are not currently any temperature preference data available for Tallapoosa Bass. The Alabama Bass was also described several years ago and was split from Spotted Bass. Dennis stated that most of the available data are for Channel Catfish, but the majority of these data were gathered from ponds and aquaculture systems instead of moving water.

Ehlana Stell (Auburn University) summarized the second study objective. Historical temperature data below Harris Dam was gathered from three sites: the Harris tailrace, Malone, and Wadley. There were no significant temperature differences between pre- and post-Green Plan. Temperatures at the three sites only differ significantly in the summer. Releases from Harris Dam can cause temperature decreases of about 4°C in the summer but only 1-2°C in the fall.

Eli Lamb (Auburn University) summarized the third study objective. The fish community is being assessed at three sites downstream of Harris Dam (the Harris tailrace, Wadley, and Horseshoe Bend) and at one reference site (Lee's Bridge on the upper Tallapoosa River). Eli described the four sites in terms of location (river kilometers from Harris Dam) and available habitat. Each site is sampled every other month by electrofishing, and all fish are transported back to the lab. Eli described the information gathered from both non-target and target species. Genetic information was also gathered from Alabama Bass and Tallapoosa Bass for identification. Eli showed all the species found at multiple sites and all species unique to each site. He stated that a new species is added to the list each time they sample, so this information is

[1] The study area is the Tallapoosa River from the Harris Dam downstream through Horseshoe Bend.

constantly changing. The growth curves of Alabama Bass, Redbreast Sunfish, and Tallapoosa Bass were presented. This study objective is ongoing.

Ehlana summarized the first part of the fourth study objective. Static respirometry is used to measure the standard metabolic rate. Fish are not swimming during static respirometry, and temperature is held constant. To date, trials have been conducted at 21°C. Swimming respirometry and performance work was also described, which will measure active metabolic rates. The critical swimming speed, or U_{crit}, is being measured. U_{crit} can be described as an assessment of the swimming abilities of fish using the time and velocity at which the fish becomes fatigued. Preliminary U_{crit} data was presented. Alabama Bass showed the highest U_{crit} values. Larger fish can typically swim faster at absolute speeds. Ehlana described VO_2 as the metabolic rate during increases of speed; VO_2 increases with increasing speed. Ehlana detailed the remaining static and swimming respirometry and performance work to be completed in 2020.

Rusty Wright (Auburn University) summarized the second part of the fourth study objective. Rusty defined bioenergetics and stated that much of the energy gained from consumption is lost as metabolic waste and used for respiration and activity. A bioenergetics model can integrate all these factors to determine what energy is left for growth. The bioenergetics model is focusing on habitat effects on growth. Rusty described the components needed to run the bioenergetics model. Small fish have higher consumption and respiration rates per gram than large fish. Consumption increases as water temperature increases until conditions get too warm and consumption decreases. The bioenergetics model can help determine what temperatures could potentially provide the best growth (which is species specific). Growth data is being gathered from otoliths, and caloric density can be gathered from published literature. Currently there is no model for Tallapoosa Bass or Redbreast Sunfish so literature on similar species is being utilized. Previous Channel Catfish models have been constructed from specimens from lakes and ponds instead of lotic systems, so some additional information for that species must be gathered. Rusty noted that simulations will be run in the summer 2020. See presentation in Attachment A.

There was a break for questions. Todd Fobian (Alabama Department of Conservation of Natural Resources (ADCNR)) asked if the Snail Bullhead identification was correct since that species has previously been described in Alabama as only existing in the Chattahoochee River. Eli replied that the identification is likely correct, and Dr. Carol Johnston of Auburn University has been sent these specimens to confirm identification. Todd also wanted to confirm the Skipjack Herring record. Eli stated that both Skipjack Herring and Blueback Herring have been confirmed by Dr. Johnston.

Next, Donna Matthews (Tallapoosa River Heritage) asked if the model that Auburn is making could be used by other researchers and applied to other situations. Rusty said fish are being used from the Tallapoosa River specifically and this population may differ from other populations, but this model could be used in similar studies. Diets of fish in other populations may need to be adjusted, but the basic bioenergetics model should be applicable to other populations. Auburn University stated that bi-monthly sampling will continue through winter 2021 (February 2021); however, the minimum number of fish required for modeling will likely be acquired around August 2020. Eli will also be looking at tagging and tracking fish in the field to monitor their movement in the river. Sarah Salazar (Federal Energy Regulatory Commission (FERC)) reminded HAT 3 participants to check the schedule in the study plan if there is any confusion. Allan Creamer (FERC) asked how the bioenergetics information would be integrated into all the other study plans. Auburn University stated that the sampling in early 2021 will provide

information on the fish community, but all the required information for the bioenergetics work will have already been gathered at that time. Allan asked if the data gathered in early 2021 will be added into the final model. Rusty said it is possible it could feed into the model, but they will likely have enough temperature, diet, and growth data to generate simulations. Angie added that ultimately, the results of this study will be summarized and added to the Preliminary Licensing Proposal. HAT meetings will be held to provide updates as each component of the study is completed.

Martha Hunter (Alabama Rivers Alliance) asked if the 30-minute flushing cycle used in the static respirometry tests was the same length of time as the dam releases. Rusty said the chambers are just flushed to give fish fresh oxygenated water. That is the intermittent approach that allows multiple measurements on one fish. There is also a "pulse" flushing during the swimming tests to simulate the effect of a pulse of water released from the dam, that will be applied along with an exchange of cooler water (4-5 degrees C), simulating the actual environment below Harris Dam. The timing is more about how long it takes to get a good respirometry measurement and is not exactly mimicking the full variation in the river. Martha asked for clarification on whether this study will be mimicking what is happening in the Tallapoosa River. Ehlana said water is being exchanged for about 10-15 minutes to drop the temperature while maintaining a constant speed so the fish are subjected to a change in temperature but not a change in water velocity. Auburn University then monitors changes in the fish caused by changes in temperature, but there is no way to completely mimic the conditions of the Tallapoosa River and all the effects of Harris Dam operations.

Sarah asked about the lack of information on the Tallapoosa Bass and the use of the Alabama Bass as a surrogate species. Is it a concern that there is not enough data on a lotic species? Auburn University stated it would be preferable to have a surrogate lotic species, but there are limitations on what can be used as a surrogate. Rusty said they are looking at temperature parameters in the literature and a surrogate with similar life histories is sufficient. Sarah asked if there were any other surrogate species to be considered as a lotic species. Dennis said these surrogate species were determined after discussion with Alabama Power and ADCNR. A closely related species is ideal, but there is not much physiological data on any Redeye Bass species.

Donna asked if spawning and hatching data will be used in any capacity. Eli said they will be looking at some reproductive measures so they will be looking at gonads but will not be looking directly at spawning and hatching. Jason said as part of the desktop assessment, some spawning and recruitment literature was reviewed, so that portion of the Draft Aquatic Resources Study Report will have some information on those topics.

In addition, Jimmy Traylor (downstream property owner) asked how the feeder creeks (i.e., tributaries on the Tallapoosa River) vary from the mainstem as far as species diversity. Ehlana said other researchers at Auburn University are looking at tributaries but all research for this study is being done in the mainstem of the Tallapoosa River. Rusty said in general, these tributaries may or may not have higher diversity. Jimmy noted that the fish population in the feeder creeks is much less than what it was since the dam was built. Jimmy also noted there is an overall reduction in bugs and frogs. He thinks it would be worth studying. Rusty agreed that there is a link between the mainstem of the Tallapoosa River and tributaries, but other variables have contributed to changes in the aquatic community, including development in the watershed. Jimmy said since construction of Harris Dam, the temperature difference between the creeks and

the dams has reversed with cooler water now in the mainstem of the Tallapoosa River and warmer water in the tributaries.

Next, Drew Morgan (stakeholder) asked if the study scope includes assessing the species above Harris Dam. Eli said that it is not within the scope of this study. Dennis noted there is not enough information, with just one upstream sampling site, to conclude that there is more diversity upstream. Jason said the desktop assessment includes both regulated and unregulated upstream portions of the mainstem of the Tallapoosa River.

Jimmy asked if Elise Irwin (United States Geological Survey) would present data from the study she conducted prior to Harris relicensing. Angie stated that all available information, including Elise Irwin's research, was included in the Summary of R. L. Harris Downstream Flow Adaptive Management and History Research (Appendix E), filed with the Preliminary Application Document (PAD) and this current study will compliment that work. Jimmy then asked who was doing a study on bugs. Angie replied that macroinvertebrate data was included in Appendix E of the PAD. Jason commented that the gut content analysis of collected fish will provide insight into which macroinvertebrates are being utilized for food.

Jason stated that the next step is to release the Draft Aquatic Resources Study Report to the HAT in July 2020. Additional HAT 3 meetings will be held in the fall. Angie will schedule another HAT meeting once everyone has had time to review the Draft Aquatic Resources Study Report and the meeting summary and presentation will also be on the Harris relicensing website. Angie reminded everyone that any comments on the Initial Study Report and Draft study reports should be filed with FERC by June 11, 2020.

ATTACHMENT A
HARRIS ACTION TEAM 3 MEETING ATTENDEES

Angie Anderegg – Alabama Power
Dave Anderson – Alabama Power
Jeff Baker – Alabama Power
Evan Collins – United States Fish and Wildlife Service
Jason Carlee – Alabama Power
Keith Chandler – Alabama Power
Allan Creamer – Federal Energy Regulatory Commission (FERC)
Dennis Devries – Auburn University
Colin Dinken – Kleinschmidt Associates
Jeff Duncan – National Park Service
Amanda Fleming – Kleinschmidt Associates
Todd Fobian – Alabama Department of Conservation of Natural Resources
Chris Goodman – Alabama Power
Lisa Gordon – Environmental Protection Agency
Martha Hunter – Alabama Rivers Alliance (ARA)
Elise Irwin – United States Geological Survey
Carol Knight – Downstream Property Owner
Eli Lamb – Auburn University
Donna Matthews – Tallapoosa River Heritage
Lydia Mayo – Environmental Protection Agency
Ashley McVicar – Alabama Power
Tina Mills – Alabama Power
Jason Moak – Kleinschmidt Associates
Drew Morgan - Stakeholder
Barry Morris – Lake Wedowee Property Owners Association
Sarah Salazar – FERC
Kelly Schaeffer – Kleinschmidt Associates
Ehlana Stell – Auburn University
Jimmy Traylor – Downstream Property Owner
Jack West – ARA
Russell Wright – Auburn University

RE: 6/2 HAT 3 meeting summary

Anderegg, Angela Segars <ARSEGARS@southernco.com>

Wed 6/17/2020 1:52 PM

To: APC Harris Relicensing <g2apchr@southernco.com>
Bcc: amy.silvano@dcnr.alabama.gov <amy.silvano@dcnr.alabama.gov>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; evan.lawrence@dcnr.alabama.gov <evan.lawrence@dcnr.alabama.gov>; keith.henderson@dcnr.alabama.gov <keith.henderson@dcnr.alabama.gov>; mike.holley@dcnr.alabama.gov <mike.holley@dcnr.alabama.gov>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; matthew.marshall@dcnr.alabama.gov <matthew.marshall@dcnr.alabama.gov>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; ken.wills@jcdh.org <ken.wills@jcdh.org>; arsegars@southernco.com <arsegars@southernco.com>; ammcvica@southernco.com <ammcvica@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; jcarlee@southernco.com <jcarlee@southernco.com>; jefbaker@southernco.com <jefbaker@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; tlmills@southernco.com <tlmills@southernco.com>; cggoodma@southernco.com <cggoodma@southernco.com>; clowry@alabamarivers.org <clowry@alabamarivers.org>

HAT 3,

I forgot to attach the presentation from the 6/2 meeting to the meeting summary. Both summary and presentation are now included on the website: www.harrisrelicensing.com.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: APC Harris Relicensing
Sent: Tuesday, June 16, 2020 2:30 PM
To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Subject: 6/2 HAT 3 meeting summary

HAT 3,

Attached is a summary from our June 2nd HAT 3 meeting that provided an update on the Aquatic Resources study. This summary can also be found on the relicensing website: www.harrisrelicensing.com.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: APC Harris Relicensing
Sent: Wednesday, June 17, 2020 10:06 AM
To: Windows Live™ Team
Subject: RE: Tallapoosa river

Hi James,

Thank you for sending us your thoughts. We will incorporate these comments into the stakeholder consultation record for the relicensing effort.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Windows Live™ Team <JIMALLEN1959@hotmail.com>
Sent: Thursday, June 11, 2020 4:23 PM
To: APC Harris Relicensing <g2apchr@southernco.com>
Subject: Tallapoosa river

I am writing you about the flow of water from Lake Harris dam.
We own a cabin on the East bank of the Tallapoosa river and a 19acre island across one fork of the river.
The excessive flow of water released from the dam is eroding the island, and floating the river is nearly
Impossible when the dam is shut off. We need a more constant flow of water, and raising the winter level will only worsen the problem.
I understand that I was to fill out some kind of survey by 5:00, but I could not find out how.

Thanks,
James H. Allen
334-863-0347

Sent from Mail [go.microsoft.com] for Windows 10

APC Harris Relicensing

From: APC Harris Relicensing
Sent: Wednesday, June 17, 2020 10:09 AM
To: Ken Wills
Cc: Mills, Tina L.; Smith, Sheila C.
Subject: RE: Support for Botanical Area Designation of Flat Rock Backcountry Within Harris Relicensing Project

Hi Ken,

Thank you for sending us your thoughts on the botanical area land use classification and for your continued participation in the relicensing process. We will be consulting with stakeholders over the course of the next year to finalize our land use proposal.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Ken Wills <memontei@aol.com>
Sent: Wednesday, June 10, 2020 9:27 PM
To: APC Harris Relicensing <g2apchr@southernco.com>
Subject: Support for Botanical Area Designation of Flat Rock Backcountry Within Harris Relicensing Project

Hello all,

On behalf of the Alabama Glade Conservation Coalition, I want to thank Alabama Power for all their cooperation in working with us to protect the special botanical resources in and around the backcountry granite outcrop habitat at Flat Rock Park. The initial results of the commissioned botanical surveys show that the pristine backcountry outcrops and surrounding backcountry habitats have rare species found in few other places within Alabama and are indeed worthy of the protection afforded by the proposed land use change from Recreation to Natural Undeveloped. In relation and as follow-up on a recent discussion in a HAT meeting, we highly endorse the idea of giving this area its on special Botanical Area designation in the land use plan for the Harris Relicensing Project.

Such a Botanical Area designation should have the same protections afforded lands under the Natural Undeveloped classification as well as additional protections tailored to protecting the special and sensitive botanical resources of this area. Botanical Area classification should emphasize protection of the area from motorized vehicle disturbance (for which Alabama Power has recently made great progress), removal of exotic species such as Chinese Privet (which volunteers from groups like the Glade Coalition could help with), and possibly the reintroduction of fire through controlled burns (which other conservation organizations could possibly help with). The botanists and others involved in the Alabama Glade Conservation Coalition would be happy to help draft specifications for a Botanical Area land use classification as well as a specific management plan for the backcountry area at Flat Rock Park.

Thanks again for all your cooperation in protecting the special backcountry granite outcrop and surrounding habitats at Flat Rock Park. Let us know how we can be of futher assistance in this process.

Thanks,
Kenneth Wills
Acting Coordinator
Alabama Glade Conservation Coalition
(205) 515-9412

June 4th HAT 1 and 5 meeting summary

APC Harris Relicensing <g2apchr@southernco.com>

Thu 6/18/2020 10:51 PM

To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Bcc: damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; keith.henderson@dcnr.alabama.gov <keith.henderson@dcnr.alabama.gov>; mike.holley@dcnr.alabama.gov <mike.holley@dcnr.alabama.gov>; evan.lawrence@dcnr.alabama.gov <evan.lawrence@dcnr.alabama.gov>; matthew.marshall@dcnr.alabama.gov <matthew.marshall@dcnr.alabama.gov>; brian.atkins@adeca.alabama.gov <brian.atkins@adeca.alabama.gov>; tom.littlepage@adeca.alabama.gov <tom.littlepage@adeca.alabama.gov>; jhaslbauer@adem.alabama.gov <jhaslbauer@adem.alabama.gov>; cljohnson@adem.alabama.gov <cljohnson@adem.alabama.gov>; mlen@adem.alabama.gov <mlen@adem.alabama.gov>; fal@adem.alabama.gov <fal@adem.alabama.gov>; djmoore@adem.alabama.gov <djmoore@adem.alabama.gov>; arsegars@southernco.com <arsegars@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; wtanders@southernco.com <wtanders@southernco.com>; jefbaker@southernco.com <jefbaker@southernco.com>

1 attachments (3 MB)

2020-06-04 HAT 1 and 5 Meeting Notes and Presentation.pdf;

HATs 1 and 5,

Attached is a summary, along with the presentation, from our meeting on June 4th. This summary is also on our website: www.harrisrelicensing.com.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Harris Action Teams 1 & 5 Meeting Summary
June 4, 2020
9:00 am to 11:00 am
Conference Call

Participants:
See Attachment A

Action Items:
- Alabama Power determine what historic LiDAR data are available and provide the information to FERC via email.
- Kevin Nebiolo will revise figures so that inundated and non-inundated structures will be differentiated on the figures and these figures will also include the winter pool level (i.e., 1 ft, 2 ft, etc.).

Meeting Summary:
Angie Anderegg (Alabama Power Company (Alabama Power)) opened the meeting by introducing everyone and stated the purpose of the meeting: 1) to present the methodology for analyzing the number of usable recreation structures on Lake Harris at the current winter operating curve and the winter operating curve alternatives; and 2) to present the methodology for analyzing how structures located downstream of Harris Dam might be affected by a change in the winter operating curve during a 100-year flood event.

Colin Dinken (Kleinschmidt Associates (Kleinschmidt)) presented the methods for analyzing recreation structure (i.e., boat dock, pier, etc.) usability at current winter pool and the proposed operating curve change alternatives. Light detection and ranging (LiDAR) was used to gather elevation data around the reservoir. The elevation data will be used to measure the depth of water at each recreation structure at each of the proposed winter operating curve elevations. Field observations will occur during full pool (summer 2020) to verify a subset of structures on Lake Harris, namely those that are not visible on the aerial imagery used for this analysis.

Barry Morris (Lake Wedowee Property Owners Association) asked if the usability of sloughs at the winter operating curve change alternatives was being assessed or was this analysis only for structures. Colin said he was not looking into the usability of the sloughs and Angie emphasized that slough usability at the winter operating curve alternatives is not in the overall study plan.

Keith Henderson (Alabama Department of Conservation of Natural Resources (ADCNR)) stated that ADCNR was not involved in the construction of all public ramps on the Harris reservoir, so it cannot be assumed that every ramp has a 15 percent grade at the bottom. Colin noted he can generate a slope analysis on any ramp to determine the grade.

Sarah Salazar (Federal Energy Regulatory Commission (FERC)) asked what the collection year is for the LiDAR data used for this analysis and if there was historical LiDAR data for comparison. Jason Moak (Kleinschmidt) said the LiDAR data was from 2015 and that it covers all of the surrounding banks of the Harris reservoir but nothing beneath the water's surface. Sarah asked if there was historical LiDAR to be used for sedimentation analysis. Angie said

Alabama Power will determine what historic LiDAR data are available and provide the year information to FERC and stakeholders.

Albert Eiland (Downstream Property Owner) expressed concern that raising the winter operating curve would result in additional water released downstream and subsequent flooding. He noted that for every foot the lake is raised it would increase inundation of downstream property. Colin explained that Kevin Nebiolo (Kleinschmidt) would present the proposed methods for analyzing how an increase in the winter operating curve would affect downstream structures.

James Hathorn (United States Army Corps of Engineers (USACE)) asked if there would be an analysis on the percent of time structures are useable. Kelly Schaeffer (Kleinschmidt) stated this study is determining structure usability during winter pool.

Kevin presented the methods to evaluate how an increase in the winter operating curve could affect downstream structure inundation.

David Bishop (Downstream River User) asked if this analysis was related to the lake or just downstream. Angie replied that this methodology focuses on the structures downstream of Harris Dam. David asked about the accuracy of the generation schedule. Angie noted that this issue has been brought to Alabama Power's attention and they are looking into the best way to address it.

Sarah asked if different types of structures will be differentiated in this analysis. Kevin said this analysis is for any type of structure, habitable or not. Land use data could potentially be differentiated. Sarah said that some landowners have expressed concern about structures such as stairways. Kevin explained the LiDAR provides four points per square meter, which is accurate enough to detect a shed but not necessarily stairs.

James asked if this downstream structure analysis would extend downstream of Martin. Kevin replied that it is extending to Jaybird Landing, the uppermost hydraulic point for Lake Martin.

Sarah asked if there would be maps showing the location of inundated structures for both the lake and downstream. Angie said Alabama Power is only evaluating impacts downstream for a change in the winter pool; therefore, the impact is limited to inundation during a flood event where Alabama Power would be operating under flood control procedures. Kelly stated that for the Operating Curve Change Feasibility Analysis study, Alabama Power is modeling the 100-year design flood to analyze the effect of that flow on downstream structures IF the Harris reservoir is operating one to four feet higher than existing conditions. Sarah commented that hopefully there will be some additional suggested downstream releases to review. The Downstream Release Alternatives study is separate from the Operating Curve Change Feasibility Study, and those downstream release alternatives in that study are not affected by the 100-year flood. Mike Hross (Kleinschmidt) stated that the range of minimum flows in the Downstream Release Alternatives study would likely have a negligible effect on inundation downstream compared to the flood flow. The HEC-ResSim model could evaluate normal and flood control operations at Harris Dam with other minimum flow alternatives to determine any downstream effects on structures.

James asked if any other high flow events (i.e., 10, 15, 25, 50-year flood events) other than the 100-year flood would be analyzed. Angie explained that the 100-year flood event scenario is used by the Federal Emergency Management Agency (FEMA) and Alabama Power will be using

that flood event scenario to make decisions regarding changes in Harris Project operations. If FERC requires additional high flow events for their analysis, Alabama Power will model those additional high flow events. Sarah stated if the USACE or other stakeholders have a high flow event scenario they want Alabama Power to analyze, this request should be filed with comments on the Initial Study Report (ISR) by June 11, 2020. Kelly stated that any requests for additional analysis and/or additional studies need to follow FERC regulations. Sarah agreed and said that if anyone wants to request additional studies or request additional analyses that were not incorporated into the April 12, 2019 FERC-approved study plan, stakeholders should follow 18 CFR §5.15.

Martha Hunter (Alabama Rivers Alliance (ARA)) asked if the 100-year flood was happening more often. Kenneth Odom (Alabama Power) said the 100-year storm is a design storm based on an actual event that was scaled to reflect a 100-year event. Stacey Graham (Alabama Power) noted that the 2003 flood event was closest to a 100-year event during the 60 years of data in the flood frequency analysis. Stacey explained that there was enough data from both dry and wet years in the flood frequency analysis to be confident in the 100-year design flood. James stated the USACE will likely submit comments to analyze other high flow scenarios but may have to wait until an operating curve change is selected. Monte Terhaar (FERC) noted that now is the time to state and evaluate any other modeling scenarios.

Sarah asked about the induced surcharge function and storage areas and if these areas are where erosion is occurring. Mike said the location of storage areas (backwater areas and tributaries) will be defined in the Final Operating Curve Change Feasibility Analysis study report and it is possible to overlay those areas with areas that are of concern with regard to erosion.
Charles Denman (Downstream Property Owner) asked about the duration of the 100-year storm event and whether a map showing the contours, flooded land, and structures would be developed. Stacey noted that both the beginning and the end of an event were captured and Mike explained there was no actual hydrologic simulation, just flow analysis. Kenneth stated Alabama Power uses the duration of the actual storm event rather than a set duration. Angie stated that this information is further described in the Phase 1 Draft Operating Curve Change Feasibility Analysis Report. Kevin noted that during this Phase 2 analysis, Alabama Power will provide maps showing the contours and inundated structures.

Jack West (ARA) asked about the primary benefits of raising the winter operating curve. Angie explained that the primary reason for assessing the winter operating curve change is the potential for increased recreation opportunities during the winter. An operating curve change was requested by stakeholders during 2017 discussions. Alabama Power is evaluating both beneficial and adverse effects of raising the winter operating curve in Phase 2 of this study.

Albert asked how raising the winter pool would affect areas downstream. Kenneth explained that using a 100-year design storm, a one to four-foot increase in winter pool would increase the water surface elevation downstream from the increased releases from Harris Dam. Kelly emphasized that Alabama Power is still gathering information and data from other relicensing studies and that they have not proposed any changes in Harris Project operations at this time.

Linda Allen (Downstream Property Owner) stated that most of the acreage her family owns is an island called Price Island (~19 acres) and asked if it would be evaluated. Angie and Sarah emphasized that the scope of the study is from Harris Dam downstream through Horseshoe Bend.

David asked if there are any studies detailing the difference between a 50-year flood and a 100-year flood. He also asked how similar downstream conditions are (in terms of elevation and inundation) to a 100-year flood when both generators are operating. There is no comparison since normal operations is far less than a 100-year flood event. Angie explained that Alabama Power is assessing modifications to current Harris Project operations, not pre-dam conditions. David asked if Alabama Power was prepared for a 100-year flood event and asked how the project would operate. Angie noted that detailed information on how the project operates and the models used for these studies can be found on the project website (www.harrisrelicensing.com). One meeting that may be particularly helpful to review is the HAT 1 meeting from September 11, 2019. Kenneth added that a 100-year flood basically has a 1 percent chance of occurring in any given year and Alabama Power operates according to flood control guidelines developed and approved by the USACE. Monte stated that in most cases, FERC uses the 100-year flood scenario as their standard, but that does not exclude the analysis of other flood events. Kenneth concluded that Alabama Power works with the National Weather Service and USACE on Harris Project operations during flood events.

Donna Matthews (Downstream Property Owner) asked if basing the model on a 100-year flood potentially reduces the overall impact on downstream resources compared to effects from more frequent but lesser storm events. Kenneth said the 100-year flood analysis does not decrease the effect of smaller events and that smaller events have not been modeled.

Albert mentioned the gage at Wadley and a high flow event in early 2020. Angie stated that this particular question was addressed during the ISR meeting and a response provided in the ISR meeting summary.

Sarah commented that the maps shown in Kevin's presentation identify all structures using the same color regardless of whether they were within the inundation boundary and requested that the final analysis display inundated structures with a different color than non-inundated structures. Kevin said that inundated and non-inundated structures will be differentiated on the figures and these figures will also include the winter pool level (i.e., 1 ft, 2 ft, etc.).

David asked if FERC had ever denied a license for a project as large as Harris. Sarah was not familiar with any but encouraged David to send her an email so she could contact him with that information.

Sarah reviewed the relicensing schedule, reminding everyone the information gathering process is ongoing and Alabama Power's draft proposal for Harris Project operations will be presented in the Preliminary Licensing Proposal. Alabama Power will file their Final License Application in November 2021. The schedule is available in the November 16, 2018 Scoping Document 2. Sarah encouraged everyone to read that document and contact her with any questions.

Angie concluded that the meeting notes will be posted to harrisrelciensing.com and reiterated that comments on the ISR are due June 11, 2020 and should be filed with FERC.

ATTACHMENT A
HARRIS ACTION TEAMS 1 AND 5 MEETING ATTENDEES

Linda Allen – Downstream Property Owner
Angie Anderegg – Alabama Power Company (Alabama Power)
Dave Anderson – Alabama Power
Jeff Baker – Alabama Power
David Bishop – Downstream Property Owner
Allan Creamer – Federal Energy Regulatory Commission (FERC)
Charles Denman – Downstream Property Owner
Colin Dinken – Kleinschmidt Associates (Kleinschmidt)
Albert Eiland – Downstream Property Owner
Amanda Fleming – Kleinschmidt
Todd Fobian – Alabama Department of Conservation of Natural Resources (ADCNR)
Tina Freeman – Alabama Power
Chris Goodman – Alabama Power
Stacey Graham – Alabama Power
James Hathorn – United States Army Corps of Engineers (USACE)
Keith Henderson – ADCNR
Martha Hunter – Alabama Rivers Alliance (ARA)
Mike Hross – Kleinschmidt
Carol Knight – Downstream Property Owner
Fred Leslie – Alabama Department of Environmental Management (ADEM)
Matthew Marshall – ADCNR
Donna Matthews – Downstream Property Owner
Rachel McNamara – FERC
Tina Mills – Alabama Power
Jason Moak – Kleinschmidt
Barry Morris – Lake Wedowee Property Owners Association
Kevin Nebiolo – Kleinschmidt
Kenneth Odom – Alabama Power
Jennifer Rasberry – Alabama Power
Sarah Salazar – FERC
Kelly Schaeffer – Kleinschmidt
Chris Smith – ADCNR
Sheila Smith – Alabama Power
Thomas St. John – Alabama Power
Monte Terhaar – FERC
Jack West – ARA

R.L. Harris Dam Relicensing
FERC No. 2628

HAT 1 & 5 Meetings
June 4, 2020

HARRIS DAM
RELICENSING

Operating Curve Change Feasibility Analysis

Phase II Lake Recreation Structure Usability at Winter Pool Alternatives

HARRIS DAM
RELICENSING

Phone Etiquette

- ❑Be patient with any technology issues
- ❑Follow the facilitator's instructions
- ❑Phones will be muted during presentations
- ❑Follow along with PDF of presentations
- ❑Write down any questions you have for the designated question section
- ❑Clearly state name and organization when asking questions
- ❑Facilitator will ask for participant questions following each section of the presentation

HARRIS DAM
RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Objectives Described in the Study Plan

- Evaluate "…the number of private docks usable during the current winter drawdown and the lowest possible elevation that public boat ramps can be used."
- Private docks defined as boathouses, floats, piers, wet slips, and boardwalks
- Will "…compare the number of access points (both private docks and public boat ramps) available at each 1-foot increment change…"

Methods

- LiDAR used to measure elevation (785, 786, 787, 788, 789 ft msl contours)
- Elevation data used to calculate depth at point
- Depth for points beyond the 785 ft msl contour will be estimated by slope analysis

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Boathouses

- Point moved to the back of each of these structures
- Structure considered usable with 2 ft of water at the back edge

HARRIS DAM
RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Floats

- Point moved to the back of each of these structures
- Structure considered usable with 2 ft of water at the back edge

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Piers

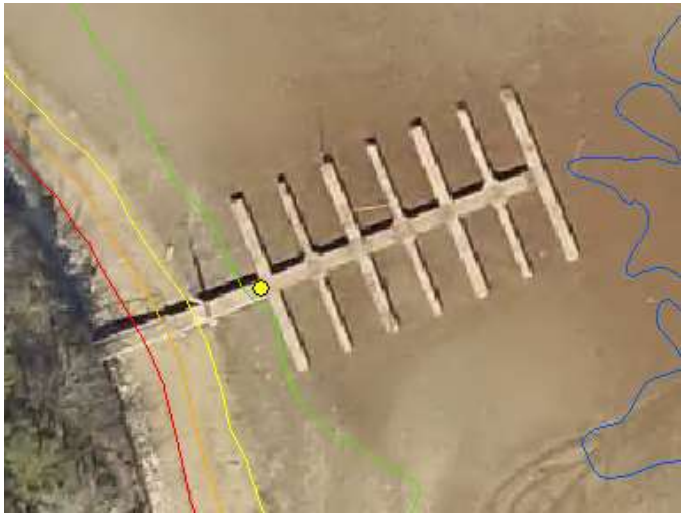
- Classified into 3 subcategories:
  - Platform (*bottom left*):
    - Piers with a square-shaped platform on the end
    - Point moved to back edge of the platform
    - Analyzed similarly to floats
  - Mooring (*bottom right*):
    - Straight piers > 30 ft
    - Point moved 30 ft back from front edge
  - Fishing (*right*):
    - Straight piers ≤ 30 ft
    - Point moved halfway back from the front edge
- Depth of 2 ft to be usable

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Wet Slips

- Some oriented parallel to the bank (*bottom left*) and some perpendicular (*bottom right*)
- The back edge is always the outside edge facing the bank
- Wet slips with multiple slips (*right*) will be considered usable when all slips are usable
- Depth of 2 ft to be usable



HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Boardwalks

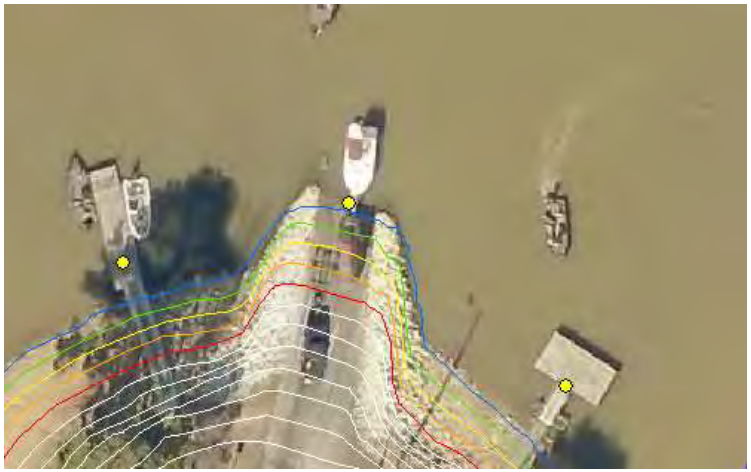
- Point moved to front of structure
- Objective is aesthetics
- Depth of 1 ft at point

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Public Boat Ramps

- ADCNR typically uses the following criteria for public ramps at low pool:
  - 15% grade at bottom portion of ramp
  - Depth of 4.5 ft at the end of the ramp
  - Able to launch up to 26 ft boat at low pool

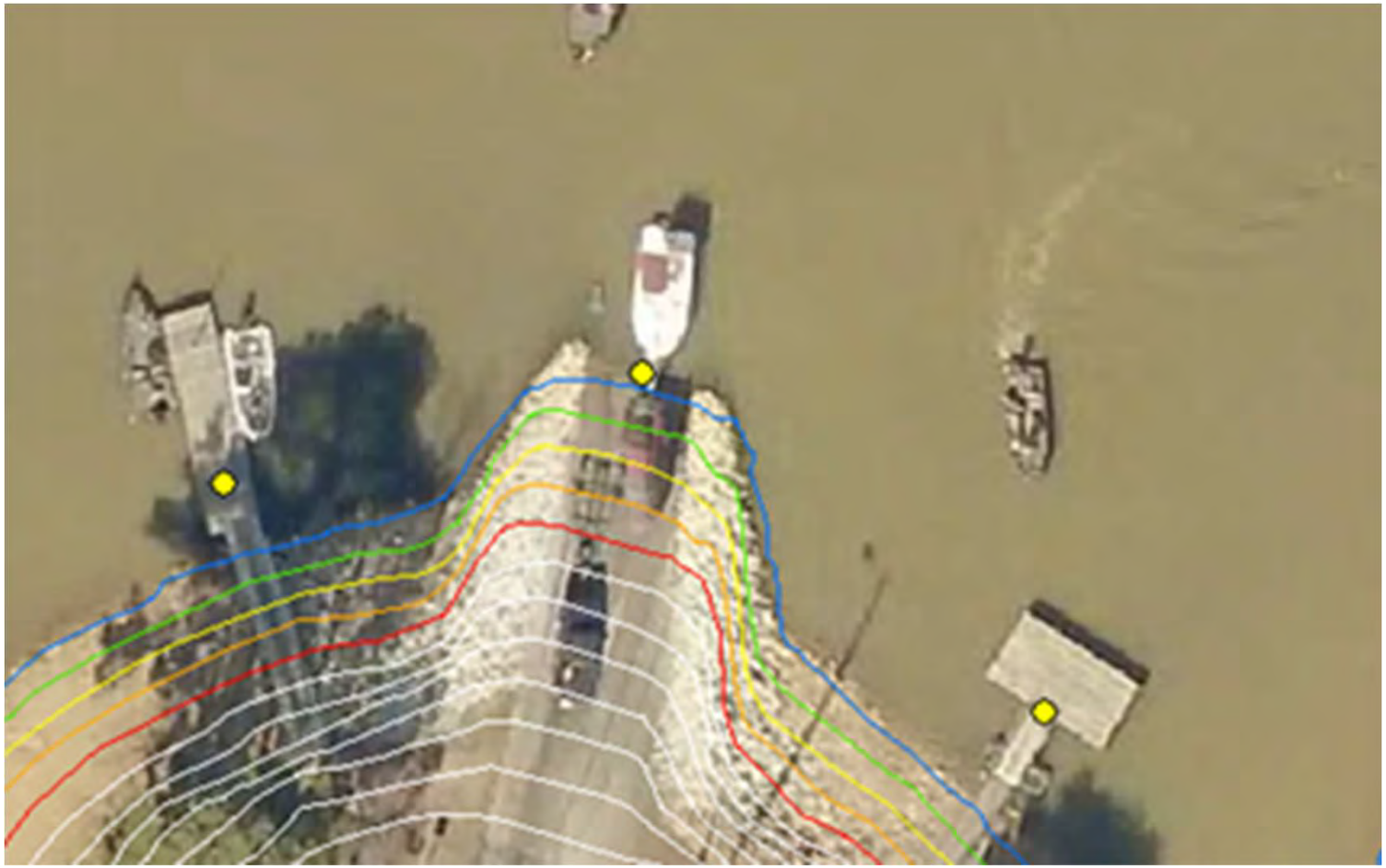


HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Public Boat Ramps

- Highway 48 Bridge:
  - Built using ADCNR standards
  - Usable at 785 ft msl



HARRIS DAM
RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Public Boat Ramps

- Lee's Bridge:
  - Bottom of ramp is ~785.5 ft msl
  - Use a slope analysis to determine the grade
  - Possibly usable ~790.0 ft msl

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Field Observations

- No imagery (*left*):
  - Imagery predates structures
  - ~10.0% of structures
- Not visible (right):
  - Structure obscured by foliage or shadow
  - ~2.5% of structures

HARRIS DAM
RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Presentation of Data: All Structures

The number and percentage of all usable structures at each winter pool alternative

Winter Pool Elevation (feet msl)	Number of Usable Structures	Percent Usable Structures
785		
786		
787		
788		
789		
>789		

HARRIS DAM RELICENSING

Recreation Structure Usability at Winter Pool Alternatives

Presentation of Data: By Structure

The number and percentage of usable structures by type at each winter pool alternative

Winter Pool Elevation (feet msl)	Number of Usable Structures	Percent Usable Structures
Boardwalks		
785		
786		
787		
788		
789		
>789		
Boathouses		
785		
786		
787		
788		
789		
>789		
Floats		
785		
786		
787		
788		
789		
>789		

HARRIS DAM RELICENSING

Questions?

R.L. Harris Dam Relicensing
FERC No. 2628

HAT 1 Meeting
June 4, 2020

Operating Curve Change Feasibility Analysis

Phase II Downstream Structure Survey

HARRIS DAM
RELICENSING

Phone Etiquette

- ❑Be patient with any technology issues
- ❑Follow the facilitator's instructions
- ❑Phones will be muted during presentations
- ❑Follow along with PDF of presentations
- ❑Write down any questions you have for the designated question section
- ❑Clearly state name and organization when asking questions
- ❑Facilitator will ask for participant questions following each section of the presentation

HARRIS DAM
RELICENSING

Harris Downstream Structure Survey

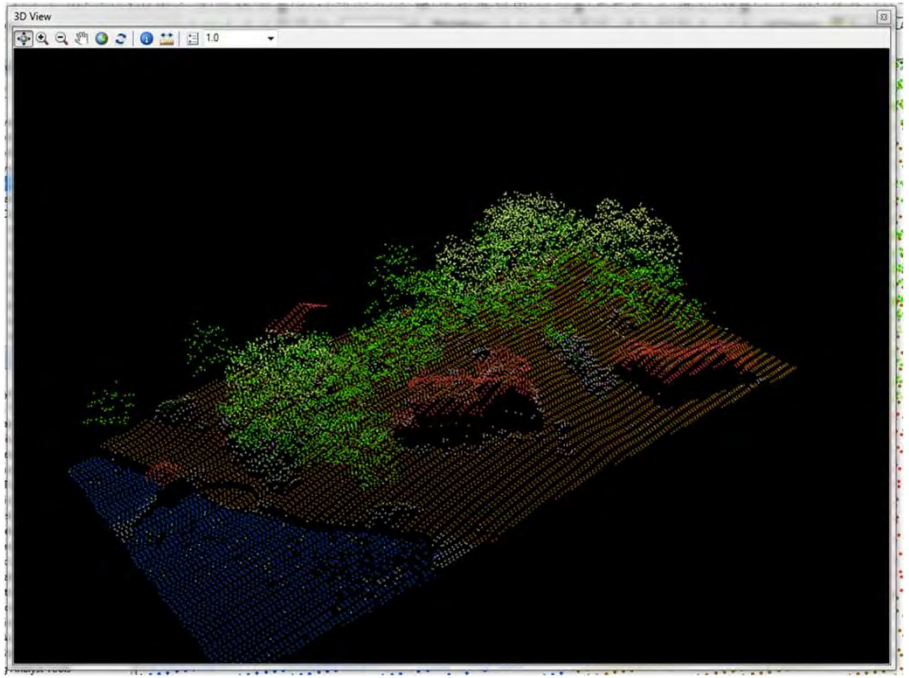
- An operating curve change may affect areas downstream of Harris Dam
  - Effects are associated with flooding

- Phase 2 of the Operating Curve Change Feasibility Analysis will include:
  - Identifying affected structures
  - # of structures
  - Location
  - Depth & duration of inundation

- Identifying structures is no small task

Methods: Remote Sensing

- LiDAR – 4 points per m^2
- 1 m USDA NAIP 4 band image (R, G, B, NiR)
- Classification Workflow:
  - Data management
  - Create training data
  - Classify image pixels
  - QAQC – Confusion Matrix



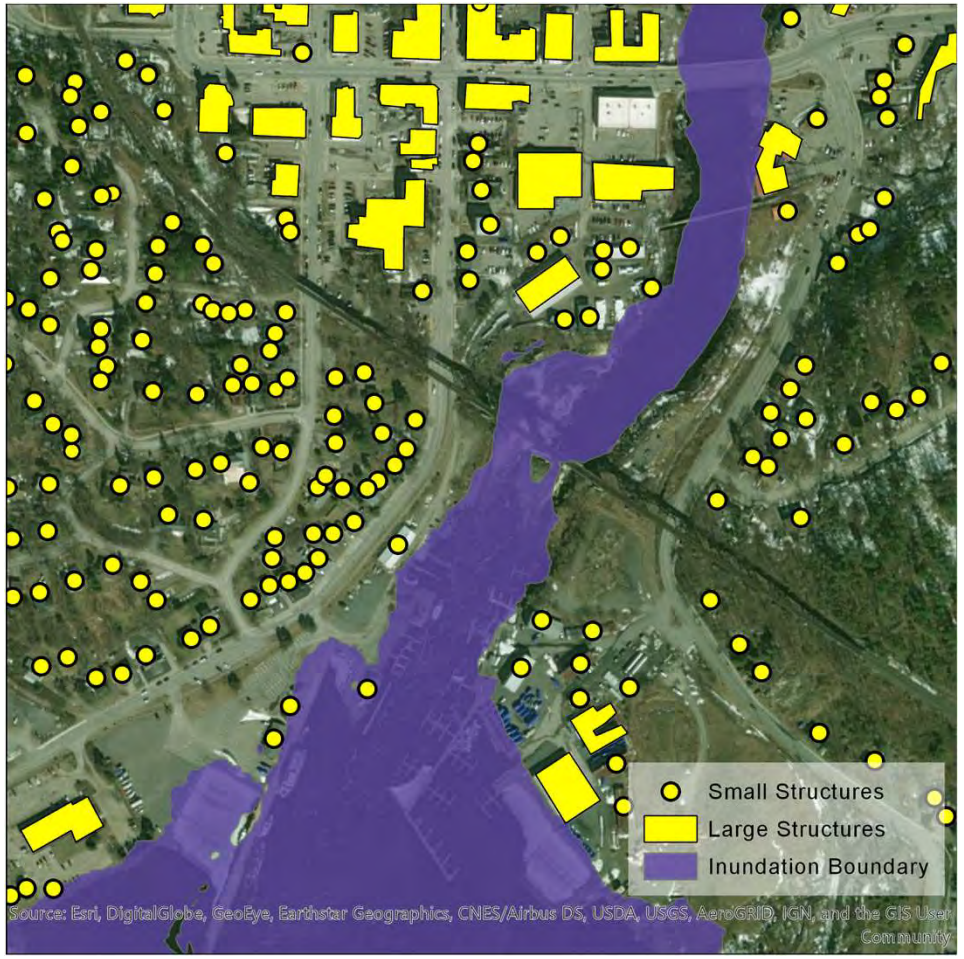
Methods: OBIA

- Object Based Image Analysis in ArcGIS Pro Image Analyst

1. Group pixels into objects - segmentation
2. Create training data
3. Classify Image
4. Assess quality with Confusion Matrix
5. Heads up digitizing
6. Spatial intersection & summarize

Anticipated Output

- Once identified – we will use a GIS to find structures impacted with a spatial intersection
- Series of maps showing location of all structures with symbols for flooded vs. not flooded
- Summary statistics in report
  - # of structures affected by rule curve
  - Min., Avg., Max. depth of inundation
  - Min., Avg., Max. duration of inundation
- Results will be in Phase II Report



APC Harris Relicensing

From: David Smith <inspector_003@yahoo.com>
Sent: Thursday, June 18, 2020 5:55 PM
To: APC Harris Relicensing
Subject: Re: June 4th HAT 1 and 5 meeting summary

Received, thank you.

Sent from Yahoo Mail for iPhone [overview.mail.yahoo.com]

On Thursday, June 18, 2020, 5:53 PM, APC Harris Relicensing <g2apchr@southernco.com> wrote:

> HATs 1 and 5,
>
> Attached is a summary, along with the presentation, from our meeting on June 4th. This summary is also on our website: www.harrisrelicensing.com [harrisrelicensing.com].
>
> Thanks,
>
> **Angie Anderegg**
>
> Hydro Services
>
> (205)257-2251
>
> arsegars@southernco.com

APC Harris Relicensing

From: Baker, Jeffery L.
Sent: Monday, June 22, 2020 9:42 AM
To: Holbrook, Shannon; Collins, Evan
Cc: Anderegg, Angela Segars; Jason Moak
Subject: NLEB Streamlined Consultation

Shannon and Evan,

Thank you discussing the recent request by FERC for Alabama Power to complete the streamlined consultation process for Northern Long-eared Bat (NLEB) as part of the ongoing Harris re-licensing process. Based on our discussion, USFWS would not recommend completion of the streamlined consultation due the overlap in range, specifically within the Harris project boundary, of the Indiana Bat with the NLEB. Evan, thank you for suggesting I discuss this issue with Shannon to confirm this position. Shannon, could you please confirm this response so that it can be documented. Please feel free to call if you have any questions.

Thanks,

Jeff Baker
Biologist
Alabama Power
Environmental Affairs
744 Highway 87
GSC #8
Calera, AL, 35040
Tel 205-351-1631
jefbaker@southernco.com

ALABAMA NEWSCENTER
GOOD NEWS FROM HOME

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Flat Rock Park a ‘natural wonder’ for recreation and biological diversity

By Michael Sznajderman

June 23, 2020

Elf orpine is one of the rare and colorful plants growing at Flat Rock Park in Randolph County. (Katie Horton)

Alabama is blessed with many places of natural beauty and biological importance. That is the basis for 2020 being designated as the “Year of Natural Wonders” (https://tourism.alabama.gov/2020/04/explore-alabamas-amazing-natural-wonders/) by the Alabama Tourism Department.

State officials have compiled their list of “20 for 2020” (https://alabama.travel/experience-alabama/outdoor/natural-wonders) natural wonders to explore. The designation has also spurred conversations about other unique places in the state where biological diversity is thriving.

One of those places is Flat Rock Park (https://toureastalabama.com/attraction/flat-rock-park/) in Randolph County, which was recently included in a list of the “Next 10 natural wonders” (https://bhamnow.com/2020/06/15/alabama-natural-wonders-2020/) in Alabama.

“Just to see that habitat – it is absolutely amazing,” said Dan Spaulding, senior curator at the Anniston Museum of Natural History (https://www.exploreamag.org/) and a co-author of a recent inventory of plant life found at or near Flat Rock Park.

Operated and managed by Alabama Power (https://apcshorelines.com/recreation/parks/), Flat Rock is a 25-acre day-use park that sits on a shelf of granite overlooking the company's Lake Harris (https://apcshorelines.com/our-lakes/harris/), also known as Lake Wedowee. Part of the granite shelf, or outcrop, extends 20 acres beyond the recreation area and hosts a remarkable variety of plants.

(https://i2.wp.com/alabama
content/uploads/2020/06/F
Katie-Horton.jpg?ssl=1)

(https://i0.wp.com/alabamanewscenter.com/content/uploads/2020/06/Flat-Rock-bloom-by-Katie-Horton.jpg?ssl=1)

Tom Diggs, a botanist at the University of North Georgia (https://ung.edu/), led the survey team that included Spaulding and Katie Horton, a Ph.D. student at the University of Missouri (https://missouri.edu/). They spent months identifying the plant life on and near Flat Rock. In a report issued in February, the team tallied 365 plant species growing at the site during the course of the 2019 growing season. Among them were 67 species never recorded in the county before. The spotted scorpion weed in Alabama grows only on rock outcrops in Randolph County.

Granite outcrops are rare and present a unique habitat for plants that are tough enough to exist in harsh conditions, especially during the heat of summer.

“They look like a moonscape,” Spaulding said.

And yet, during the hottest times of the year, granite outcrops can explode in colorful flora, Diggs said. “Late winter, early spring you have these incredible plants that come out of these vernal pools.”

Vernal pools are small, eroded depressions that fill up with clear, nutrient-poor water that collects off the rock shelf during rains.

One of the more showy and rare plants at Flat Rock is the elf orpine, which – if conditions are ripe – will bloom in a burst of red with tiny white blooms, Diggs said.

In summer, the granite outcrop can explode with thousands of knee-high stone mountain daisies and longleaf sunflowers, along with purple, small-head blazing star.

“These flat rock outcrops, large numbers of species are associated with them and them only,” Diggs said.

(https://i2.wp.com/alabamanewscenter
content/uploads/2020/06/Flat-Rock-
landscape-2-by-Katie-Horton.jpg?ssl=1)

In the report, surveyors documented 10 “species of conservation concern” found at Flat Rock that face some, or even serious, risk of extinction because of their rarity, their restricted range or because their populations have seen steep declines. Among them are the spotted scorpion weed, Harper’s dodder and granite flatsedge.

The survey listed a number of invasive plants, such as Japanese privet, yellow bristlegrass and sheep sorrell, that have made their way into the ecosystem.

Jeff Baker, a biologist at Alabama Power, said the company is working with the survey team, the Alabama Glades Conservation Coalition and others to help preserve the habitat, which is adjacent to but distinct from Flat Rock Park’s popular recreation area. He said the company has taken steps to protect the area from vehicular traffic while still allowing pedestrian access for those who want to enjoy its scenic beauty and botanical bounty.

“Alabama Power has been very responsive,” Diggs said.

Baker said, “This is a unique opportunity to work with others to protect the outcrop and help manage the unique and rare plant community so that people can enjoy it for years to come.” And with Pollinator Week **(https://www.pollinator.org/pollinator-week)** 2020 underway, Baker noted, “Many of the flowering plants found at the outcrop are an important food source for many pollinators as well. Pollinators benefit from conservation of natural areas like this.”

Spaulding said the diversity of plant species at Flat Rock isn't the only reason protecting the granite outcrop habitat is important.

"There's a lot of reasons you want to preserve the diversity. It's an interwoven web – a delicate balance in nature. We don't know, if you remove species, what will happen and topple.

"It's not only the diversity. It's beneficial to humankind – for its educational value, and for its psychological and aesthetic value," Spaulding said. "It is just beautiful."

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Next Story ›
(https://alabamanewscenter.com/2020/06/23/alabama-home-sales-decline-as-anticipated-in-may-vs-last-year/)

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(https://alabamanewscenter.com/2020/07/01/new-public-pavilion-opens-at-smith-lake/)

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Alabama Power Foundation opens application period for Elevate grants
(https://alabamanewscenter.com/2020/06/30/alabama-power-foundation-opens-application-period-for-elevate-grants/)
The grants of up to $10,000 help nonprofits expand their impact.

(https://alabamanewscenter.com/2020/06/30/alabama-power-foundation-opens-application-period-for-elevate-grants/)

From: Holbrook, Shannon <shannon_holbrook@fws.gov>
Sent: Tuesday, June 23, 2020 3:01 PM
To: Baker, Jeffery L.; Collins, Evan R
Cc: Anderegg, Angela Segars; Jason Moak
Subject: Re: [EXTERNAL] NLEB Streamlined Consultation

Jeff

You are correct. Completion of the streamlined consultation wouldn't be appropriate since the range of the Indiana bat, which is not covered under the 4d rule, overlaps with the range of the NLEB. Thank you for coordinating with us on this issue.

Shannon

****
Shannon Holbrook
Alabama Ecological Services Field Office
U. S. Fish and Wildlife Service
1208-B Main Street
Daphne, AL 36526
Office: (251) 441-5871 Fax: (251) 441-6222
shannon_holbrook@fws.gov
****

From: Baker, Jeffery L. <JEFBAKER@southernco.com>
Sent: Monday, June 22, 2020 9:42 AM
To: Holbrook, Shannon <shannon_holbrook@fws.gov>; Collins, Evan R <evan_collins@fws.gov>
Cc: Anderegg, Angela Segars <ARSEGARS@southernco.com>; Jason Moak <jason.moak@kleinschmidtgroup.com>
Subject: [EXTERNAL] NLEB Streamlined Consultation

Shannon and Evan,

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Thanks,

Jeff Baker

Biologist
Alabama Power
Environmental Affairs
744 Highway 87
GSC #8
Calera, AL, 35040
Tel 205-351-1631
jefbaker@southernco.com

APC Harris Relicensing

From: Baker, Jeffery L.
Sent: Tuesday, June 23, 2020 10:21 AM
To: Collins, Evan; Fobian, Todd; Anderegg, Angela Segars
Cc: Carlee, Jason; Jason Moak
Subject: Fine-lined pocketbook surveys
Attachments: Proposed sample locations.docx

Evan,

Thank you for working with us to sample tributaries of Lake Harris for fine-lined pocketbook. We wish you could join us but we understand the current need for caution concerning overnight travel. Based on our discussions last year, while surveying areas in the mainstem Tallapoosa for suitable fine-lined pocketbook habitat, we plan to sample the locations described below. Furthermore, we will focus our efforts in the mainstem Tallapoosa River, downstream of the Co Rd 36 crossing, to those suitable areas identified during last year's survey effort.

See the attached map showing proposed fine-lined pocketbook survey locations for:

1. the mainstem Tallapoosa River from Co Rd 36 (33.550745, -85.609274) to Hwy 431 (33.509628, -85.624566).
2. Ketchepedrakee Creek: areas upstream and downstream of Co Rd 201 (33.451611, -85.619928)
3. Little Tallapoosa River : 2.5 miles between Co Rd 59 (33.414079, -85.432259) and Old Hwy 431 (33.420481, -85.627730)
4. Pineywood Creek from Co Rd 270 (33.389430, -85.516747) to approximately Hwy 431 (33.381906, -85.516448)

As we discussed, we will also sample two of the following tributaries described below. Tributaries of the mainstem Tallapoosa River were chosen because of the known occurrence of fine-lined pocket in portions of the river upstream of the project boundary. Selection will be based on suitability of habitat and logistical considerations such as access. Those potential tributaries are:

Sandy Creek at Co Rd 7 (33.403985, -85.568055)
Mad Indian Creek at Co Rd 113 (33.350009, -85.635460) or some private property owned by Servants in Faith and Technology (still need to make contact with them)
Little Ketchepedrakee Creek at Co Rd 313 (33.432489, -85.635134)
Lost Creek at Co Rd 313 (33.420481, -85.627730).

Based on the draft study plan, we will perform at least one hour of qualitative effort per mile of stream. This effort will be focused in areas with suitable habitat. All mussels will be identified, photographed, and returned to the site of capture. If congregations of mussels are identified, quantitative surveys, using ¼ meter quadrats, will be performed. Dominant habitat will also be recorded for each sample reach.

If weather permits, we may survey some of the smaller tributaries this week but will target the mainstem Tallapoosa River and the larger tributaries starting the week of June 29. Please let us know if you have additional suggestions.

Todd,

Thanks for your interest in joining the field sampling. Please let me know if you are available to join us. If you are interested, but not available next week, let us know that as well and we will attempt to accommodate your schedule so that you can join us in the field.

Thanks,

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Tel 205-351-1631
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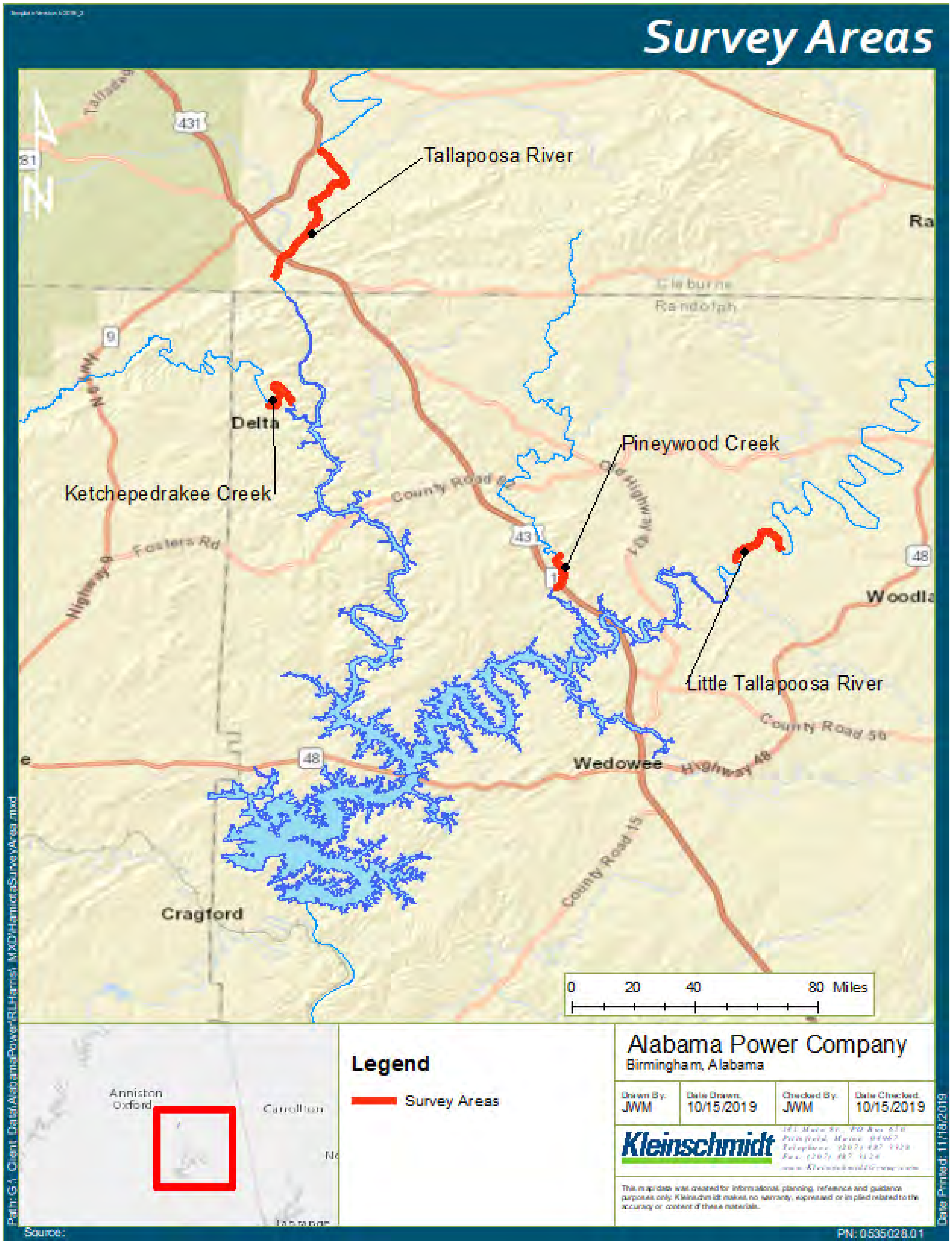
Survey Areas
Tallapoosa River
Ketchepedrakee Creek
Pineywood Creek
Little Tallapoosa River
Delta
Wedowee
Cragford
Woodla
Cleburne
Randolph
County Road 82
Fosters Rd
Highway 9
Old Highway 431
County Road 56
Highway 48
County Road 15
431
9
43
48
0 20 40 80 Miles
Anniston
Oxford
Carrollton
Legend
Survey Areas
Alabama Power Company
Birmingham, Alabama
Drawn By: JWM
Date Drawn: 10/15/2019
Checked By: JWM
Date Checked: 10/15/2019
Kleinschmidt
This map data was created for informational, planning, reference and guidance purposes only. Kleinschmidt makes no warranty, expressed or implied related to the accuracy or content of these materials.
Source:
PN: 0535028.01
Date Printed: 11/18/2019

APC Harris Relicensing

From: Collins, Evan R <evan_collins@fws.gov>
Sent: Thursday, June 25, 2020 2:02 PM
To: Baker, Jeffery L.; Fobian, Todd; Anderegg, Angela Segars
Cc: Carlee, Jason; Jason Moak
Subject: Re: [EXTERNAL] Fine-lined pocketbook surveys

Hi, Jeff. Thanks for notifying me of the upcoming surveys for the finelined pocketbook. I'm sorry I won't be able to join you. I recall our discussions last year regarding the site selection and have no further comment on that. I support your survey methods. One question: do you have an approximate definition for mussel congregation? It may be worth articulating an approximate range that would trigger quantitative surveys.

Good luck!
Evan

--
Evan Collins
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Alabama Ecological Services Field Office
1208-B Main Street
Daphne, AL 36526
251-441-5837 (phone)
251-441-6222 (fax)
evan_collins@fws.gov

From: Baker, Jeffery L. <JEFBAKER@southernco.com>
Sent: Tuesday, June 23, 2020 10:21 AM
To: Collins, Evan R <evan_collins@fws.gov>; Fobian, Todd <Todd.Fobian@dcnr.alabama.gov>; Anderegg, Angela Segars <ARSEGARS@southernco.com>
Cc: Carlee, Jason <JCARLEE@southernco.com>; Jason Moak <jason.moak@kleinschmidtgroup.com>
Subject: [EXTERNAL] Fine-lined pocketbook surveys

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Thanks,

Jeff Baker
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Alabama Power
Environmental Affairs
744 Highway 87
GSC #8
Calera, AL, 35040
Tel 205-351-1631
jefbaker@southernco.com

Alabama Power

APC Harris Relicensing

From: Duncan, Jeffrey R <Jeff_Duncan@nps.gov>
Sent: Friday, June 26, 2020 12:00 PM
To: APC Harris Relicensing
Subject: NPS comments on Erosion Study
Attachments: Signed RL Harris Comment Ltr.pdf

Please find our comment letter attached to this message pursuant to the Initial Study Report for the Sediment and Erosion Study. I recognize the comments are overdue, and I would appreciate your consideration of them. If you have any questions, please don't hesitate to contact me.

Best, Jeff Duncan

Jeffrey R. Duncan, PhD.
Regional Aquatic Ecologist
Science and Natural Resources Management
National Park Service, Southeastern United States
100 West Martin Luther King, Jr. Blvd. Suite 215
Chattanooga, TN 37402
Ph: (423) 987-6127

"If we are going to succeed in preserving the greatness of the national parks, they must be held inviolate. They represent the last stands of primitive America. If we are going to whittle away at them we should recognize at the very beginning that all such whittlings are cumulative and the end result will be mediocrity."

- Newton Drury, Director National Park Service, 1940-1951

United States Department of the Interior

NATIONAL PARK SERVICE
Atlanta Federal Center
1924 Building
100 Alabama Street, SW
Atlanta, GA 30303

1.A.2 (SERO-NR)

IN REPLY REFER TO:

Angie Anderegg
Harris Relicensing Project Manager
Alabama Power Company

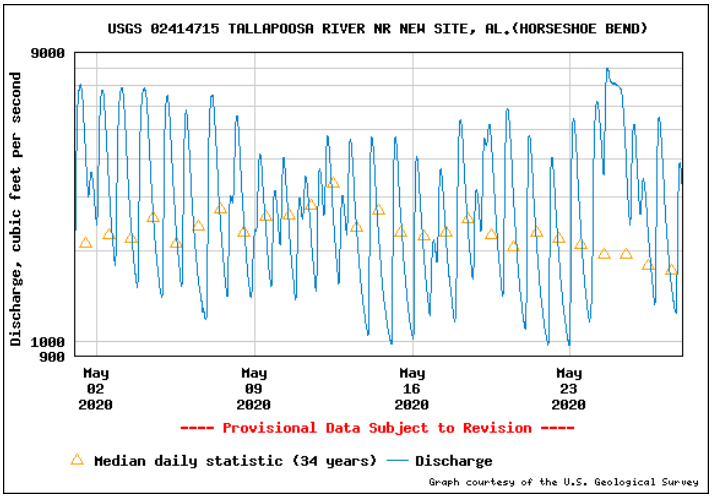
Dear Ms. Anderegg:

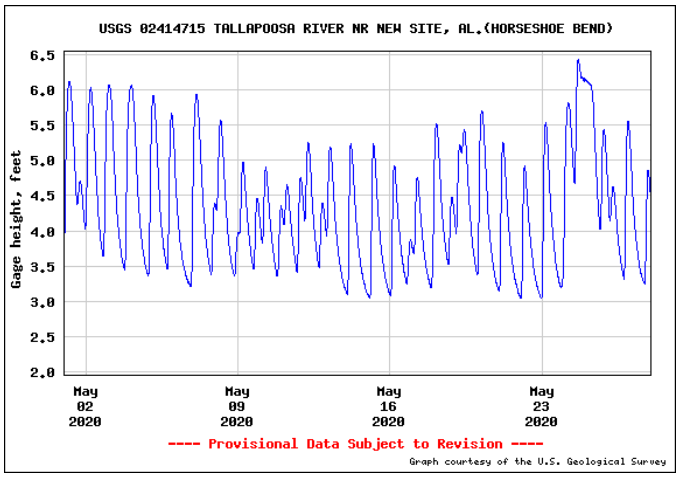
The National Park Service (NPS), South Atlantic-Gulf Region, in coordination with Horseshoe Bend National Military Park, offers the following comments in response to Alabama Power Company's Draft Erosion and Sedimentation Study Report filled with the Federal Energy Regulatory Commission (FERC) on April 10, 2020 pursuant to the relicensing of the R.L. Harris Hydroelectric Project (P-2628).

Background:

Federal Power Act regulations (18 C.F.R. 4.38(a), 18 C.F.R. 16.8(a) and 18 C.F.R. 5.1(d)), as amended, require consultation with the NPS, among others throughout the course of hydropower relicensing proceedings. In the case of the R.L. Harris Hydroelectric Project (here after "Project"), the NPS manages Horseshoe Bend National Military Park (HOBE), situated in a bend of the Tallapoosa River approximately 40 miles downstream of the Project. HOBE protects, preserves, commemorates, and interprets the final battle of the Creek War. On March 27, 1814, 3,300 U.S. troops and militia under Major General Andrew Jackson attacked Chief Menawa's 1,000 Red Stick Creek warriors fortified in a horseshoe-shaped bend of the Tallapoosa River. Over 800 Red Sticks died that day. The battle ended the Creek War, resulted in a land cession of 23,000,000 acres to the United States and created a national hero of Andrew Jackson.

HOBE was established as a unit of the National Park System in 1956 in part to protect the site and artifacts of this momentous event. Today, the park contains 2,049 acres of land on the banks of the Tallapoosa which flows approximately 4 river miles through the park. Since operations of the R.L. Harris project commenced in the 1980s, HOBE has been subjected to significant daily fluctuations in discharge and stage. The graphs below depict the typical flow fluctuations during May, 2020 at the USGS stream gauge located at the park (https://waterdata.usgs.gov/nwis/uv?02414715). This was a particularly wet period. During this period, daily discharge ranged from less than 1,000 cfs to 8,000 cfs. Daily changes in river stage (i.e., elevation) were on the order of 3 feet. These rapid changes in flow over the course of a day lead to bank erosion, as saturated soils slough off as waters recede.





Rapid and recurring flow fluctuations and corresponding bank erosion at the park potentially expose sensitive historical artifacts that are projected by Archeological Resource Protection Act (ARPA) and other federal statutes.

In addition, extreme flow alternations likely contribute to scour erosion of the historic Miller Bridge Piers, a former covered bridge within the park that is protected by the National Historic Preservation Act. Miller Bridge was constructed in 1907. The bridge ultimately fell into disrepair and collapsed. Today, all that remains of Miller Bridge is four stone piers, one of which is collapsed, within the Tallapoosa River. The piers, together with all of the historic resources within HOBE, are listed on the National Register of Historic Places. The List of Classified Structures states that the bridge piers and abutments (LCS No. 005003, Structure No. HS-3) are locally significant under National Register Criteria A and C in the areas of transportation history and engineering, noting that they are the remains of one of the longest American covered bridges.

Comments on the Draft Erosion and Sedimentation Report

The NPS has reviewed the Alabama Power Company's Draft Erosion and Sedimentation Report as well as the accompanying Downstream Bank Stability Report located in Appendix E, titled Tallapoosa River High Definition Stream Survey Final Report produced by Trutta Environmental Solutions, LLC. In addition, the NPS participated in the Alabama Power's Initial

Study Report meeting, held virtually on April 28, 2020. We offer the following comments on the Erosion and Sedimentation Report:

1. We appreciate Alabama Power's efforts to characterize and hopefully remedy erosion that is occurring as a result of project operations as far downstream as HOBE. Although a relatively small park and not particularly well-known to the general public outside of Alabama, the story preserved and interpreted by the park, along with the archeological resources it protects, is that of a watershed moment in the history of our nation, and is therefore worthy of robust consideration within the context of continued project operations and the unintended consequences of bank erosion.

2. Trutta's stream survey consisted of floating the river in two kayaks equipped with georeferenced video cameras as well as side scan sonar, together comprising a longitudinal survey of the river and its banks from below the dam to HOBE. In addition, Trutta conducted 40 cross-sectional surveys of the river below the dam at pre-designated locations, several of which were located within HOBE. Alabama Power subsequently provided relicensing stakeholders with Trutta's video of the entire river below the dam which NPS reviewed. The information produced by this effort is both highly useful and relevant in demonstrating the extent of erosion on the Tallapoosa River below the dam.

3. According to the Trutta survey, at least two sites within HOBE ranked among the worst eroding banks below the dam. An additional site immediately upstream of the park boundary on river-left also made Trutta's list of the most significantly impaired banks (see figures 25 and 28 in the Trutta report). Trutta notes that the riparian corridor within HOBE and adjacent to these areas has little to no modification. Thus, we can only conclude that the major cause of erosion within the park is likely due to project operations.

4. There is no mention of the historic Miller Bridge piers in the Trutta report; however, the piers do appear in the video. Further assessment of the piers in the context scour erosion exacerbated by project operations is warranted within the context of relicensing.

Again, we appreciate the efforts of Alabama Power Company and its consultants to characterize the extent of bank erosion within the Tallapoosa River below R.L. Harris Dam. We look forward to continued collaboration as we seek measures to reduce ongoing erosion at the park. If you have any questions, please do not hesitate to contact Dr. Jeff Duncan, NPS Hydropower Coordinator at (423) 987-6127 or jeff_duncan@nps.gov.

Sincerely,

Karen L. Cucurullo
Acting Regional Director

cc: Barbara Tagger, HOBE Superintendent
Jeff Duncan, Regional Hydropower Coordinator

United States Department of the Interior

NATIONAL PARK SERVICE
Atlanta Federal Center
1924 Building
100 Alabama Street, SW
Atlanta, GA 30303

1.A.2 (SERO-NR)

IN REPLY REFER TO:

Angie Anderegg
Harris Relicensing Project Manager
Alabama Power Company

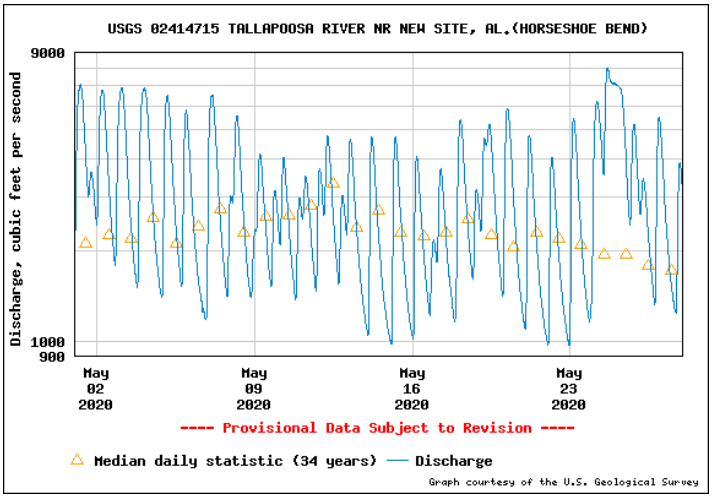
Dear Ms. Anderegg:

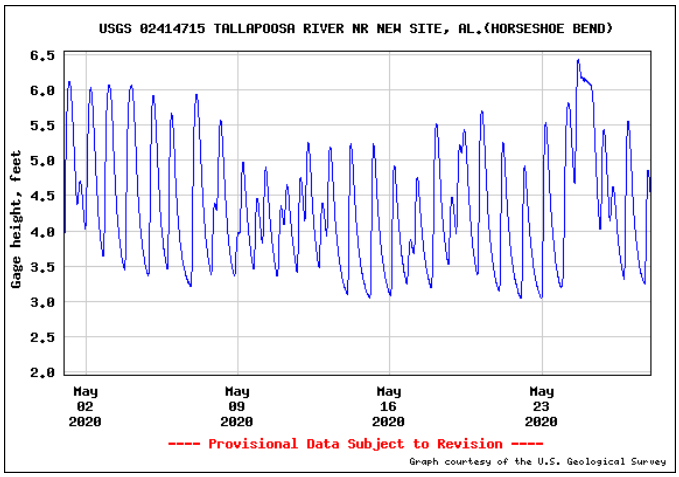
The National Park Service (NPS), South Atlantic-Gulf Region, in coordination with Horseshoe Bend National Military Park, offers the following comments in response to Alabama Power Company's Draft Erosion and Sedimentation Study Report filled with the Federal Energy Regulatory Commission (FERC) on April 10, 2020 pursuant to the relicensing of the R.L. Harris Hydroelectric Project (P-2628).

Background:

Federal Power Act regulations (18 C.F.R. 4.38(a), 18 C.F.R. 16.8(a) and 18 C.F.R. 5.1(d)), as amended, require consultation with the NPS, among others throughout the course of hydropower relicensing proceedings. In the case of the R.L. Harris Hydroelectric Project (here after "Project"), the NPS manages Horseshoe Bend National Military Park (HOBE), situated in a bend of the Tallapoosa River approximately 40 miles downstream of the Project. HOBE protects, preserves, commemorates, and interprets the final battle of the Creek War. On March 27, 1814, 3,300 U.S. troops and militia under Major General Andrew Jackson attacked Chief Menawa's 1,000 Red Stick Creek warriors fortified in a horseshoe-shaped bend of the Tallapoosa River. Over 800 Red Sticks died that day. The battle ended the Creek War, resulted in a land cession of 23,000,000 acres to the United States and created a national hero of Andrew Jackson.

HOBE was established as a unit of the National Park System in 1956 in part to protect the site and artifacts of this momentous event. Today, the park contains 2,049 acres of land on the banks of the Tallapoosa which flows approximately 4 river miles through the park. Since operations of the R.L. Harris project commenced in the 1980s, HOBE has been subjected to significant daily fluctuations in discharge and stage. The graphs below depict the typical flow fluctuations during May, 2020 at the USGS stream gauge located at the park (https://waterdata.usgs.gov/nwis/uv?02414715). This was a particularly wet period. During this period, daily discharge ranged from less than 1,000 cfs to 8,000 cfs. Daily changes in river stage (i.e., elevation) were on the order of 3 feet. These rapid changes in flow over the course of a day lead to bank erosion, as saturated soils slough off as waters recede.





Rapid and recurring flow fluctuations and corresponding bank erosion at the park potentially expose sensitive historical artifacts that are projected by Archeological Resource Protection Act (ARPA) and other federal statutes.

In addition, extreme flow alternations likely contribute to scour erosion of the historic Miller Bridge Piers, a former covered bridge within the park that is protected by the National Historic Preservation Act. Miller Bridge was constructed in 1907. The bridge ultimately fell into disrepair and collapsed. Today, all that remains of Miller Bridge is four stone piers, one of which is collapsed, within the Tallapoosa River. The piers, together with all of the historic resources within HOBE, are listed on the National Register of Historic Places. The List of Classified Structures states that the bridge piers and abutments (LCS No. 005003, Structure No. HS-3) are locally significant under National Register Criteria A and C in the areas of transportation history and engineering, noting that they are the remains of one of the longest American covered bridges.

Comments on the Draft Erosion and Sedimentation Report

The NPS has reviewed the Alabama Power Company's Draft Erosion and Sedimentation Report as well as the accompanying Downstream Bank Stability Report located in Appendix E, titled Tallapoosa River High Definition Stream Survey Final Report produced by Trutta Environmental Solutions, LLC. In addition, the NPS participated in the Alabama Power's Initial

Study Report meeting, held virtually on April 28, 2020. We offer the following comments on the Erosion and Sedimentation Report:

1. We appreciate Alabama Power's efforts to characterize and hopefully remedy erosion that is occurring as a result of project operations as far downstream as HOBE. Although a relatively small park and not particularly well-known to the general public outside of Alabama, the story preserved and interpreted by the park, along with the archeological resources it protects, is that of a watershed moment in the history of our nation, and is therefore worthy of robust consideration within the context of continued project operations and the unintended consequences of bank erosion.

2. Trutta's stream survey consisted of floating the river in two kayaks equipped with georeferenced video cameras as well as side scan sonar, together comprising a longitudinal survey of the river and its banks from below the dam to HOBE. In addition, Trutta conducted 40 cross-sectional surveys of the river below the dam at pre-designated locations, several of which were located within HOBE. Alabama Power subsequently provided relicensing stakeholders with Trutta's video of the entire river below the dam which NPS reviewed. The information produced by this effort is both highly useful and relevant in demonstrating the extent of erosion on the Tallapoosa River below the dam.

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4. There is no mention of the historic Miller Bridge piers in the Trutta report; however, the piers do appear in the video. Further assessment of the piers in the context scour erosion exacerbated by project operations is warranted within the context of relicensing.

Again, we appreciate the efforts of Alabama Power Company and its consultants to characterize the extent of bank erosion within the Tallapoosa River below R.L. Harris Dam. We look forward to continued collaboration as we seek measures to reduce ongoing erosion at the park. If you have any questions, please do not hesitate to contact Dr. Jeff Duncan, NPS Hydropower Coordinator at (423) 987-6127 or jeff_duncan@nps.gov.

Sincerely,

Karen L. Cucurullo
Acting Regional Director

cc: Barbara Tagger, HOBE Superintendent
Jeff Duncan, Regional Hydropower Coordinator

Document Content(s)

Alabama Power

600 North 18th Street
Hydro Services 16N-8180
Birmingham, AL 35203
205 257 2251 tel
arsegars@southernco.com

June 29, 2020

VIA ELECTRONIC FILING

Project No. 2628-065
R.L. Harris Hydroelectric Project
Transmittal of the Final Harris Area of Potential Effects (APE) Report

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

Dear Secretary Bose,

Alabama Power Company (Alabama Power) is the Federal Energy Regulatory Commission (FERC or Commission) licensee for the R.L. Harris Hydroelectric Project (Harris Project) (FERC No. 2628-065). On May 13, 2019, Alabama Power filed Final Study Plans and posted the Final Study Plans on the Harris relicensing website at www.harrisrelicensing.com. The final Cultural Resources Programmatic Agreement and Historic Properties Management Plan Study Plan (Study Plan) required Alabama Power to complete the Area of Potential Effects (APE) consultation and provide a written description and map of the APE in April 2020. In the Harris Project Initial Study Report (ISR) filed on April 10,2020, Alabama Power noted a variance from the Study Plan schedule and explained that they would file the APE Report in June 2020. Alabama Power is now filing the Final APE report for the Harris Project (Attached).

Stakeholders may access this Final Report on FERC's website (http://www.ferc.gov) and it is also available on the Project relicensing website at www.harrisrelicensing.com.

If there are any questions concerning this filing, please contact me at arsegars@southernco.com or 205-257-2251.

Sincerely,

Angie Anderegg
Harris Relicensing Project Manager

Attachment – Final APE Report

cc: Harris Action Team 6 Stakeholder List

Attachment

Final APE Report

HARRIS DAM
RELICENSING

AREA OF POTENTIAL EFFECTS (APE)

R.L. HARRIS PROJECT
FERC NO. 2628

Prepared by:

ALABAMA POWER COMPANY
BIRMINGHAM, ALABAMA

Alabama Power

June 2020

R.L. HARRIS PROJECT
FERC NO. 2628

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AREA OF POTENTIAL EFFECTS

R.L. HARRIS PROJECT
FERC NO. 2628

1.0 PURPOSE

The purpose of this document is to describe the Area of Potential Effects (APE)[1] for the R.L. Harris Hydroelectric Project (Project)[2] and the process used to establish the APE. As outlined in the April 2019 Federal Energy Regulatory Commission (FERC) Study Plan Determination (SPD), this document will provide "a written description of the APE, a map clearly identifying the APE and its relationship to the Harris Project Boundary, and concurrence from the Alabama SHPO on the APE prior to conducting fieldwork (5.9(b)(6)." The APE was developed in consultation with the Alabama Historical Commission (Alabama State Historic Preservation Officer (Alabama SHPO)), FERC, Cherokee Nation, Eastern Band of Cherokee Indians, United Keetoowah Band of Cherokee Indians in Oklahoma, Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Coushatta Tribe of Louisiana, Kialegee Tribal Town, Muscogee (Creek) Nation, Poarch Band of Creek Indians, and Thlopthlocco Tribal Town[3] (applicable tribes) and in compliance with the following applicable Federal and State local laws, regulations, policies, or guidelines associated with the protection and preservation of historic properties[4], human remains, funerary objects, and objects of cultural patrimony:

1. The Advisory Council's "Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects", dated February 23, 2007.
2. Public Law 101-601; 25 U.S.C. 3001-3013 (Native American Graves Protection and Repatriation Act).
3. 54 U.S.C. 306108 (National Historic Preservation Act of 1966, Section 106). Title 54 of the United States Code, Subtitle III – National Preservation Programs, Division A –

[1] This document describes Alabama Power's proposed APE and the justifications FERC will need to approve it.
[2] The National Historic Preservation Act of 1966 provides definitions of many of the terms used herein. Those definitions can be found in 54 U.S.C. §300301-300321.
[3] Applicable Tribes as of March 2019.
[4] 3 CFR 102.103 defines "historic properties" as those properties that are listed or eligible for listing in the National Register of Historic Places or properties designated as historic under a statute of the appropriate State or local government body.

Historic Preservation, Subdivision 5 – Federal Agency Historic Preservation Responsibilities, Chapter 3061, Subchapter I – In General, Section 306108 – Effect of undertaking on historic property (formerly Section 106 of the National Historic Preservation Act).

4. 36 CFR Part 800 (The Advisory Council's Regulations for implementing Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470F)).
5. Ala. Code 1975, §41-3-6 (Aboriginal Mounds, Earthworks and Other Antiquities).
6. Ala. Code 1975, §13A-7-23.1, as amended (Alabama Cemetery and Human Remains Protection Act, Burials).
7. Alabama Historical Commission Policy for Archaeological Survey and Testing in Alabama, as adopted May 13, 1996 and Revised October 1, 2002.
8. Ala. Code 1975, §35-1-4 (Alabama Cemetery Access Law).
9. Alabama Historical Commission Administrative Code Chapter 460-X-10 (Burials)
10. 33 C.F.R Part 325, Appendix C (United State ACOE Procedures for Protection of Historic Properties).
11. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, November 6, 2000.
12. 54 U.S.C. §§ 320301-320303 (Antiquities Act of 1906).
13. 42 U.S.C. §4321 (National Environmental Policy Act).
14. 42 U.S.C. §§ 470aa-470mm (Archaeological Resources Protection Act of 1979).
15. Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 13, 1971.
16. Executive Order 13007, Indian Sacred Sites, May 24, 1996.

2.0 INITIAL AREA OF POTENTIAL EFFECTS (APE) PROPOSAL

2.1 ALABAMA POWER INITIAL APE PROPOSAL (MAY 2019-APRIL 2020)

The Alabama Power initial APE proposal was the lands in the R.L. Harris FERC Project Boundary (Lake Harris and Skyline). The Harris Project Boundary includes:

> The Harris Project consists of a dam, spillway, powerhouse, and those lands and waters necessary for the operation of the hydroelectric project and enhancement and protection of environmental resources. These structures, lands, and water are enclosed within the FERC Project Boundary. Under the existing Harris Project license, the FERC Project Boundary encloses two distinct geographic areas.
>
> Harris Reservoir is the 9,870-acre reservoir (Harris Reservoir) created by the R.L. Harris Dam (Harris Dam). Harris Reservoir is located on the Tallapoosa River, near Lineville, Alabama. The lands adjoining the reservoir total approximately 7,392 acres and are included in the FERC Project Boundary. This includes land to 795 feet mean sea level (msl) (Alabama Power owns 2 feet of flood storage (793-795), as well as natural undeveloped areas, hunting lands, prohibited access areas, recreational areas, and all islands. Finally, this includes a scenic easement (to 800 feet msl or 50 horizontal feet from 793 feet msl, whichever is less, but never less than 795 feet msl).
>
> The Harris Project also contains 15,063 acres of land within the James D. Martin-Skyline Wildlife Management Area (Skyline WMA) located in Jackson County, Alabama. These lands are located approximately 110 miles north of Harris Reservoir and were acquired and incorporated into the FERC Project Boundary as part of the FERC-approved Harris Project Wildlife Mitigative Plan and Wildlife Management Plan. These lands are leased to, and managed by, the State of Alabama for wildlife management and public hunting and are part of the Skyline WMA.

3.0 SECOND APE PROPOSAL (MAY 2020)

Alabama Power presented the revised APE proposal below in the Draft APE report distributed to Harris Action Team (HAT) 6 on May 15, 2020.

- The Direct Effects APE are the lands in the R.L. Harris FERC Project Boundary (Lake Harris and Skyline)[5].
- The Indirect Effects APE, such as auditory and visual settings, are areas in the Project Boundary that are indirectly affected by Project operations.
- Finally, if through any ongoing Harris relicensing studies, Harris Project operations are determined to affect any historic properties outside of the Project Boundary below Harris Dam, Alabama Power will amend the APE to include these historic properties.

[5] The APE will be revised to reflect changes in the FERC Project Boundary, as necessary.

4.0 APE CONSULTATION

4.1 APE DISCUSSIONS

At the May 22, 2019 HAT 6 meeting, Alabama Power began the work of developing the Harris APE. Alabama Power proposed that the APE include the lands in the R.L. Harris FERC Project Boundary (Lake Harris and Skyline). Alabama Power did not receive any comments on the proposed APE following the meeting.

At the November 6, 2019 HAT 6 meeting, Alabama Power again presented the proposed APE. At this meeting, Alabama Power requested a response to the proposed APE on or before December 11, 2019.

Alabama Power received one comment regarding the Harris APE. The Muscogee (Creek) Nation filed comments on December 12, 2019. The Muscogee (Creek) Nation submitted the following[6]: "The APE for this undertaking includes all lands in the R. L. Harris FERC-approved Project Boundary (Lake Harris and Skyline). The APE also includes lands or properties outside of the Project Boundary where Project-related operations or Project-related recreation activities or other enhancements may cause changes in the character or use of historic properties, if any such properties exist."

On March 2, 2020, Alabama Power conducted another HAT 6 meeting. At this meeting, the group discussed the Muscogee (Creek) Nation APE language. RaeLynn Butler (Muscogee (Creek) Nation) stated that the proposed definition allows for flexibility in the event that a site not currently within the FERC Project Boundary is impacted by Project activities in the future and that in the past the Muscogee (Creek) Nation worked with utilities to incorporate this definition of APE. Rachel McNamara (FERC) stated that the standard definition for the APE is the project boundary and areas affected by project operations, which may extend to areas that may have indirect effects. Rachel added that the APE and project boundary could be different.

On February 19, 2020 and again on March 26, 2020, Alabama Power requested concurrence from the SHPO on the Harris APE. The respective communications included a detailed

[6] Accession No. 20191212-5155.

description of the Harris Project Boundary (February 19, 2020) and a clarification regarding the APE discussion at the March 2, 2020 meeting (March 26, 2020).

In the April 10, 2020 Initial Study Report, Alabama Power noted a variance in the *Cultural Resources Programmatic Agreement and Historic Properties Management Plan Study Plan* (Study Plan) to continue consultation to finalize the APE and, therefore, file the APE and associated consultation by June 30, 2020 (revised from April 2020 in the final Study Plan).

At the April 28, 2020 Initial Study Report meeting, Rachel McNamara asked about defining the APE and the possibility of extending the APE downstream. Rachel stated there is a need for more discussion, and Alabama Power noted that it intended to schedule a HAT meeting in May 2020 to continue APE discussions.

At the May 28, 2020 HAT 6 meeting, Rachel McNamara stated that she was still having difficulty with the current language of the APE not extending downstream of Harris Dam, especially considering that Alabama Power is looking at Project effects as far downstream as Horseshoe Bend. Amanda McBride noted that the Alabama SHPO has not been in complete agreement on the proposed APE, which is why the Alabama SHPO agreed to the current language that includes the understanding that indirect effects would continue to be evaluated. Rachel added that FERC is still struggling with the indirect effects portion of the currently proposed APE as flows downstream are direct effects. Rachel added that FERC does not insinuate that Alabama Power would be required to take measures on private property as it is understood that Alabama Power would not necessarily have the rights to do so and added that the purpose is to understand all Project effects. In addition, Rachel noted that it is ultimately FERC's decision on the APE, and at this point, the APE needs to extend to all areas potentially effected by Project operations with the understanding that the administrative area of control will not apply to all lands downstream of Harris Dam to Horseshoe Bend.

5.0 FINAL APE (MAY- JUNE 2020)

As a result of the May 28, 2020 HAT 6 meeting, Alabama Power submitted the following final APE to the Alabama SHPO for approval:

> (a) lands enclosed by the Harris Project Boundary, and
> (b) lands or properties which may be outside the Harris Project Boundary, where the authorized Project uses may cause changes in the character or use of the Historic Properties, if Historic Properties exist.

6.0 SHPO APE CONCURRENCE

On April 7, 2020, the Alabama SHPO submitted a letter regarding the Harris APE. The letter noted concurrence on the Direct Effects APE for the Harris Project but allowed for additional discussions on the APE.

After, review of the final APE, the Alabama SHPO submitted another letter regarding the Harris APE (Appendix A). This letter provided concurrence with Alabama Power on the final APE for the Harris Project.

7.0 APE MAPS

FIGURE 7.1 AREA OF POTENTIAL EFFECTS- R.L. HARRIS DAM, POWERHOUSE AND SPILLWAY

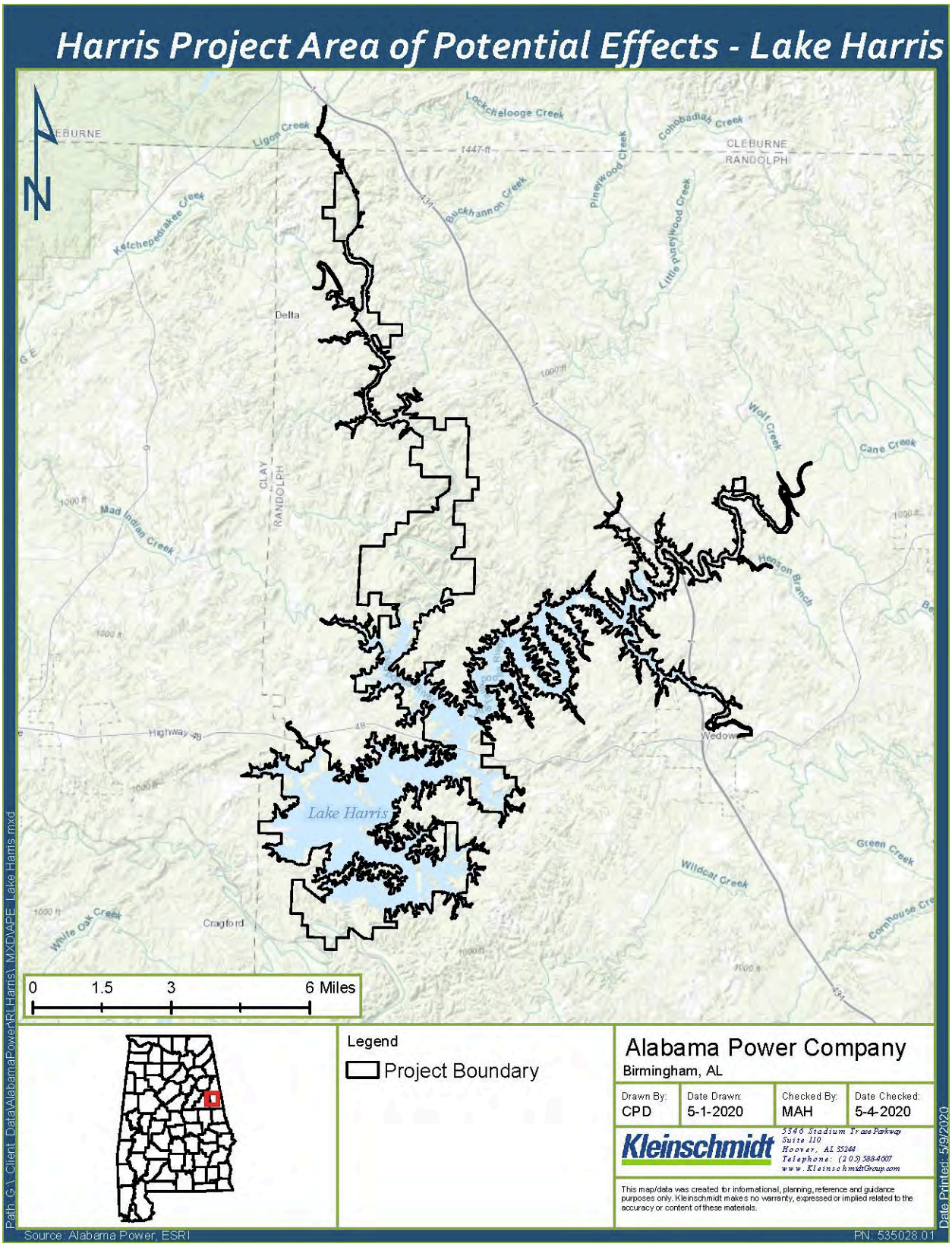

FIGURE 7.2 AREA OF POTENTIAL EFFECTS- LAKE HARRIS

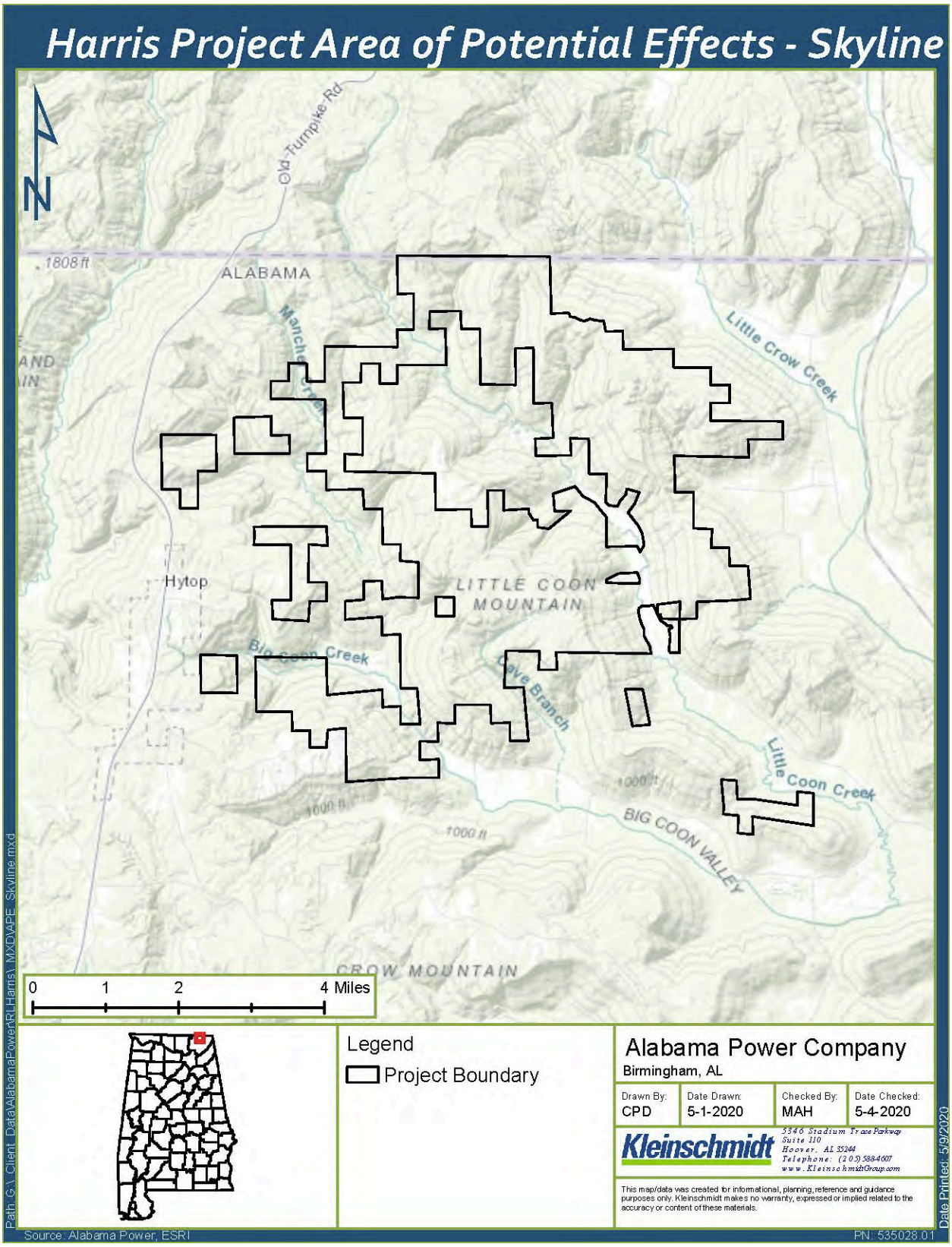

FIGURE 7.3 AREA OF POTENTIAL EFFECTS- SKYLINE

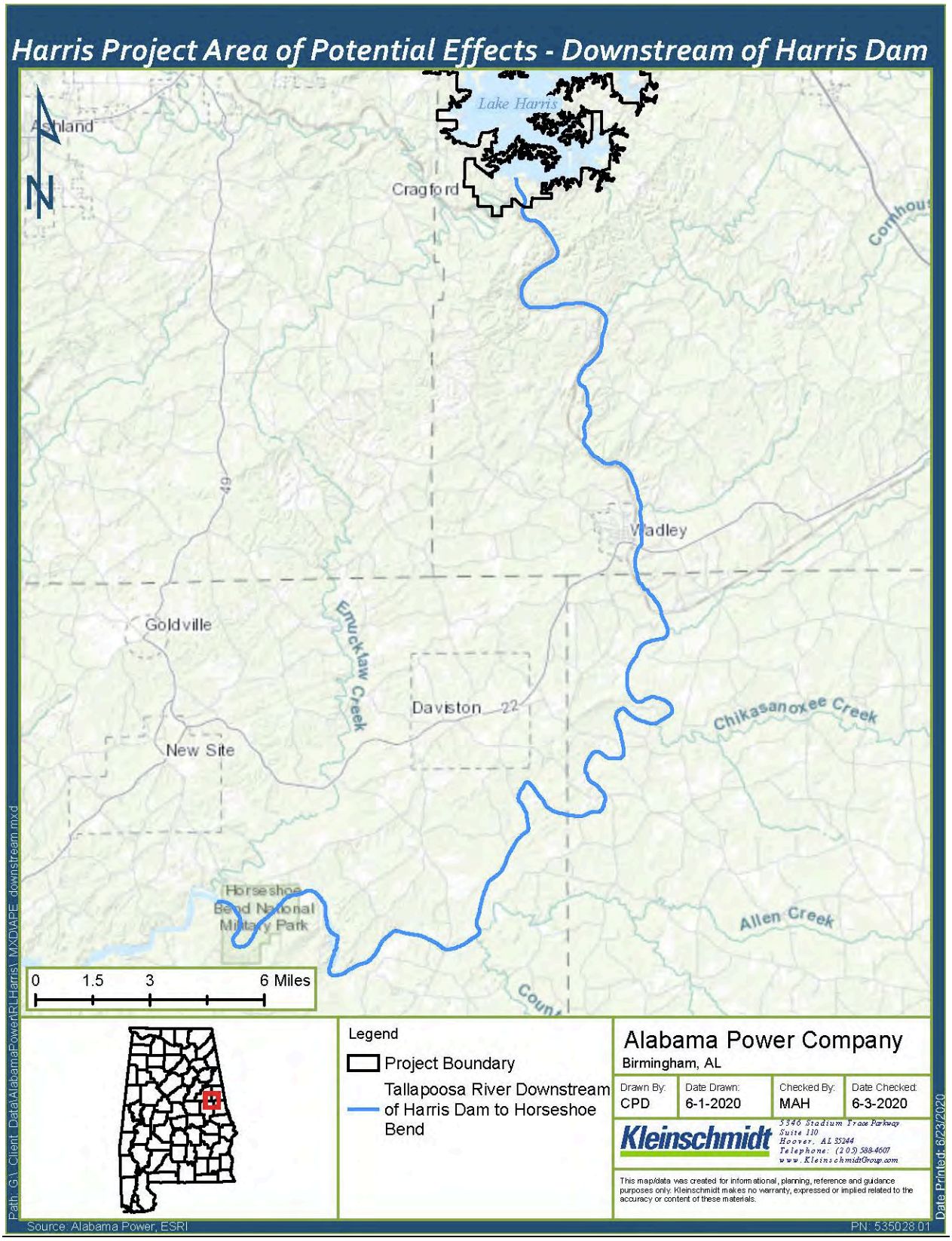

FIGURE 7.4 AREA OF POTENTIAL EFFECTS- DOWNSTREAM OF HARRIS DAM

8.0 CONSULTATION SUMMARY

Table 8-1 provides a summary of the APE consultation to date.

TABLE 8–1 SUMMARY OF CONSULTATION

DATE	PARTICIPANTS	CONSULTATION TYPE[7]
May 22, 2019	SHPO Muscogee (Creek) Alabama Power	HAT 6 meeting – discussion on developing the area of potential effects.
November 6, 2019	SHPO Muscogee (Creek) Cherokee Nation Alabama Power FERC	HAT 6 meeting – Alabama Power proposed APE and requested comments.
December 12, 2019	Muscogee (Creek)	Stakeholder comment – Muscogee (Creek) proposed APE language.
February 19, 2020	Alabama Power	HAT 6 communication – Alabama Power requested APE response from SHPO.
March 2, 2020	SHPO Muscogee (Creek) Alabama Power FERC	HAT 6 meeting – discussed the Muscogee (Creek) APE language.
March 26, 2020	Alabama Power	Email communication – Alabama Power requested APE response from SHPO.
April 7, 2020	SHPO	Letter and Email communication – SHPO provided Direct Effects APE concurrence.
May 15, 2020	HAT 6	Email communication – Alabama Power provides this APE report and requests any additional comments on or before June 15, 2020[8].
May 28, 2020	HAT 6	HAT 6 meeting – Discuss revised APE.
May 29, 2020	Alabama Power	Email communication – Alabama Power requested revised APE response from SHPO.
June 18, 2020	SHPO	Letter and Email communication – SHPO provide APE concurrence.
June 30, 2020	HAT 6	FERC filing – Alabama Power files APE report and posts to harrisrelicensing.com.

[7] Due to the sensitive nature of the subject matter, Alabama Power limited the information distribution and meeting participants.
[8] Alabama Power did not receive any comments on the APE report.

APPENDIX A

JUNE 18, 2020 SHPO CONCURRENCE

ALABAMA HISTORICAL COMMISSION

468 South Perry Street
P.O. Box 300900
Montgomery, Alabama 36130-0900
334-242-3184 / Fax: 334-240-3477

Lisa D. Jones
Executive Director
State Historic Preservation Officer

June 18, 2020

Angie Segars Anderegg
Hydro Services
Alabama Power Company
Birmingham, Alabama

AHC 2017-1147
Area of Potential Effects Definition
Harris Relicensing (FERC Project Number 2628)
Multiple Counties

Dear Ms. Anderegg:

Upon review of the proposed Area of Potential Effects (APE) for the R.L. Harris Relicensing Project, we find that we concur with the APE boundary as defined by Alabama Power Company:

(a) lands enclosed by the Harris Project Boundary, and
(b) lands or properties which may be outside the Harris Project Boundary, where the authorized Project uses may cause changes in the character or use of the Historic Properties, if Historic Properties exist.

We appreciate your commitment to helping us preserve Alabama's historic archaeological and architectural resources. Should you have any questions, please contact Amanda McBride at 334.230.2692 or Amanda.McBride@ahc.alabama.gov. Have the AHC tracking number referenced above available and include it with any future correspondence.

Sincerely,

Lee Anne Wofford
Deputy State Historic Preservation Officer

LAW/EDS/AMH/amh

Document Content(s)

Harris Relicensing - Cultural Resources APE report

APC Harris Relicensing <g2apchr@southernco.com>

Mon 6/29/2020 5:22 PM

To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Bcc: nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; mike.holley@dcnr.alabama.gov <mike.holley@dcnr.alabama.gov>; matthew.marshall@dcnr.alabama.gov <matthew.marshall@dcnr.alabama.gov>; amanda.mcbride@ahc.alabama.gov <amanda.mcbride@ahc.alabama.gov>; eric.sipes@ahc.alabama.gov <eric.sipes@ahc.alabama.gov>; leeanne.wofford@ahc.alabama.gov <leeanne.wofford@ahc.alabama.gov>; arsegars@southernco.com <arsegars@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; wsgardne@southernco.com <wsgardne@southernco.com>; ammcvica@southernco.com <ammcvica@southernco.com>; tlmills@southernco.com <tlmills@southernco.com>; jlowe@alabama-quassarte.org <jlowe@alabama-quassarte.org>; mhunter@alabamarivers.org <mhunter@alabamarivers.org>; jwest@alabamarivers.org <jwest@alabamarivers.org>; celestine.bryant@actribe.org <celestine.bryant@actribe.org>; gjobsis@americanrivers.org <gjobsis@americanrivers.org>

1 attachments (1 MB)

2020-06-29 Harris Project APE Report.pdf;

HAT 6,

The final Cultural Resources Programmatic Agreement and Historic Properties Management Plan Study Plan required Alabama Power to complete the Area of Potential Effects (APE) consultation and provide a written description and map of the APE in April 2020. In the Harris Project Initial Study Report (ISR) filed on April 10,2020, Alabama Power noted a variance from the Study Plan schedule and explained that they would file the APE Report in June 2020. Alabama Power filed the attached Final APE report for the Harris Project with FERC today. This report is also available on the relicensing website at: www.harrisrelicensing.com.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Alabama Power

600 North 18th Street
Hydro Services 16N-8180
Birmingham, AL 35203
205 257 2251 tel
arsegars@southernco.com

June 29, 2020

VIA ELECTRONIC FILING

Project No. 2628-065
R.L. Harris Hydroelectric Project
Transmittal of the Final Harris Area of Potential Effects (APE) Report

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

Dear Secretary Bose,

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Stakeholders may access this Final Report on FERC's website (http://www.ferc.gov) and it is also available on the Project relicensing website at www.harrisrelicensing.com.

If there are any questions concerning this filing, please contact me at arsegars@southernco.com or 205-257-2251.

Sincerely,

Angie Anderegg
Harris Relicensing Project Manager

Attachment – Final APE Report

cc: Harris Action Team 6 Stakeholder List

Attachment

Final APE Report

HARRIS DAM
RELICENSING

AREA OF POTENTIAL EFFECTS (APE)

R.L. HARRIS PROJECT
FERC NO. 2628

Prepared by:

ALABAMA POWER COMPANY
BIRMINGHAM, ALABAMA

Alabama Power

June 2020

R.L. HARRIS PROJECT
FERC NO. 2628

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AREA OF POTENTIAL EFFECTS

R.L. HARRIS PROJECT
FERC NO. 2628

1.0 PURPOSE

The purpose of this document is to describe the Area of Potential Effects (APE)[1] for the R.L. Harris Hydroelectric Project (Project)[2] and the process used to establish the APE. As outlined in the April 2019 Federal Energy Regulatory Commission (FERC) Study Plan Determination (SPD), this document will provide "a written description of the APE, a map clearly identifying the APE and its relationship to the Harris Project Boundary, and concurrence from the Alabama SHPO on the APE prior to conducting fieldwork (5.9(b)(6)." The APE was developed in consultation with the Alabama Historical Commission (Alabama State Historic Preservation Officer (Alabama SHPO)), FERC, Cherokee Nation, Eastern Band of Cherokee Indians, United Keetoowah Band of Cherokee Indians in Oklahoma, Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Coushatta Tribe of Louisiana, Kialegee Tribal Town, Muscogee (Creek) Nation, Poarch Band of Creek Indians, and Thlopthlocco Tribal Town[3] (applicable tribes) and in compliance with the following applicable Federal and State local laws, regulations, policies, or guidelines associated with the protection and preservation of historic properties[4], human remains, funerary objects, and objects of cultural patrimony:

1. The Advisory Council's "Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects", dated February 23, 2007.
2. Public Law 101-601; 25 U.S.C. 3001-3013 (Native American Graves Protection and Repatriation Act).
3. 54 U.S.C. 306108 (National Historic Preservation Act of 1966, Section 106). Title 54 of the United States Code, Subtitle III – National Preservation Programs, Division A –

[1] This document describes Alabama Power's proposed APE and the justifications FERC will need to approve it.
[2] The National Historic Preservation Act of 1966 provides definitions of many of the terms used herein. Those definitions can be found in 54 U.S.C. §300301-300321.
[3] Applicable Tribes as of March 2019.
[4] 3 CFR 102.103 defines "historic properties" as those properties that are listed or eligible for listing in the National Register of Historic Places or properties designated as historic under a statute of the appropriate State or local government body.

Historic Preservation, Subdivision 5 – Federal Agency Historic Preservation Responsibilities, Chapter 3061, Subchapter I – In General, Section 306108 – Effect of undertaking on historic property (formerly Section 106 of the National Historic Preservation Act).

4. 36 CFR Part 800 (The Advisory Council's Regulations for implementing Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470F)).
5. Ala. Code 1975, §41-3-6 (Aboriginal Mounds, Earthworks and Other Antiquities).
6. Ala. Code 1975, §13A-7-23.1, as amended (Alabama Cemetery and Human Remains Protection Act, Burials).
7. Alabama Historical Commission Policy for Archaeological Survey and Testing in Alabama, as adopted May 13, 1996 and Revised October 1, 2002.
8. Ala. Code 1975, §35-1-4 (Alabama Cemetery Access Law).
9. Alabama Historical Commission Administrative Code Chapter 460-X-10 (Burials)
10. 33 C.F.R Part 325, Appendix C (United State ACOE Procedures for Protection of Historic Properties).
11. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, November 6, 2000.
12. 54 U.S.C. §§ 320301-320303 (Antiquities Act of 1906).
13. 42 U.S.C. §4321 (National Environmental Policy Act).
14. 42 U.S.C. §§ 470aa-470mm (Archaeological Resources Protection Act of 1979).
15. Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 13, 1971.
16. Executive Order 13007, Indian Sacred Sites, May 24, 1996.

2.0 INITIAL AREA OF POTENTIAL EFFECTS (APE) PROPOSAL

2.1 ALABAMA POWER INITIAL APE PROPOSAL (MAY 2019-APRIL 2020)

The Alabama Power initial APE proposal was the lands in the R.L. Harris FERC Project Boundary (Lake Harris and Skyline). The Harris Project Boundary includes:

> The Harris Project consists of a dam, spillway, powerhouse, and those lands and waters necessary for the operation of the hydroelectric project and enhancement and protection of environmental resources. These structures, lands, and water are enclosed within the FERC Project Boundary. Under the existing Harris Project license, the FERC Project Boundary encloses two distinct geographic areas.
>
> Harris Reservoir is the 9,870-acre reservoir (Harris Reservoir) created by the R.L. Harris Dam (Harris Dam). Harris Reservoir is located on the Tallapoosa River, near Lineville, Alabama. The lands adjoining the reservoir total approximately 7,392 acres and are included in the FERC Project Boundary. This includes land to 795 feet mean sea level (msl) (Alabama Power owns 2 feet of flood storage (793-795), as well as natural undeveloped areas, hunting lands, prohibited access areas, recreational areas, and all islands. Finally, this includes a scenic easement (to 800 feet msl or 50 horizontal feet from 793 feet msl, whichever is less, but never less than 795 feet msl).
>
> The Harris Project also contains 15,063 acres of land within the James D. Martin-Skyline Wildlife Management Area (Skyline WMA) located in Jackson County, Alabama. These lands are located approximately 110 miles north of Harris Reservoir and were acquired and incorporated into the FERC Project Boundary as part of the FERC-approved Harris Project Wildlife Mitigative Plan and Wildlife Management Plan. These lands are leased to, and managed by, the State of Alabama for wildlife management and public hunting and are part of the Skyline WMA.

3.0 SECOND APE PROPOSAL (MAY 2020)

Alabama Power presented the revised APE proposal below in the Draft APE report distributed to Harris Action Team (HAT) 6 on May 15, 2020.

- The Direct Effects APE are the lands in the R.L. Harris FERC Project Boundary (Lake Harris and Skyline)[5].
- The Indirect Effects APE, such as auditory and visual settings, are areas in the Project Boundary that are indirectly affected by Project operations.
- Finally, if through any ongoing Harris relicensing studies, Harris Project operations are determined to affect any historic properties outside of the Project Boundary below Harris Dam, Alabama Power will amend the APE to include these historic properties.

[5] The APE will be revised to reflect changes in the FERC Project Boundary, as necessary.

4.0 APE CONSULTATION

4.1 APE DISCUSSIONS

At the May 22, 2019 HAT 6 meeting, Alabama Power began the work of developing the Harris APE. Alabama Power proposed that the APE include the lands in the R.L. Harris FERC Project Boundary (Lake Harris and Skyline). Alabama Power did not receive any comments on the proposed APE following the meeting.

At the November 6, 2019 HAT 6 meeting, Alabama Power again presented the proposed APE. At this meeting, Alabama Power requested a response to the proposed APE on or before December 11, 2019.

Alabama Power received one comment regarding the Harris APE. The Muscogee (Creek) Nation filed comments on December 12, 2019. The Muscogee (Creek) Nation submitted the following[6]: "The APE for this undertaking includes all lands in the R. L. Harris FERC-approved Project Boundary (Lake Harris and Skyline). The APE also includes lands or properties outside of the Project Boundary where Project-related operations or Project-related recreation activities or other enhancements may cause changes in the character or use of historic properties, if any such properties exist."

On March 2, 2020, Alabama Power conducted another HAT 6 meeting. At this meeting, the group discussed the Muscogee (Creek) Nation APE language. RaeLynn Butler (Muscogee (Creek) Nation) stated that the proposed definition allows for flexibility in the event that a site not currently within the FERC Project Boundary is impacted by Project activities in the future and that in the past the Muscogee (Creek) Nation worked with utilities to incorporate this definition of APE. Rachel McNamara (FERC) stated that the standard definition for the APE is the project boundary and areas affected by project operations, which may extend to areas that may have indirect effects. Rachel added that the APE and project boundary could be different.

On February 19, 2020 and again on March 26, 2020, Alabama Power requested concurrence from the SHPO on the Harris APE. The respective communications included a detailed

[6] Accession No. 20191212-5155.

description of the Harris Project Boundary (February 19, 2020) and a clarification regarding the APE discussion at the March 2, 2020 meeting (March 26, 2020).

In the April 10, 2020 Initial Study Report, Alabama Power noted a variance in the *Cultural Resources Programmatic Agreement and Historic Properties Management Plan Study Plan* (Study Plan) to continue consultation to finalize the APE and, therefore, file the APE and associated consultation by June 30, 2020 (revised from April 2020 in the final Study Plan).

At the April 28, 2020 Initial Study Report meeting, Rachel McNamara asked about defining the APE and the possibility of extending the APE downstream. Rachel stated there is a need for more discussion, and Alabama Power noted that it intended to schedule a HAT meeting in May 2020 to continue APE discussions.

At the May 28, 2020 HAT 6 meeting, Rachel McNamara stated that she was still having difficulty with the current language of the APE not extending downstream of Harris Dam, especially considering that Alabama Power is looking at Project effects as far downstream as Horseshoe Bend. Amanda McBride noted that the Alabama SHPO has not been in complete agreement on the proposed APE, which is why the Alabama SHPO agreed to the current language that includes the understanding that indirect effects would continue to be evaluated. Rachel added that FERC is still struggling with the indirect effects portion of the currently proposed APE as flows downstream are direct effects. Rachel added that FERC does not insinuate that Alabama Power would be required to take measures on private property as it is understood that Alabama Power would not necessarily have the rights to do so and added that the purpose is to understand all Project effects. In addition, Rachel noted that it is ultimately FERC's decision on the APE, and at this point, the APE needs to extend to all areas potentially effected by Project operations with the understanding that the administrative area of control will not apply to all lands downstream of Harris Dam to Horseshoe Bend.

5.0 FINAL APE (MAY- JUNE 2020)

As a result of the May 28, 2020 HAT 6 meeting, Alabama Power submitted the following final APE to the Alabama SHPO for approval:

> (a) lands enclosed by the Harris Project Boundary, and
> (b) lands or properties which may be outside the Harris Project Boundary, where the authorized Project uses may cause changes in the character or use of the Historic Properties, if Historic Properties exist.

6.0 SHPO APE CONCURRENCE

On April 7, 2020, the Alabama SHPO submitted a letter regarding the Harris APE. The letter noted concurrence on the Direct Effects APE for the Harris Project but allowed for additional discussions on the APE.

After, review of the final APE, the Alabama SHPO submitted another letter regarding the Harris APE (Appendix A). This letter provided concurrence with Alabama Power on the final APE for the Harris Project.

7.0 APE MAPS

FIGURE 7.1 AREA OF POTENTIAL EFFECTS- R.L. HARRIS DAM, POWERHOUSE AND SPILLWAY

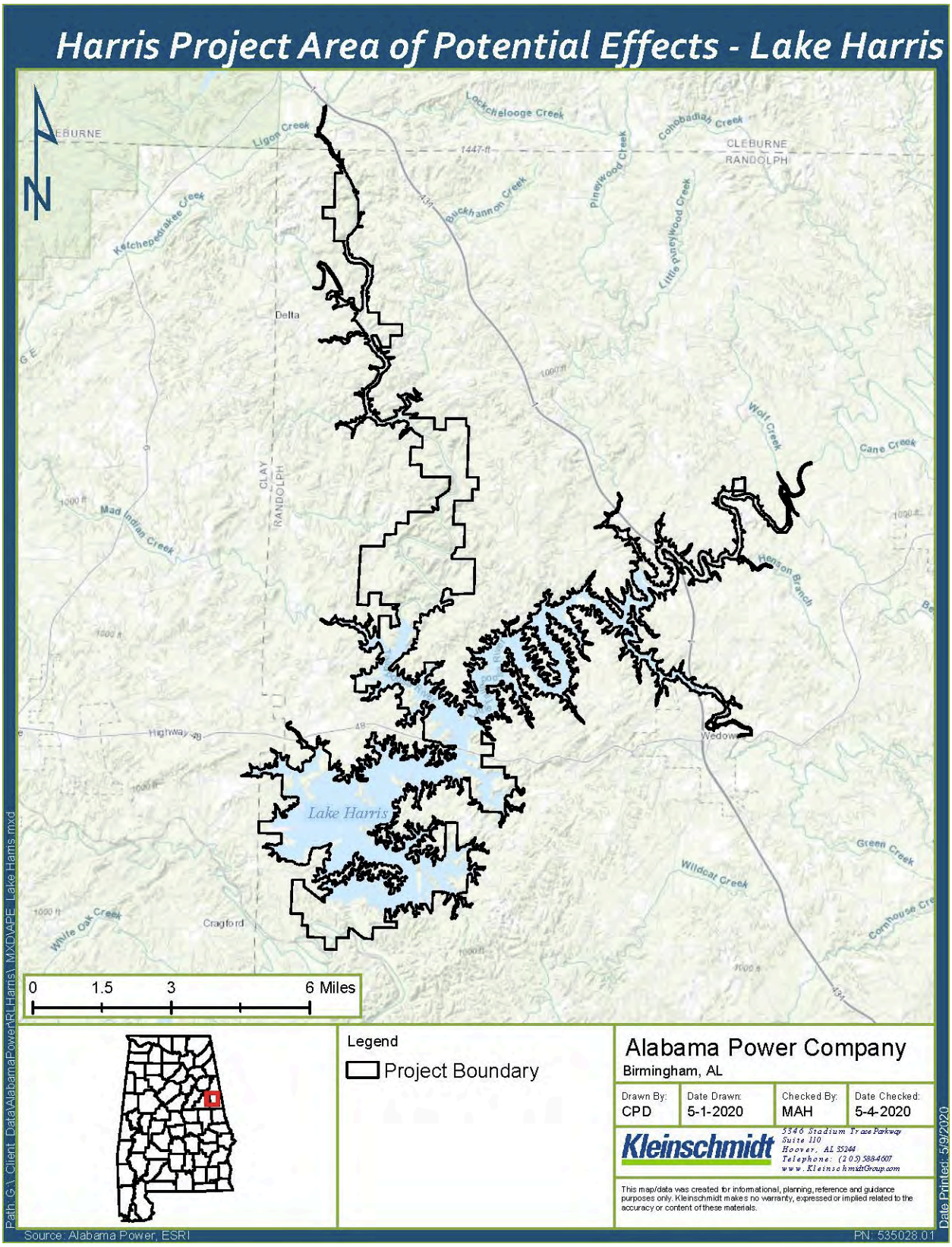

FIGURE 7.2 AREA OF POTENTIAL EFFECTS- LAKE HARRIS

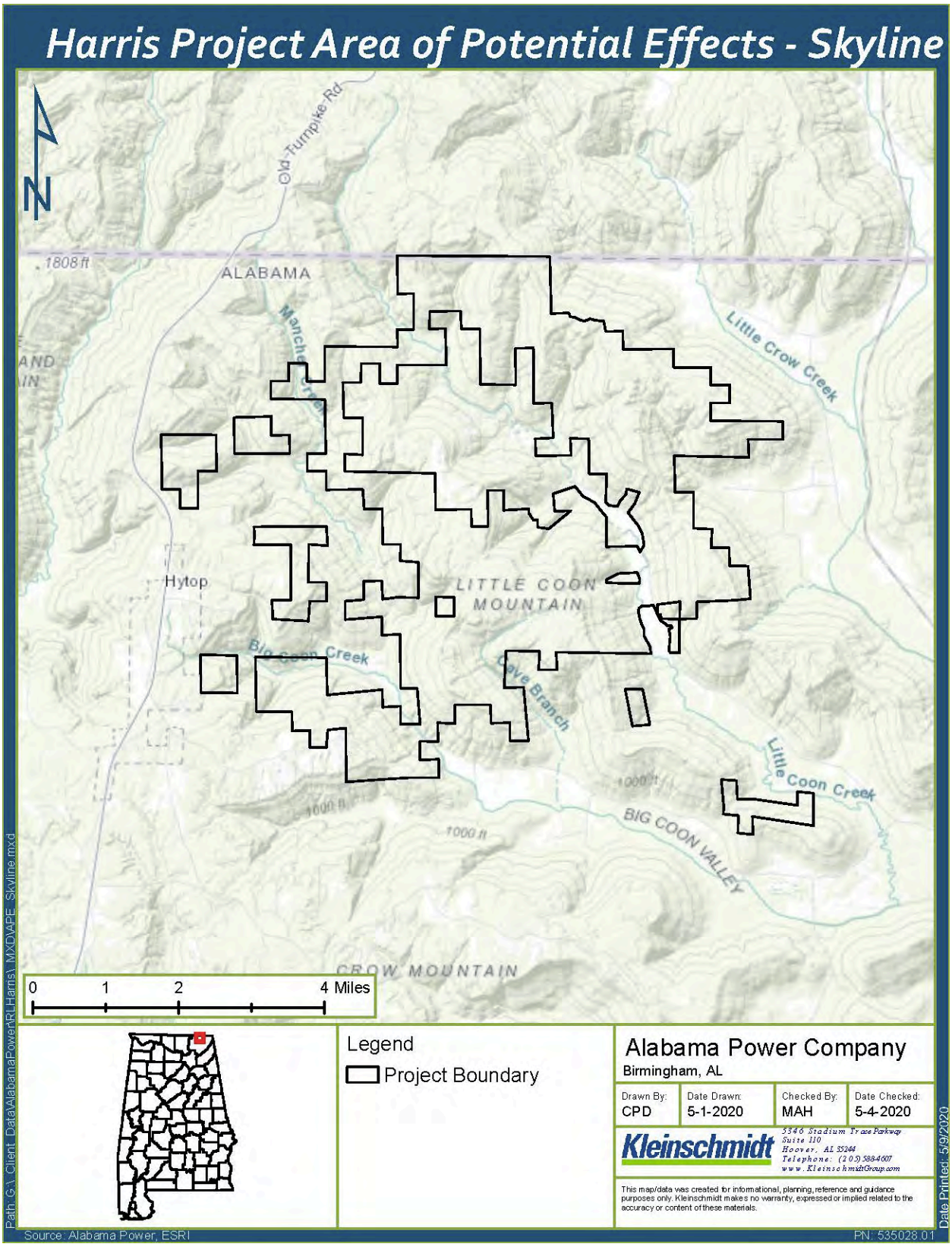

FIGURE 7.3 AREA OF POTENTIAL EFFECTS- SKYLINE

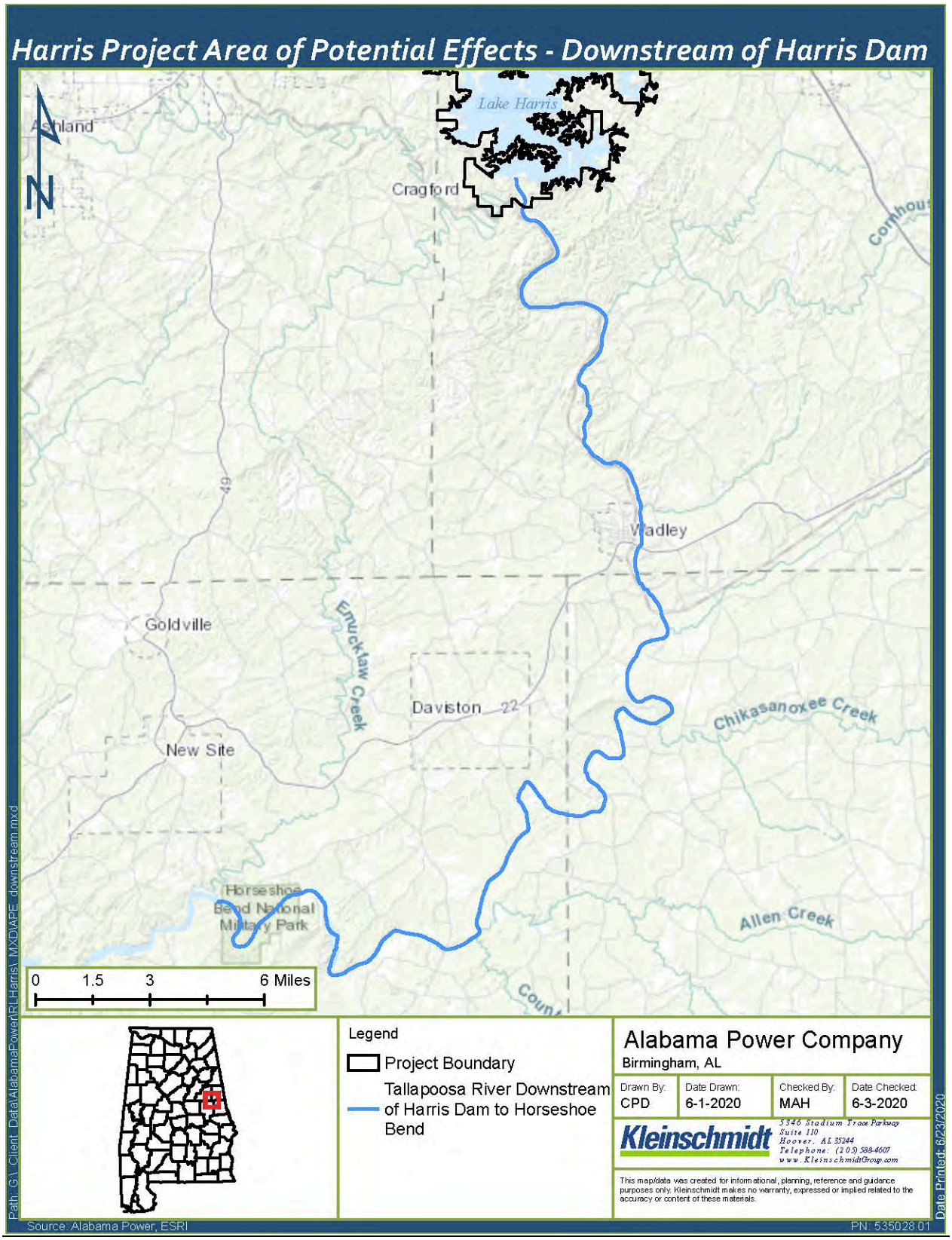

FIGURE 7.4 AREA OF POTENTIAL EFFECTS- DOWNSTREAM OF HARRIS DAM

8.0 CONSULTATION SUMMARY

Table 8-1 provides a summary of the APE consultation to date.

TABLE 8–1 SUMMARY OF CONSULTATION

DATE	PARTICIPANTS	CONSULTATION TYPE[7]
May 22, 2019	SHPO Muscogee (Creek) Alabama Power	HAT 6 meeting – discussion on developing the area of potential effects.
November 6, 2019	SHPO Muscogee (Creek) Cherokee Nation Alabama Power FERC	HAT 6 meeting – Alabama Power proposed APE and requested comments.
December 12, 2019	Muscogee (Creek)	Stakeholder comment – Muscogee (Creek) proposed APE language.
February 19, 2020	Alabama Power	HAT 6 communication – Alabama Power requested APE response from SHPO.
March 2, 2020	SHPO Muscogee (Creek) Alabama Power FERC	HAT 6 meeting – discussed the Muscogee (Creek) APE language.
March 26, 2020	Alabama Power	Email communication – Alabama Power requested APE response from SHPO.
April 7, 2020	SHPO	Letter and Email communication – SHPO provided Direct Effects APE concurrence.
May 15, 2020	HAT 6	Email communication – Alabama Power provides this APE report and requests any additional comments on or before June 15, 2020[8].
May 28, 2020	HAT 6	HAT 6 meeting – Discuss revised APE.
May 29, 2020	Alabama Power	Email communication – Alabama Power requested revised APE response from SHPO.
June 18, 2020	SHPO	Letter and Email communication – SHPO provide APE concurrence.
June 30, 2020	HAT 6	FERC filing – Alabama Power files APE report and posts to harrisrelicensing.com.

[7] Due to the sensitive nature of the subject matter, Alabama Power limited the information distribution and meeting participants.
[8] Alabama Power did not receive any comments on the APE report.

APPENDIX A

JUNE 18, 2020 SHPO CONCURRENCE

ALABAMA HISTORICAL COMMISSION

468 South Perry Street
P.O. Box 300900
Montgomery, Alabama 36130-0900
334-242-3184 / Fax: 334-240-3477

Lisa D. Jones
Executive Director
State Historic Preservation Officer

June 18, 2020

Angie Segars Anderegg
Hydro Services
Alabama Power Company
Birmingham, Alabama

AHC 2017-1147
Area of Potential Effects Definition
Harris Relicensing (FERC Project Number 2628)
Multiple Counties

Dear Ms. Anderegg:

Upon review of the proposed Area of Potential Effects (APE) for the R.L. Harris Relicensing Project, we find that we concur with the APE boundary as defined by Alabama Power Company:

(a) lands enclosed by the Harris Project Boundary, and
(b) lands or properties which may be outside the Harris Project Boundary, where the authorized Project uses may cause changes in the character or use of the Historic Properties, if Historic Properties exist.

We appreciate your commitment to helping us preserve Alabama's historic archaeological and architectural resources. Should you have any questions, please contact Amanda McBride at 334.230.2692 or Amanda.McBride@ahc.alabama.gov. Have the AHC tracking number referenced above available and include it with any future correspondence.

Sincerely,

Lee Anne Wofford
Deputy State Historic Preservation Officer

LAW/EDS/AMH/amh

HAT 3 - Downstream Aquatic Habitat draft report

APC Harris Relicensing <g2apchr@southernco.com>

Tue 6/30/2020 7:51 PM

To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Bcc: amy.silvano@dcnr.alabama.gov <amy.silvano@dcnr.alabama.gov>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; evan.lawrence@dcnr.alabama.gov <evan.lawrence@dcnr.alabama.gov>; keith.henderson@dcnr.alabama.gov <keith.henderson@dcnr.alabama.gov>; mike.holley@dcnr.alabama.gov <mike.holley@dcnr.alabama.gov>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; matthew.marshall@dcnr.alabama.gov <matthew.marshall@dcnr.alabama.gov>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; ken.wills@jcdh.org <ken.wills@jcdh.org>; arsegars@southernco.com <arsegars@southernco.com>; ammcvica@southernco.com <ammcvica@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; jcarlee@southernco.com <jcarlee@southernco.com>; jefbaker@southernco.com <jefbaker@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; tlmills@southernco.com <tlmills@southernco.com>; cggoodma@southernco.com <cggoodma@southernco.com>; clowry@alabamarivers.org <clowry@alabamarivers.org>

HAT 3,

The draft Downstream Aquatic Habitat report is available for your review on the Harris relicensing website in the HAT 3 folder (2020-06-30 Draft Downstream Aquatic Habitat Report (includes Level Logger Data). It can also be found on FERC elibrary (Draft Report on FERC elibrary). Note that in order to view the Level Logger Data appendix, the report must be downloaded or saved as a pdf. Once open as a pdf, click on the paperclip icon on the left-hand side, then double click on Appendix B – Level Logger Data.xlsx to open the data in Excel.

Please submit your comments on this draft report to Alabama Power at harrisrelicensing@southernco.com by **August 1, 2020**.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: APC Harris Relicensing
Sent: Friday, July 10, 2020 10:00 AM
To: Gauldin, Keith
Cc: APC Harris Relicensing
Subject: RE: Skyline WMA recreation use data

Hi Keith,

Just checking in on the Skyline data and any thoughts on use at Skyline in 2020 in light of the pandemic.

Thanks!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Thursday, June 4, 2020 9:21 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Cc: APC Harris Relicensing <g2apchr@southernco.com>
Subject: Re: Skyline WMA recreation use data

Hello Angie,
I've made the request to my wma manager for the skyline data and I'll forward to you when they come in. Not sure if I responded previously. Thanks.
kg

Get Outlook for iOS [aka.ms]

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Wednesday, June 3, 2020 2:48:28 PM
To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Cc: APC Harris Relicensing <g2apchr@southernco.com>
Subject: FW: Skyline WMA recreation use data

Hi Keith,

We're putting together the draft Recreation Evaluation Study Report for Harris relicensing. Do you have data yet for the 2019-2020 hunting season for Skyline that you could send our way? Also, we were wondering if you have any thoughts on use at Skyline in 2020 (given COVID-19) and any projections on future use at Skyline and/or hunting in general.

Let me know if you have any questions or would like to discuss.

Thanks!

Angie Anderegg
Hydro Services

(205)257-2251
arsegars@southernco.com

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Thursday, August 22, 2019 8:18 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: RE: Skyline WMA recreation use data

EXTERNAL MAIL: Caution Opening Links or Files

Good morning Andrea,
We have a couple of methods that we use, recently, we've implemented a self-service check in box that will improve our estimates. Please review the attached documents and let me know if you have any questions.
Regards,
keith

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Thursday, August 15, 2019 3:32 PM
To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Subject: RE: Skyline WMA recreation use data

Hi Keith,

A couple questions. How are man-days hunted and harvest estimated? And how is man-day defined?

Thanks!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Monday, August 12, 2019 9:36 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: RE: Skyline WMA recreation use data

EXTERNAL MAIL: Caution Opening Links or Files

Good morning Angie,
Attached is the requested information, please let me know if you have any questions.
Regards,
Keith

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Thursday, August 8, 2019 12:22 PM

To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Subject: Skyline WMA recreation use data

Hi Keith,

As you are aware, we are in the process of relicensing the Harris Hydroelectric Project with the Federal Energy Regulatory Commission. As part of the process, Alabama Power is required to obtain information on recreation use within the Project Boundary. Could you please provide information on recreation use at Skyline for the past several years? Specifically, we are looking for numbers of deer and turkey hunters.

Also, I saw online that Frank Allen is the point of contact for obtaining permits at Skyline. Should he be added to our stakeholder list for relicensing? If so, would you mind sending me his email address?

Please let me know if you have any questions or would like to discuss any of the details.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Harris relicensing - response to ISR comments

APC Harris Relicensing <g2apchr@southernco.com>

Fri 7/10/2020 6:58 PM

To: 'harrisrelicensing@southernco.com' <harrisrelicensing@southernco.com>
Bcc: 1942jthompson420@gmail.com <1942jthompson420@gmail.com>; 9sling@charter.net <9sling@charter.net>; allan.creamer@ferc.gov <allan.creamer@ferc.gov>; alpeeple@southernco.com <alpeeple@southernco.com>; amanda.fleming@kleinschmidtgroup.com <amanda.fleming@kleinschmidtgroup.com>; amanda.mcbride@ahc.alabama.gov <amanda.mcbride@ahc.alabama.gov>; amccartn@blm.gov <amccartn@blm.gov>; ammcvica@southernco.com <ammcvica@southernco.com>; amy.silvano@dcnr.alabama.gov <amy.silvano@dcnr.alabama.gov>; andrew.nix@dcnr.alabama.gov <andrew.nix@dcnr.alabama.gov>; arsegars@southernco.com <arsegars@southernco.com>; athall@fujifilm.com <athall@fujifilm.com>; aubie84@yahoo.com <aubie84@yahoo.com>; awhorton@corblu.com <awhorton@corblu.com>; bart_roby@msn.com <bart_roby@msn.com>; baxterchip@yahoo.com <baxterchip@yahoo.com>; bboozer6@gmail.com <bboozer6@gmail.com>; bdavis081942@gmail.com <bdavis081942@gmail.com>; beckyrainwater1@yahoo.com <beckyrainwater1@yahoo.com>; bill_pearson@fws.gov <bill_pearson@fws.gov>

1 attachments (143 KB)

2020-07-10 Response to ISR Comments.pdf;

Harris relicensing stakeholders,

On April 10, 2020, Alabama Power filed the Initial Study Report (ISR) along with six Draft Study Reports and two cultural resources documents. Alabama Power held the ISR Meeting with stakeholders and FERC on April 28, 2020. On May 12, 2020, Alabama Power filed the ISR Meeting Summary. Comments on the ISR, draft reports, and ISR Meeting Summary were due on June 11, 2020.

Alabama filed a response to ISR comments with FERC today. The response is attached and can also be found on the relicensing website: www.harrisrelicensing.com under “Relicensing Documents.” Note that the larger scale maps requested by FERC can be found in the HAT 4 – Project Lands folder.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Alabama Power

600 North 18th Street
Hydro Services 16N-8180
Birmingham, AL 35203
205 257 2251 tel
arsegars@southernco.com

July 10, 2020

VIA ELECTRONIC FILING

Project No. 2628-065
R.L. Harris Hydroelectric Project
Response to Initial Study Report (ISR) Disputes or Requests for Modifications of Study Plan

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

Dear Secretary Bose,

Alabama Power Company (Alabama Power) is the Federal Energy Regulatory Commission (FERC) licensee for the R.L. Harris Hydroelectric Project (Harris Project) (FERC No. 2628). On April 10, 2020, Alabama Power filed the Initial Study Report (ISR) along with six Draft Study Reports and two cultural resources documents. Alabama Power held the ISR Meeting with stakeholders and FERC on April 28, 2020. On May 12, 2020, Alabama Power filed the ISR Meeting Summary. Comments on the ISR, draft reports, and ISR Meeting Summary were due on June 11, 2020.

On June 10, 2020, FERC staff provided comments on the ISR and the ISR Meeting Summary.[1] FERC requested that Alabama Power respond to specific comments by July 11, 2020. Attachment A of this filing includes Alabama Power's responses to those questions for which FERC requested a July 11 response.

Stakeholders and FERC provided three Additional Study Requests and two study modifications as part of comments on the ISR and ISR Meeting Summary. Two of the requested studies do not meet the criteria outlined in FERC's regulations at 18 C.F.R. § 5.9(b) and 5.15 and/or address pre-project conditions. Although, the other study request meets FERC's criteria, Alabama Power is not incorporating the study request into the relicensing process for the Harris Project. The complete response to these study requests is in Attachment B.

FERC staff, Alabama Rivers Alliance (ARA)[2], and the U.S. Environmental Protection Agency (EPA)[3] also requested the inclusion of additional downstream flow release alternatives as modifications to Alabama

[1] Accession No. 20200610-3059.

[2] Accession No. 20200611-5114.

[3] Accession Nos. 20200612-5025 and 20200612-5079.

Power's existing Downstream Release Alternatives Study. Alabama Power's response to the recommended modifications is also provided in Attachment B.

Within preliminary comments on the Draft Water Quality Study Report as well as during the ISR Meeting and within comments on the ISR and ISR Meeting Summary, multiple stakeholders requested that Alabama Power continue monitoring water quality downstream of Harris Dam in 2020 and 2021. To collect dissolved oxygen and water temperature data in 2020, Alabama Power installed the continuous monitor on May 4, following the ISR meeting. The generation monitor was installed on June 1 to align with the monitoring season start date in the Water Quality Study Plan. Alabama Power also agrees to collect water quality data at both locations in 2021 (from March 1 – June 30, 2021 at the continuous monitor and June 1 – June 30, 2021 at the generation monitor) to include in the final license application.

The EPA recommended inclusion of water quality monitoring data with the Water Quality report. Alabama Power notes that the Draft Water Quality Study Report contains an appendix with the 2017 – 2019 water quality monitoring data, and the Final Water Quality Study Report will contain a similar appendix with the complete set of water quality monitoring data (including 2020). Any data collected in 2021 and after the Final Water Quality Study Report is provided will be included within the Final Licensing Proposal.

Alabama Power reviewed FERC and stakeholder comments on the ISR and Draft Study Reports and will address all other comments in any Final Study Reports (filed in 2020 and 2021), the Updated Study Report (USR) (due April 10, 2021), or the Preliminary Licensing Proposal (PLP) (due on or before July 3, 2021).

If there are any questions concerning this filing, please contact me at arsegars@southernco.com or 205-257-2251.

Sincerely,

Angie Anderegg
Harris Relicensing Project Manager

Attachment A: Alabama Power's Response to FERC's June 10, 2020 Staff Comments on the Initial Study Report and Initial Study Report Meeting Summary for the R.L. Harris Hydroelectric Project
Attachment B: Alabama Power's Response to Study Modifications and Additional Study Requests Following the May 12, 2020 Initial Study Report and Initial Study Report Meeting Summary for the R.L. Harris Hydroelectric Project

cc: Harris Stakeholder List

Attachment A

Alabama Power's Response to FERC's June 10, 2020 Staff Comments on the Initial Study Report and Initial Study Report Meeting Summary for the R.L. Harris Hydroelectric Project

FERC questions are presented in italic text and the specific information requested is highlighted in yellow; Alabama Power's response follows.

Draft Downstream Release Alternatives (Phase 1) Study Report

Question #2: During the ISR Meeting, Alabama Power requested that stakeholders provide downstream flow alternatives for evaluation in the models developed during Phase 1 of the Downstream Release Alternatives Study. Stakeholders expressed concerns about their ability to propose flow alternatives without having the draft reports for the Aquatic Resources and Downstream Aquatic Habitat Studies, which are scheduled to be available in July 2020 and June 2020, respectively. It is our understanding that during Phase 2 of this study, Alabama Power would run stakeholder-proposed flow alternatives that may be provided with ISR comments, as well as additional flow alternatives that stakeholders may propose after the results for the Aquatic Resources and Downstream Aquatic Habitat Studies are available. Please clarify your intent by July 11, 2020, as part of your response to stakeholder comments on the ISR.

Alabama Power Response:

Alabama Power's response to evaluating additional flow alternatives is discussed in Attachment B.

Regarding the Aquatic Resources and Downstream Aquatic Habitat Studies, it is Alabama Power's intent to provide stakeholders 30 days to review, provide comments, and recommend any additional flow analyses based on the information in the draft reports. It is also Alabama Power's intent to meet with the Harris Action Teams (HATs) between Fall 2020 and Spring 2021 to present preliminary results, including the bioenergetics modeling, and obtain stakeholder input on additional analyses.

Question #5: Page 14 of the Draft Downstream Release Alternatives (Phase 1) Study Report includes a description of the HEC-ResSim model that was developed for the project. Harris Dam was modeled in HEC-ResSim with both a minimum release requirement and maximum constraint at the downstream gage at Wadley. The draft report states that the minimum release requirement is based on the flow at the upstream Heflin gage, which is located on the Tallapoosa River arm of Harris Reservoir and has 68 years of discharge records. Page 5 of the draft report indicates that there is also a gage (Newell) on the Little Tallapoosa River Arm of the reservoir, which has 45 years of discharge records. It appears that only the Heflin gage was used in developing the minimum release requirement. As part of your response to stakeholder comments on the ISR, please explain the rationale for basing the minimum releases in the HEC-ResSim model only on the flows at the Heflin gage and not also on the flows at the Newell gage.

Alabama Power Response:

The HEC-ResSim model bases the releases on the Green Plan, which specifies the use of the Heflin gage. During development of the Green Plan, the Heflin gage was considered the gage that best mimicked the unregulated, natural flow of the Tallapoosa River. Based on available information from stakeholder meetings in early 2000, the Newell gage was not considered. Stakeholders involved in the Green Plan development process did acknowledge that the Heflin gage excluded the flow from Little Tallapoosa River.

Below is a brief summary of the recorded stakeholder discussions that reference the use of the Heflin gage.

- 5/21/2003 Stakeholder Meeting: Stan Cook (Alabama Department of Conservation and Natural Resources (ADCNR)) stated that the Heflin gage is being used to mimic natural events and that the “Big” Tallapoosa River better reflects a larger scale drainage.
- 8/4/2003 Stakeholder Meeting: Elise Irwin presents findings on the models indicate that the Heflin gage is a promising location.
- 11/3/2003 Stakeholder Meeting: Alabama Rivers Alliance (ARA) stated they wanted Alabama Power to evaluate use of a house turbine that would provide capabilities to duplicate the Heflin gage flows. During this meeting, it was mentioned that the Heflin gage does not include flows from the Little Tallapoosa River, and no one stated opposition to use of the Heflin gage.
- 1/1/2006 Stakeholder Meeting: Stakeholders commented that mimicking Heflin flows would allow for some natural variability of flow in the regulated part of the river.

Draft Erosion and Sedimentation Study Report

Question #7: The Erosion and Sedimentation Study in the approved study plan states that Alabama Power would analyze its existing lake photography and Light Detection and Ranging (LIDAR) data using a geographic information system (GIS) to identify elevation or contour changes around the reservoir from historic conditions and quantify changes in lake surface area to estimate sedimentation rates and volumes within the reservoir. In addition, the approved study plan states that Alabama Power will verify and survey sedimentation areas for nuisance aquatic vegetation. According to the study schedule, Alabama Power will prepare the GIS overlay and maps from June through July 2019 and conduct field verification from fall 2019 through winter 2020.

The Draft Erosion and Sedimentation Study Report does not include a comparison of reservoir contour changes from past conditions or the results of nuisance aquatic vegetation surveys. The report states that limited aerial imagery of the lake during winter draw down and historic LIDAR data for the reservoir did not allow for comparison to historic conditions and that Alabama Power will conduct nuisance aquatic vegetation surveys during the 2020 growing season. It is unclear why the existing aerial imagery and Alabama Power's LIDAR data did not allow for comparison with past conditions or why the nuisance aquatic vegetation surveys will be conducted during the 2020 growing season instead of during the approved field verifications from fall 2019 to winter 2020. As part of your response to stakeholder comments on the ISR, please clarify what existing aerial imagery and LIDAR data was used and why it was not suitable for comparison with past conditions.

Alabama Power Response:

Alabama Power has 2007 and 2015 Light Detection and Ranging (LiDAR) data for Lake Harris that it will use to develop a comparison for the Final Erosion and Sedimentation Study Report.

Ms. Donna Matthews proposed a new study of the Tallapoosa River downstream of Harris Dam to use historic images overlaid on current imagery to evaluate changes in the Tallapoosa River.[1] Alabama Power's response to this study request is addressed in Attachment B; however, Ms. Matthews noted in the ISR Meeting that she would share various images of the Tallapoosa River pre-Harris Dam and after construction. Alabama Power intends to facilitate obtaining copies of these images to provide to FERC for its use in addressing cumulative effects, as noted in FERC's November 16, 2018 Scoping Document 2.[2]

Regarding the nuisance aquatic vegetation component of the Erosion and Sedimentation study, the growing season is late spring into summer, which did not correspond with the fall 2019 to winter 2020 in the FERC-approved study plan schedule. Therefore, Alabama Power plans to conduct the nuisance aquatic vegetation survey in summer 2020. These results will be provided to HAT 2 participants as a technical memo to supplement the Draft Erosion and Sedimentation Study Report.

[1] Accession No. 20200612-5018.

[2] Accession No. 20181116-3065.

Question #9: (comment provided below includes only the information requested by FERC) As part of your response to stakeholder comments on the ISR, please provide:

1) the maps and assessment of the availability of potentially suitable habitat within the project boundary for all of the T&E species on the official species list for the project;
2) documentation of consultation with FWS regarding the species-specific criteria for determining which T&E species on the official species list will be surveyed in the field;
3) a complete list of T&E species that will be surveyed during the 2nd study season as part of the T&E Species Study; and
4) confirmation that Alabama Power will complete the field verification scheduled by September 2020.

Alabama Power Response:

1) The maps and assessment of the availability of potentially suitable habitat within the Harris Project Boundary were included in the draft Threatened and Endangered Species Desktop Assessment Report and were prepared based on available sources of information. Any maps and assessments of habitat suitability that could not be resolved in the desktop assessment will be included in the Final Threatened and Endangered Species Study Report. Alabama Power is actively consulting with U.S. Fish and Wildlife Service (USFWS) regarding Threatened and Endangered Species (T&E species) where existing information is insufficient to determine their presence/absence and habitat suitability. Alabama Power plans to continue to work with USFWS and the Alabama Natural Heritage Program (ANHP) to resolve questions about the species and perform field surveys as deemed appropriate.

2) Alabama Power met with HAT 3 participants on August 27, 2019 to discuss species included in the Threatened and Endangered Species Study Plan. As a result of that meeting and based on recommendations from USFWS, Alabama Power conducted surveys for Finelined Pocketbook in the Tallapoosa River and Palezone Shiner in Little Coon Creek. Additional surveys for Finelined Pocketbook in tributaries to Lake Harris are ongoing and should be completed in Summer 2020. Alabama Power is consulting with the USFWS and ANHP to determine the need for additional surveys. If requested, Alabama Power may perform surveys for additional species and/or assessments to determine suitability of habitat that could not be resolved in the Threatened and Endangered Species Desktop Assessment. All consultation regarding this process will be included as an appendix to the Final Threatened and Endangered Species Study Report.

3) Alabama Power plans to conduct additional surveys for Finelined Pocketbook in Summer 2020. Based on ongoing consultation with USFWS and with input from ANHP, Alabama Power may perform surveys for Price's Potato Bean, White Fringeless Orchid, and Little Amphianthus (pool sprite) as well as assessments to determine if suitable habitat exists for Red-cockaded Woodpecker and Little Amphianthus.

4) Alabama Power plans to complete field verifications by September 2020.

Question #10: To facilitate review of the existing shoreline land use classifications, please file larger scale maps of all the shoreline areas as a supplement to the Draft Project Lands Evaluation Report, as part of your response to stakeholder comments on the ISR. Please include land use classifications on the maps. In addition, if available, please file the GIS data layers of the existing and proposed shoreline land use classifications.

Alabama Power Response:

Included with this filing are the larger scale maps, including land classifications, and the GIS files of the existing and proposed shoreline land use classifications.

Attachment B

Alabama Power's Response to Study Modifications and Additional Study Requests Following the May 12, 2020 Initial Study Report and Initial Study Report Meeting Summary for the R.L. Harris Hydroelectric Project

Alabama Power received two recommendations to modify the existing FERC-approved studies and three Additional Study Requests. Alabama Power's response to the study modifications and Additional Study Requests is discussed below.

A. <u>Modifications to Existing Studies</u>

1) FERC Question #3:[1] "To facilitate modelling of downstream flow release alternatives, we recommend that Alabama Power run base flows of 150 cfs, 350 cfs, 600 cfs, and 800 cfs through its model for each of the three release scenarios (i.e., the Pre-Green Plan, the Green Plan, and the modified Green Plan flow release approach). The low-end flow of 150 cfs was proposed by Alabama Power as equivalent to the daily volume of three 10-minute Green Plan pulses. This flow also is about 15 percent of the average annual flow at the United States Geological Survey's flow gage (#02414500) on the Tallapoosa River at Wadley, Alabama, and represents "poor" to "fair" habitat conditions. We recommend 800 cfs as the upper end of the base flow modeling range because it represents "good" to "excellent" habitat and is nearly equivalent to the U.S. Fish and Wildlife Service's Aquatic Base Flow guideline for the Tallapoosa River at the Wadley gage. The proposed base flows of 350 cfs and 600 cfs cover the range between 150 cfs and 800 cfs."

2) ARA's June 11, 2020 comments:[2] "While reserving the right to request other release alternatives be considered once more information is made available to stakeholders, ARA proposes the following study modification request pursuant to 18 C.F.R. § 5.15(d) for additional flow scenarios be analyzed as part of the Downstream Release Alternatives Study:

   (i) A variation of the existing Green Plan where the Daily Volume Release is 100% of the prior day's flow at the USGS Heflin stream gage, rather than the current 75%;

   (ii) A hybrid Green Plan that incorporates both a base minimum flow of 150 cfs and the pulsing laid out in the existing Green Plan release criteria;

   (iii) A constant but variable release that matches the flow at the USGS Wadley stream gage to the UGSG Heflin stream gage to mimic natural flow variability, and

   (iv) 300 cfs and 600 cfs minimum flows.

   Some of these flows, particularly items (iii) and (iv) may have been modeled internally by Licensee as part of the original adaptive management process; however, those models are not currently available as part of this relicensing. Studying a wider range of potential flows during the ILP could result in improved diversity and abundance of aquatic life and habitat, more recreation opportunities, decreased erosion and sedimentation, and gains in water quality."

[1] Accession No. 20200610-3059.

[2] Accession No. 20200611-5114.

3) In its June 11, 2020 comments[3], EPA "requests that the flow scenarios include the evaluation of an option including both the pulses of the Green Plan with a minimum flow, and a higher minimum flow.

Alabama Power's Response:

Based on FERC, ARA, and EPA's recommendation to modify the Downstream Release Alternatives study, Alabama Power will model the following additional downstream flow scenarios:

- A variation of the existing Green Plan where the Daily Volume Release is 100% of the prior day's flow at the USGS Heflin stream gage, rather than the current 75%;
- A hybrid Green Plan that incorporates both a base minimum flow of 150 cfs and the pulsing laid out in the existing Green Plan release criteria;
- 300 cfs continuous minimum flow;
- 600 cfs continuous minimum flow; and a
- 800 cfs continuous minimum flow.

These recommended flow release alternatives are in addition to Alabama Power's release alternatives in the FERC-approved Study Plan that include:

- Pre-Green Plan (peaking only; no pulsing or continuous minimum flow);
- Green Plan (existing condition);
- Modified Green Plan (changing the time of day in which the Green Plan pulses are released); and
- 150 cfs continuous minimum flow.

Alabama Power has not included ARA's recommended "constant but variable release that matches the flow at the USGS Wadley streamgage to the UGSG Heflin streamgage to mimic natural flow variability", as an alternative to model. This alternative would eliminate peaking operations, which would significantly reduce or eliminate use of the Harris Project for voltage support and system reliability, including black start operations. Alabama Power regards this alternative as a complete change in Project operations (from peaking to run-of-river) that is not consistent with Project purposes.[4]

Furthermore, the units are not capable of adjusting to the extent of simulating natural river flows. The flow through the Harris units varies only to the extent of changes in gross head (the difference between the forebay elevation and tailwater elevation) and the wicket gate opening. Small wicket gate openings lead to excessive pressure drops, which is the primary driver of cavitation[5] initiation. The best way to minimize cavitation and its associated detrimental vibrations is to quickly move the wickets gates from a closed position to the best gate setting. The best gate setting is a permanent setting on the governor system to ensure that the control system will force a fast movement of the wicket gates through the "rough zone" to the best gate position thereby minimizing the time spent in the rough zone. The rough zone is an area on the operating curve where flows that are less than efficient gate cause increased vibrations in the turbine

[3] Accession Nos. 20200612-5025 and 20200612-5079.

[4] For additional explanation, see Alabama Power's March 13, 2019 letter to FERC (Accession No. 20190313-5060).

[5] Cavitation is a phenomenon in which rapid changes of pressure in a liquid lead to the formation of small vapor-filled cavities in places where the pressure is relatively low.

and cavitation along the low-pressure surfaces of the turbine runner. For these reasons, this is not a viable alternative.

Alabama Power also declines FERC's recommendation to study all of the continuous minimum flows combined with the Pre-Green Plan, Green Plan, and Modified Green Plan. Alabama Power asserts that modeling one combination of a continuous minimum flow AND pulsing (the hybrid Green Plan listed above) is adequate to determine the effect of this downstream release alternative on Project operations and other resources. The eight alternatives Alabama Power will model will provide sufficient information to evaluate the resources of interest, determine any downstream release proposal, and determine protection, mitigation, and enhancement (PM&E) measures to be incorporated into the new license for the Project.

B. Proposed Additional Studies

1) ARA proposed a new study for "Battery Storage Feasibility Study to Retain Full Peaking Capabilities While Mitigating Hydropeaking Impacts".

Alabama Power's Response:

While ARA's additional study request appears to conform to FERC's regulations and criteria for additional study requests, Alabama Power respectfully declines to complete this study for the Harris Project relicensing. Our reasons are provided below:

a. ARA notes that there is a data gap around Project ramping rates. The Harris Project units are not capable of ramping; rather they were designed as peaking units to quickly react to electrical grid needs, and as such, the turbines were not designed to operate in a gradually loaded state—or restricted ramping rate—over an extended period of time. In fact, restricted ramping is avoided to prevent damage to hydroturbine machinery. When transitioning from spinning mode to generating mode, the wicket gates are opened over a period of approximately 45 seconds. One reason for this method of operating is so the turbine spends a minimal amount of time in the rough zone.

b. The goal of this study, as outlined by ARA, is to determine whether a battery energy storage system (BESS) could be economically integrated at Harris. This technology is very new and there is no established methodology for integrating BESS at hydropower facilities. The cost of a BESS system with restricted hydraulic ramping is concerning because the cost must include not only the battery but also the cost of replacing both turbine runners and determining the extent of the effect on the balance of plant. Each unit at Harris makes approximately 60 megawatts (MW) at efficient gate. For an example, a 60 MW/60-megawatt hour (MWhr), 1-hour duration, standalone battery including construction and installation, is estimated to cost $36M dollars.[6] This battery would need to be sized to produce up to 60 MW for one hour so that the full capacity of the turbine could be supplemented from battery power. The battery would need this capacity because ramping would essentially begin at zero MWs with a very small wicket gate opening and then gradually open over the period of one hour. A smaller MW battery would not be large enough to make up the lost MWs in a full ramping scenario. For example, if a 5 MW battery

[6] Fu, Remo and Margolis, "2018 U.S. Utility-Scale Photovoltaics-Plus-Energy Storage System Costs Benchmark", National Renewable Energy Laboratory, NREL/TP-6A20-71714.

were used, the unit would have to ramp very quickly, within 30 to 45 seconds, to an output of 55 MW. The 5 MW battery would then make up for the remaining power to reach the original power output of 60 MW. To be clear, a battery smaller than the unit's power at efficient gate does not allow for full ramping because the unit must quickly be brought up to a point where the unit's power plus the battery's power equals 60 MW.

The cost of $36M would be doubled to $72M since there are two units at Harris Dam and peaking requires the availability of both units. Additionally, this is a one-hour battery, so the unit(s) must be at efficient gate at one hour past the start of generation. If a longer ramping rate was desired, the battery would likely need to be even larger. The cost to upgrade the turbine runners in order to have a much wider operating range would also need to be considered. It is also important to note that it is undetermined, due to the site-specific conditions and the geometry of the water passages in the powerhouse, if a suitable turbine runner with a wide operating range can even be produced.

c. While information and access to battery storage technology is increasing, as ARA notes, integrating BESS at hydropower projects is a relatively new field with no established methodology. This is especially true for the size of BESS needed to replace the full megawatt capacity at Harris. Furthermore, full-scale redesign of the existing turbines is not being considered by Alabama Power during this relicensing.

For these reasons, Alabama Power declines this study proposal and contends that the downstream release alternatives study will provide information for Alabama Power and the stakeholders to effectively evaluate effects of downstream releases on Project resources (both on Lake Harris and in the Tallapoosa River below Harris Dam) and for Alabama Power to propose an operating scenario for the next license term.

2) Pre-and Post-Dam Analysis of Downstream Impacts, including flooding, erosion, and habitat changes to flora and fauna.

Alabama Power's Response:

Mr. Chuck Denman[7] proposed that Alabama Power conduct an additional study that analyzes pre-dam and post-dam impacts on flooding, erosion, plants, and fisheries. This study request did not meet FERC's criteria for an additional study; however, Alabama Power notes that many of the analyses requested by Mr. Denman are in fact occurring as part of the Harris relicensing. FERC does not require a licensee to evaluate pre-project conditions in a relicensing. In FERC's "*Guide to Understanding and Applying the Integrated Licensing Process Study Criteria*" (2012), FERC notes that where information is being sought solely to look at historic effects, FERC staff will not require an applicant to reconstruct pre-project conditions, because that is not the baseline from which the FERC conducts its environmental analysis. The FERC's choice of current environmental conditions as the baseline for environmental analysis in relicense cases was affirmed in American Rivers v. FERC, 187 F.3d 1007, amended and rehearing denied, 201 F.3d 1186 (9th Cir., 1999); Conservation Law Foundation v. FERC, 216 F.3d 41 (D. C. Cir. 2000).

[7] Accession No 20200611-5174.

Alabama Power has consistently communicated and explained that it will use the 100-year flood event to model effects from a change in Harris Project operations on downstream resources. Alabama Power has also completed an erosion evaluation and is reviewing all stakeholder comments on lake and downstream erosion and sedimentation and will address those comments in the Final Erosion and Sedimentation Report. Alabama Power is also evaluating how changes to current Project operations may affect nuisance aquatic vegetation. Finally, Alabama Power has compiled a large amount of existing information on the Tallapoosa River fisheries community and is also conducting three studies investigating fish habitat, aquatic resources in the Tallapoosa River, and water quality and water temperature in both Lake Harris and in the Tallapoosa River. For these reasons, Alabama Power believes the issues raised by Mr. Denman are covered in the FERC-approved Study Plan and a new study is not warranted.

3) A New Study of the Downstream River Using Historic Images Overlaid onto Current Imagery

Alabama Power's Response:

Ms. Donna Matthews[8] proposed that Alabama Power conduct a new study using GIS to compare historic imagery to current imagery to evaluate effects of releases downstream of Harris Dam. Ms. Matthews notes that existing data can be used and that Alabama Power can gather historic images and overlay them on current images to determine the effects of the dam on the river downstream. The primary purpose of this study is to address "significant and persistent concerns about erosion" in the Tallapoosa River downstream of Harris Dam.

Alabama Power notes that while this study does not conform to FERC's criteria for additional studies, Alabama Power is committed to evaluating erosion and sedimentation effects on Lake Harris and in the Tallapoosa River downstream of Harris Dam. Alabama Power is reviewing stakeholder comments on the Draft Erosion and Sedimentation Report and will address these comments in the Final Erosion and Sedimentation Report. Further, the FERC-approved Erosion and Sedimentation Study Plan provides adequate methodology to address erosion and sedimentation issues resulting from Harris Project operations.

As noted above, FERC does not require licensees in the relicensing process to study pre-project conditions; however, Ms. Matthews volunteered in the April 28, 2020 ISR Meeting to provide images to Alabama Power that FERC may consider in conducting its cumulative effects analysis for soils and geologic resources, specifically erosion and sedimentation. Alabama Power intends to contact Ms. Matthews to obtain copies of these photos.

[8] Accession No. 20200611-5169.

APC Harris Relicensing

From: Anderegg, Angela Segars
Sent: Monday, July 13, 2020 8:53 AM
To: Barry Morris
Subject: RE: Harris Relicensing: continuous minimum flow in Tallapoosa River

Hi Barry,

The answer is B – the Green Plan includes pulses *plus* releases for generation needs.

The Green Plan is included in the Downstream Release Alternatives study plan and in the Pre-Application Document (Appendix E). However, the best explanation of how we operate is in a presentation Alan Peeples gave on January 31, 2018. The entire presentation is worth watching; however, the specifics of peaking operations and the Green Plan begins around minute 40 in the video and slide 53 in the powerpoint.

http://harrisrelicensing.com/_layouts/15/start.aspx#/HAT%201%20%20Project%20Operations/Forms/AllItems.aspx

I hope this helps!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Barry Morris <rbmorris222@gmail.com>
Sent: Saturday, July 11, 2020 10:20 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: Re: Harris Relicensing: continuous minimum flow in Tallapoosa River

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Your explanation is not confusing, but what I can't grasp is why the CMF plus peak demand generating will not cause the lake level to go lower.

OR, has the dam been doing the 3x10 pulsing *plus* peak demand generating for years and I've not been aware of it? In that case obviously the amount of water thru the dam in CMF is the same, just spaced out throughout the day.

Sorry if my ignorance of the green plan is causing you extra work. Does the company have a concise summary of the green plan that I could use to make me and the LWPOA smarter?

Thanks for your help. Barry

On July 10, 2020, at 8:37 AM, "Anderegg, Angela Segars" <ARSEGARS@southernco.com> wrote:

Hi Barry,

A 150 cfs continuous minimum flow is the same daily volume as the 3- 10 minute pulses currently provided by the Green Plan and does not include any releases for peaking operations. The Green Plan pulses are released through the turbines, so a large volume of water is released over a short period of time each time we pulse. The 150 cfs continuous flow spreads the volume provided by the pulses throughout the day. Also, the 150 cfs would have to be provided through some other mechanism than the turbines because they are not designed to operate at that low flow.

I hope this helps, but if it's still confusing, don't hesitate to give me a call.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Barry Morris <rbmorris222@gmail.com>
Sent: Thursday, July 9, 2020 12:49 PM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: Harris Relicensing: continuous minimum flow in Tallapoosa River

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Angie: I'm trying to write up relicensing notes for the LWPOA membership and I'm still puzzled as to how a 150 CFS continuous minimum flow (equivalent of a day's generation) would not impact the Lake RL Harris water level. Seems to me it would double the amount of water released thru the dam every day and thus *must* lower the lake. What am I missing here?

I can't find anything in the on line documents, but there's a lot there. Could you please have one of your folks send me some sort of explanation, or direct me to a place in the documents where this is spelled out?

Thanks for your help.

Barry Morris
LWPOA
404 449 3452

APC Harris Relicensing

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Monday, July 13, 2020 8:09 AM
To: APC Harris Relicensing
Subject: RE: Skyline WMA recreation use data
Attachments: Game Check Deer Harvest by Location 2019-2020 Seasons.xlsx; Game Check Turkey Harvest by Location 2019-2020 Seasons.xlsx; Copy of Turkey Harvest Comparison 2019 to 2020 Season.xlsx

God morning Angie,
Attached is the data for deer and turkey, I should have some info on small game soon for you.
During our turkey season, all of our WMAs experienced a great deal more use and hunt pressure due to everyone being off from work, it was highly evident that many were spending their free time in the woods, both private and public. See attached gamecheck harvest data comparison, interesting.
Thanks.
kg

From: APC Harris Relicensing <g2apchr@southernco.com>
Sent: Friday, July 10, 2020 10:00 AM
To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Cc: APC Harris Relicensing <g2apchr@southernco.com>
Subject: RE: Skyline WMA recreation use data

Hi Keith,

Just checking in on the Skyline data and any thoughts on use at Skyline in 2020 in light of the pandemic.

Thanks!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Thursday, June 4, 2020 9:21 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Cc: APC Harris Relicensing <g2apchr@southernco.com>
Subject: Re: Skyline WMA recreation use data

Hello Angie,
I've made the request to my wma manager for the skyline data and I'll forward to you when they come in. Not sure if I responded previously. Thanks.
kg

Get Outlook for iOS [aka.ms]

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Wednesday, June 3, 2020 2:48:28 PM
To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>

Cc: APC Harris Relicensing <g2apchr@southernco.com>
Subject: FW: Skyline WMA recreation use data

Hi Keith,

We're putting together the draft Recreation Evaluation Study Report for Harris relicensing. Do you have data yet for the 2019-2020 hunting season for Skyline that you could send our way? Also, we were wondering if you have any thoughts on use at Skyline in 2020 (given COVID-19) and any projections on future use at Skyline and/or hunting in general.

Let me know if you have any questions or would like to discuss.

Thanks!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Thursday, August 22, 2019 8:18 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: RE: Skyline WMA recreation use data

Good morning Andrea,
We have a couple of methods that we use, recently, we've implemented a self-service check in box that will improve our estimates. Please review the attached documents and let me know if you have any questions.
Regards,
keith

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Thursday, August 15, 2019 3:32 PM
To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Subject: RE: Skyline WMA recreation use data

Hi Keith,

A couple questions. How are man-days hunted and harvest estimated? And how is man-day defined?

Thanks!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Sent: Monday, August 12, 2019 9:36 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: RE: Skyline WMA recreation use data

Good morning Angie,
Attached is the requested information, please let me know if you have any questions.
Regards,
Keith

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Thursday, August 8, 2019 12:22 PM
To: Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>
Subject: Skyline WMA recreation use data

Hi Keith,

As you are aware, we are in the process of relicensing the Harris Hydroelectric Project with the Federal Energy Regulatory Commission. As part of the process, Alabama Power is required to obtain information on recreation use within the Project Boundary. Could you please provide information on recreation use at Skyline for the past several years? Specifically, we are looking for numbers of deer and turkey hunters.

Also, I saw online that Frank Allen is the point of contact for obtaining permits at Skyline. Should he be added to our stakeholder list for relicensing? If so, would you mind sending me his email address?

Please let me know if you have any questions or would like to discuss any of the details.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

2019-2020 Game Check Reported Deer Harvest By Location

Harvest Location	Buck	Doe	Grand Total
DMAP			
DMAP	73	339	412
DMAP subtotal	*73*	*339*	*412*
Federal			
Unknown		1	1
Aliceville Lake	6		6
Anniston Army Depot	5	3	8
Bankhead National Forest	80	27	107
Choctaw NWR	2	6	8
Claiborne Lake	7	3	10
Conecuh National Forest	55	37	92
Dannelly Reservoir	2		2
Eufaula NWR	16	16	32
Fort Benning	31	68	99
Fort McClellan	71	63	134
Fort Rucker	64	28	92
Gainesville Lake	3	1	4
Jacinto Port Tract	7	6	13
Mountain Longleaf NWR	4		4
Redstone Arsenal	53	38	91
Talladega National Forest	173	44	217
Tennesee-Tombigbee Waterway	4	6	10
Tuskegee National Forest	35	19	54
Undeveloped TVA Public Land	14	8	22
Walter F George Lake	3	2	5
Wheeler NWR	29	26	55
Woodruff Lake	6	3	9
Federal subtotal	*670*	*405*	*1075*
Forever Wild			
Coon Creek Tract	1		1
Forever Wild Field Trial Area	3		3
Jackson County Waterfowl Areas	1	1	2
Lillian Swamp Complex	2		2
Old Cahawba Praire Tract	34	20	54
Red Hills Complex	7	3	10
Shoal Creek Nature Preserve	4		4
Sipsey River Swamp North	2		2
Sipsey River Swamp South	2		2
Splinter Hill Bog Complex	2	1	3
Forever Wild subtotal	*58*	*25*	*83*
Physically Disabled Hunting Area			
Dozier Physically Disabled Hunting Area		2	2
Fayette Physically Disabled Hunting Area	2	2	4
Jordan Physically Disabled Hunting Area	2		2
Little River State Forest Physically Disabled Hunting Area	2		2
Macon State Forest Physically Disabled Hunting Area		1	1
Marengo Physically Disabled Hunting Area	2	1	3
R.L. Harris Area	2	1	3
Turnipseed-Ikenberry Place Physically Disabled Hunting Area	2	3	5
Physically Disabled Hunting Area subtotal	*12*	*10*	*22*
Special Opportunity Area			
Cedar Creek SOA	3	22	25
Crow Creek SOA	1	3	4
Fred T. Stimpson SOA	15	29	44
James D. Martin-Skyline		4	4
Portland Landing SOA	22	90	112
Rum Creek SOA	1	5	6
Uchee Creek SOA	11	36	47
Upper State SOA	1	10	11
Special Opportunity Area subtotal	*54*	*199*	*253*
WMA			
Autauga County	11	6	17
Barbour	143	74	217
Black Warrior	59	6	65
Blue Spring	35	15	50
Boggy Hollow		2	2
Choccolocco	48	15	63
Coon Gulf Tract	1	2	3
Coosa	19	6	25
David K. Nelson	22	19	41
Fred T. Stimpson Sanctuary		3	3
Freedom Hills	79	36	115
Geneva State Forest	33	30	63
Grand Bay Savanna	2		2
Hollins	26	10	36
Jacinto Port Tract	1	4	5
Jackson County Waterfowl Areas	24	25	49
James D. Martin-Skyline	151	56	207
Lauderdale	55	8	63
Little River	37	37	74
Lowndes	28	44	72
Mulberry Fork	40	23	63
N. Sauty & Raccoon Ref.	2	16	18
Oakmulgee	81	65	146
Perdido River	42	17	59
Riverton CHA	12	6	18
Sam R. Murphy	86	96	182
Scotch		2	2
Seven-Mile Island	7	3	10
Swan Creek & Mallard-Fox Creeks	10	14	24
Upper Delta	19	7	26
Upper State Sanctuary	2		2
W. L. Holland & Mobile Tensaw Delta	8	4	12
William R. Ireland, Sr. - Cahaba River	72	31	103
Yates Lake West CHA	3		3
WMA subtotal	*1158*	*682*	*1840*
State Parks			
Lakepoint SP	3	3	6
State Parks subtotal	*3*	*3*	*6*
Other Public			
Other Public	1147	603	1750
Other Public subtotal	*1147*	*603*	*1750*
Other Private			
Other Private	51606	37423	89029
Other Private subtotal	*51606*	*37423*	*89029*
Grand Total	54778	39686	94464

2019-2020 Game Check Reported Turkey Harvest By Location			
Harvest Location	Adult	Jake	Grand Total
DMAP			
DMAP	22	3	25
DMAP subtotal	*22*	*3*	*25*
Federal			
Aliceville Lake	2		2
Bankhead National Forest	42	6	48
Cahaba River NWR	1		1
Claiborne Lake	1		1
Conecuh National Forest	14		14
Fort Benning	4	1	5
Fort Rucker	47	4	51
Jacinto Port Tract	3		3
Mountain Longleaf NWR	3		3
Talladega National Forest	249	7	256
Tennesee-Tombigbee Waterway	3		3
Tuskegee National Forest	5		5
Undeveloped TVA Public Land	6	2	8
Woodruff Lake	1		1
Federal subtotal	*381*	*20*	*401*
Forever Wild			
Coon Creek Tract	1		1
Indian Mountain Complex	1		1
Old Cahawba Praire Tract	6		6
Red Hills Complex	7		7
Shoal Creek Nature Preserve	1		1
Sipsey River Swamp North	2		2
Sipsey River Swamp South	2	1	3
Forever Wild subtotal	*20*	*1*	*21*
Other Public			
Other Public	337	23	360
Other Public subtotal	337	23	360
Special Opportunity Area			
Cedar Creek SOA	4		4
Portland Landing SOA	2		2
Rum Creek SOA	2		2
Uchee Creek SOA	2		2
Special Opportunity Area subtotal	*10*		*10*
WMA			
Autauga County	13		13
Barbour	43	5	48
Black Warrior	55	1	56
Blue Spring	11		11
Boggy Hollow	4		4
Choccolocco	46	6	52
Coosa	24		24
David K. Nelson	2		2
Freedom Hills	24	6	30
Geneva State Forest	16	1	17
Hollins	41	1	42
Jacinto Port Tract	6		6
Jackson County Waterfowl Areas	8		8
James D. Martin-Skyline	76	7	83
Lauderdale	35	6	41
Little River	22	1	23
Lowndes	29	2	31
Mulberry Fork	26	2	28
N. Sauty & Raccoon Ref.	1		1
Oakmulgee	27	1	28
Perdido River	7	1	8
Riverton CHA	5		5
Sam R. Murphy	14		14
Upper Delta	1		1
William R. Ireland, Sr. - Cahaba River	39	3	42
Yates Lake West CHA	9	3	12
(blank)	1		1
WMA subtotal	*585*	*46*	*631*
Other Private			
Other Private	14457	746	15203
Other Private subtotal	14457	746	15203
Grand Total	15812	839	16651

Reported Turkey Harvest 2018-2019 Season
(Nov-Dec 2018; 06 March - 30 Apr 2019)

Harvest Landowner	Adult	Jake	Total
DMAP	2		2
Federal	194	10	204
Forever Wild	8	1	9
Other Private	9087	786	9873
Other Public	380	44	424
Special Opportunity Area	8	1	9
WMA	301	32	333
Grand Total	**9980**	**874**	**10854**

Reported Turkey Harvest 2019-2020 Season
(Nov-Dec 2019; 14 March - 4 May 2020)

Harvest Landowner	Adult	Jake	Total
DMAP	22	3	25
Federal	381	20	401
Forever Wild	20	1	21
Other Private	14457	746	15203
Other Public	337	23	360
Special Opportunity Area	10		10
WMA	585	46	631
Grand Total	**15812**	**839**	**16651**

3.789562188

Game Check Reported Turkey Harvest 2018-2019 Season
(Nov-Dec 2018; 06 March - 30 Apr 2019)

Harvest Landowner	Adult	Jake	Total
Private	9089	786	9875
Public	891	88	979
Grand Total	**9980**	**874**	**10854**

Game Check Reported Turkey Harvest 2019-2020 Season
(Nov-Dec 2019; 14 March - 4 May Apr 2020)

Harvest Landowner	Adult	Jake	Total
Private	14479	749	15228
Public	1333	90	1423
Grand Total	**15812**	**839**	**16651**

91.45396673
8.546033271

% Increase in Reported Turkey Harvest
From 2019 Season to 2020 Season

Harvest Landowner	Adult	Jake	Total
Private	59%	-5%	54%
Public	50%	2%	45%
Grand Total	58%	-4%	53%

APC Harris Relicensing

From: Anderegg, Angela Segars
Sent: Thursday, July 23, 2020 10:56 AM
To: Donna Matthews
Cc: APC Harris Relicensing
Subject: Historic Tallapoosa River Photos

Hi Donna,

I hope this email finds you doing well. I'm following up on the April 28, 2020 Harris Initial Study Report meeting, where you indicated that you have collected some historic photos of the Tallapoosa River banks below Harris Dam. We would like to collect the photos from you and send them to FERC for their cumulative impacts analysis on erosion downstream of the Harris Dam.

Please answer a few questions below, so we can figure out how best to get the photos from you.

- Are all the photos digital files?
- Do you know how large the files are?
- How many photos in all?
- If there are any hard copy photos, will you need us to return them to you? Or would it be best for us to meet up so we can scan them in?
- Are either the digital or hard copy photos labeled or sorted in a specific manner?

Thank you for your help,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: Anderegg, Angela Segars
Sent: Friday, July 24, 2020 4:10 PM
To: 'Evan Collins'; Al Schotz (ars0002@auburn.edu); todd.fobian@dcnr.alabama.gov
Cc: Baker, Jeffery L.; Chandler, Keith Edward; Carlee, Jason; Jason Moak; APC Harris Relicensing
Subject: Harris relicensing - T&E Species
Attachments: 2020-07-24 Palezone Shiner Survey Report.pdf

Good afternoon,

Alabama Power Company (Alabama Power) owns and operates the R.L. Harris Project (FERC Project No. 2628) (Harris Project), licensed by the Federal Energy Regulatory Commission (FERC or Commission). Alabama Power Company (Alabama Power) is relicensing the 135- megawatt (MW) Harris Project, and the existing license expires in 2023. As part of phase one of the FERC-approved Threatened and Endangered Species Study Plan, Alabama Power conducted a desktop assessment of threatened and endangered species (**T&E Species Desktop Assessment**). The desktop assessment includes a description and maps of the project, reviews of existing information, and maps depicting known ranges and habitat.

While preparing the desktop assessment, Alabama Power determined it is unclear if some species or their suitable habitats occur within the Harris Project Boundary (maps of the Project Boundary can be found in the T&E Species Desktop Assessment – Figures 1-1 and 1-2). Based on guidance from U.S. Fish and Wildlife Service (FWS), Alabama Power has already begun performing surveys to determine if some of these species occur within the Harris Project Boundary. Surveys were recently performed for Palezone Shiner in Little Coon Creek at Skyline. Attached is a brief report of this survey. Surveys for Fine-lined Pocketbook were performed in Fall 2019 and will be completed in Summer 2020.

Alabama Power is seeking your guidance as resource managers and experts as to whether surveys for four species or assessments of habitat suitability are advised. The following sections describe these species and the areas where Alabama Power lacks enough information. Bolded text are questions we would appreciate your assistance in answering. Due to the relatively rigid deadlines involved in the FERC relicensing process, we would appreciate your response by **August 7th**.

Red-cockaded Woodpecker (*Picoides borealis*)
This species is listed as potentially occurring in Clay and Randolph counties. This woodpecker requires open pine woodlands and savannahs with large, mature pines for nesting and roosting habitat. Mature pines, preferably longleaf pine, are required as cavity trees. The cavity trees are located in open stands with little or no hardwood mid-story and few or no over-story hardwoods. The

woodpeckers require abundant native bunchgrass and groundcovers suitable for foraging within their habitat. Land use analysis indicates the Harris Project Boundary at Lake Harris contains 3,068 acres of coniferous forest; however, the data is not specific enough to determine if these forests contain the more specific habitat characteristics required by Red-cockaded Woodpecker.

Are you aware of any occurrence of Red-cockaded Woodpecker within or near the Harris Project Boundary?

Are you aware of any suitable habitat for Red-cockaded Woodpecker within or near the Harris Project Boundary?

Pool Sprite (*Amphianthus pusilis*)

Limited populations of this species are known to occur in Randolph and Chambers counties. This species is a small, ephemeral aquatic annual herb with floating and submerged leaves whose entire life cycles lasts approximately one month, typically in early spring. This species occurs in very specific habitat that is restricted to vernal pools on granite outcrops in the southeastern Piedmont. Optimal habitat has been described as a shallow, flat-bottomed pool with a rock rim. A single occurrence within the Harris Project Boundary at Flat Rock was noted in 1995. Recent surveys commissioned by Alabama Power have failed to detect the Pool Sprite at Flat Rock. The granite outcrops at Flat Rock appear to be the only potentially suitable habitat within the Harris Project Boundary.

Are you aware of any additional survey work that might have documented the presence/absence of Pool Sprite and/or suitable habitats within the Harris Project Boundary?

White Fringeless Orchid (*Platanthera integrilabia*)

This species is a slender, erect, perennial herb that grows in colonies. The orchid blooms from late July to early September with fruits maturing in October. White Fringeless Orchid typically occurs in wet, flat, or boggy areas with acidic muck or sand. This plant prefers partially shaded areas at the head of streams or seepage slopes. Two extant populations have been identified in Clay and Cleburne in Talladega National Forest. According to FWS, this species' habitat range includes portions of the Harris Project Boundary at both Skyline and Lake Harris.

Are you aware of any occurrence of White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Are you aware of any suitable habitat for White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Price's Potato Bean (*Apios priceana)*

Price's Potato Bean is a twining, herbaceous, perennial vine that grows from a tuber and has greenish-white or brownish-pink flowers. This species is found in open, bottom areas near or along the banks of streams and rivers, sometimes near the base of limestone bluffs. There are approximately 46 miles of stream bottoms with the Harris Project Boundary at Skyline. According to the most recent 5-year review (2016), there is a known population which occurs near Little Coon Creek in the Skyline WMA.

Can you provide the exact location of the population(s) at Skyline WMA so we can determine their proximity to the Harris Project Boundary?

Have any surveys for this species been performed within the Harris Project Boundary?

Do you believe there are areas within the Harris Project Boundary where this species may potentially occur and should be surveyed?

Thank you,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Palezone Shiner (*Notropis albizonatus*) Survey Report

R.L. Harris Project

FERC No. 2628

Prepared for:

Alabama Power Company

Prepared by:

Kleinschmidt Associates

July 2020

Kleinschmidtgroup.com

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1.0 INTRODUCTION

Alabama Power Company (Alabama Power) is the Federal Energy Regulatory Commission (FERC) licensee for the R.L. Harris Hydroelectric Project (Harris Project) (FERC No. 2628). On June 1, 2018, Alabama Power filed a Pre-Application Document and began the Integrated Licensing Process (ILP) for the Harris Project.

On November 13, 2018, Alabama Power filed ten proposed study plans for the Harris Project. FERC issued a Study Plan Determination on April 12, 2019, which included FERC staff recommendations. Alabama Power incorporated FERC's recommendations and filed the Final Study Plans with FERC on May 13, 2019. On August 27, 2019, the Harris Action Team (HAT) 3 (Fish & Wildlife) met to discuss components of the Threatened and Endangered Species Study Plan (TESS). At that meeting, the U.S. Fish and Wildlife Service (FWS) noted that Palezone Shiner (*Notropis albizonatus*), a federally endangered fish species, occurs in tributaries of the Tennessee River near the Project boundary at Skyline in Jackson County, Alabama. The FWS subsequently recommended that Alabama Power perform surveys to determine if Palezone Shiner occur within or near the Project boundary in Little Coon Creek.

The Palezone Shiner is a small, slender minnow species with a pointed snout and large eyes. It has a small, dark, wedge-shaped spot at the base of the caudal fin and may exhibit a light yellow color at the base of its pectoral fins during breeding. Historically, this species was found in the Tennessee and Cumberland River systems; however, the only know extant populations occur in the Paint Rock River watershed (Tennessee River tributary), and the Little South Fork of the Cumberland River (ADCNR 2020). Palezone Shiner are found in runs and pools of large creeks and small rivers with clean bedrock, cobble, gravel, and sand. Spawning likely occurs between May and July, peaking in June.

This survey report describes the methods that Alabama Power used to assess the occurrence of Palezone Shiner in the study area.

2.0 METHODS

Alabama Power performed surveys at four locations on Little Coon Creek. Little Coon Creek flows into Big Coon Creek before entering the Tennessee River. The locations were selected based on accessibility, proximity to the Skyline Project boundary, and proximity to locations at which the Alabama Department of Environmental Management (ADEM) performs periodic water quality and biota assessments.

Table 2-1 Palezone Shiner Survey Locations

Site Number	Miles Upstream of Mouth	Description
1	1.8	County Road 53
2	7.0	County Road 566
3	8.6	County Road 567
4	10.8	County Road 54

Surveyors from Alabama Power and ADEM performed fish Index of Biotic Integrity (IBI) sampling according to methods in O'Neil and Shepard (2010). Sites were sampled by backpack electrofishing and seining and stratified over riffle, run, pool, and shoreline habitats. Ten sampling efforts were expended proportionally in each of the riffle, run, and pool habitat types and two efforts were expended along stream shorelines. All captured fish were identified to species and released.

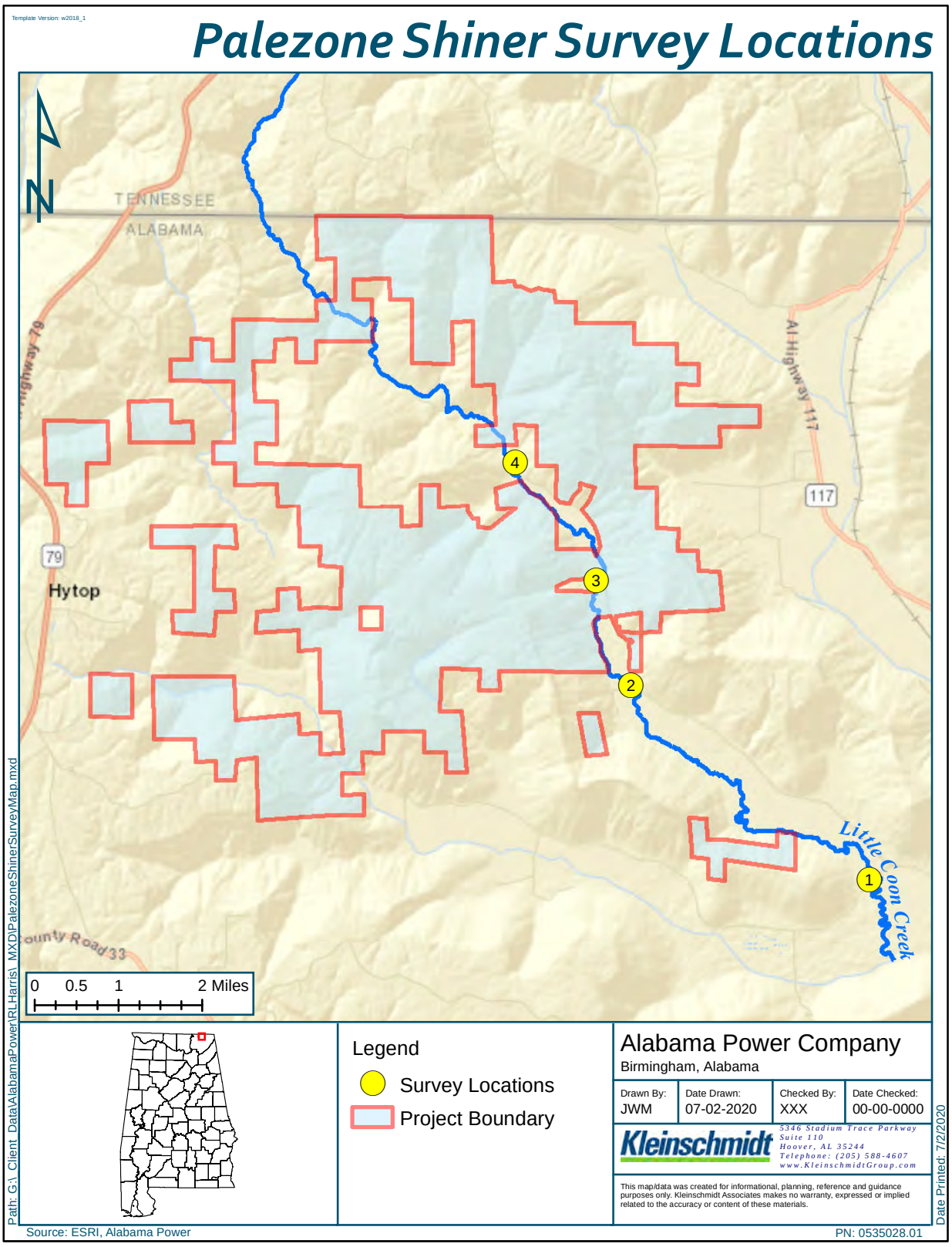


Figure 2-1 Palezone Shiner Survey Location Map

3.0 RESULTS

Surveys were conducted on June 10-11, 2020. No Palezone Shiners were collected or observed at any of the four survey sites. The following is a description of the results by site.

3.1 Site 1

Site 1, located downstream of the Skyline Management Area, has been channelized and was extremely turbid on the day of sampling. Loose, shifting, sand and silt was present across the entire channel. Sampling at this site was aborted due to extremely low catch rate and instream conditions. Furthermore, habitat is highly degraded at this site. However, Geological Survey of Alabama (GSA) does have historical sample records for this site and the Palezone Shiner has not been collected.

3.2 Site 2

Site 2 is very near the project boundary. Heavy siltation was observed throughout the sample reach at this site as well. The entire channel has been altered by severe siltation and sand deposits. A complete IBI sample, resulting in a "poor" score of 28, was performed but no Palezone Shiners were collected. A total of 15 species from seven families were collected. Banded sculpin (*Cottus carolinae*) was the most commonly encountered species. Bluegill (*Lepomis macrochirus*) was the next most commonly encountered species at this site (Table 3-1). GSA also has records of historical sampling at this site, but Palezone Shiners have not been collected. Aerial imagery of the site indicated a relatively narrow riparian area between the stream and the surrounding pasture. Field observations confirmed this and the ADEM Physical Characterization Field Data Sheet indicated that the riparian zone scored in the marginal range (Appendix A).

3.3 Site 3

Site 3 site was within the Skyline project boundary. Substrate conditions were much improved at this site, but the fish community was similar to the degraded Site 2. A total of 16 species form six families were collected. Like Site 2, banded sculpin was the most commonly collected species. Other relatively common species included Striped shiner (*Luxilus chrysocephalus*), Bluntnose minnow (*Pimephales notatus*), and bluegill. A complete fish IBI was performed, but Palezone Shiners were not collected. IBI scores for Site 3 resulted in a score of 26, putting it in the "very poor" range (Table 3-1). Like Site 2, aerial

imagery of the site indicated a relatively narrow riparian area between the stream and the surrounding pasture. Field observations confirmed this and the ADEM Physical Characterization Field Data Sheet indicated that the riparian zone scored in the sub-optimal range (Appendix A).

3.4 Site 4

Site 4 was narrow compared to downstream sample reaches and appeared to be more typical of a headwater stream. A complete IBI was not performed due to the low number of fish collected. Neither mollusks nor aquatic macroinvertebrates were observed at this site. This section of Little Coon Creek and sections upstream of this point may be intermittent, going seasonally dry in summer and/or fall.

Table 3-1 Adult Fishes Collected in Little Coon Creek

Scientific Name	Common Name	Site 2	Site 3	Totals
Campostoma oligolepis	Largescale Stoneroller	9	2	**11**
Hemitremia flammea	Flame Chub	5		**5**
Luxilus chrysocephalus	Striped Shiner	3	36	**39**
Lythrurus fasciolaris	Scarlet Shiner	1	12	**13**
Pimephales notatus	Bluntnose Minnow	4	24	**28**
Rhinichthus atratulus	Blacknose Dace	7	4	**11**
Catostomus commersoni	White Sucker		1	**1**
Moxostoma erythrurum	Golden Redhorse	1	1	**2**
Ameiurus natalis	Yellow Bullhead	1		**1**
Fundulus olivaceus	Blackspotted Topminnow	12	5	**17**
Cottus carolinae	Banded Sculpin	78	102	**180**
Lepomis auratus	Redbreast Sunfish		1	**1**
Lepomis cyanellus	Green Sunfish	2	6	**8**
Lepomis gulosus	Warmouth	1		**1**
Lepomis macrochirus	Bluegill	14	23	**37**
Lepomis microlophus	Redear Sunfish		1	**1**
Etheostoma duryi	Black Darter	2	12	**14**
Perca flavescens	Yellow Perch		1	**1**
Percina kathae	Mobile Logperch	1	3	**4**
	Total	**141**	**234**	**375**
	IBI Score	**28**	**26**	
	IBI Range	**Poor**	**Very Poor**	

Figure 3-1 View Looking Upstream at Site 2

Figure 3-2 View Looking Downstream at Site 2

Figure 3-3 View Looking Upstream at Site 3

Figure 3-4 View Looking Downstream at Site 3

Figure 3-5 View Looking Upstream at Site 4

Figure 3-6 View Looking Downstream at Site 4

4.0 SUMMARY AND CONCLUSIONS

A total of 19 species, from seven families, were collected at sites 2 and 3. Banded sculpin was by far the most commonly encountered species; followed by striped shiner, bluegill, and bluntnose minnow. Much of the stream substrate in this section of Little Coon Creek is degraded. The surrounding land use and narrow riparian buffers likely contribute to the substrate conditions. Conditions improve as you move up the watershed, but the stream becomes more typical of a headwater stream and may be seasonally dry in areas. The absence of historical records for Palezone Shiner in Little Coon Creek, substrate conditions throughout much of the stream, and the failure to detect this species during this collection effort indicate that it is unlikely that the species occurs in Little Coon Creek.

5.0 REFERENCES

Alabama Department of Conservation and Natural Resources (ADCNR). 2020. Palezone Shiner. Available at: https://www.outdooralabama.com/shiners/palezone. Accessed July 2, 2020.

O'Neil, P.E. and T.E. Shepard. 2010. Calibration of the Index of Biotic Integrity for the Tennessee Valley Ichthyoregion in Alabama. Open-File Report 1004. Geological Survey of Alabama, Tuscaloosa, Alabama.

APPENDIX A

FIELD FORMS

ADEM - FIELD OPERATIONS DIVISION

PHYSICAL CHARACTERIZATION FIELD DATA SHEET W/DATALOGGER IMPORT

Trip Name [illegible] HARRIS [illegible] MITIGATION PROJECT *Station #* LITTLE CANOE CR. @ CAVE SPRINGS RD

Visit Date 10 Jul 2020 *Visit Time* [illegible]00 *Collector Names* [illegible]/APCO CREW [illegible]B/DS/CF

Trip Comments:	
STATION VISIT COMMENTS (REACH DESCRIPTION)	(For COC Purposes: D.O =) SEVERE SILTATION IMPAIRMENT - 2020 LOGS AND CORN STALKS IN STREAM, NO RIFFLES PRESENT DUE TO LARGE SILT AND SAND DEPOSITS

ALAWADR/ BIOWADR STATION VISIT ACTIVITIES (*ACTIVITY TIMES ONLY NEEDED IF DIFFERENT FROM STATION VISIT TIME)

	Activity Time* (*24hrs*):		Replicate Time (*24hrs*):	Activity Conducted?
☑ Field Form: *Phys Char Form*		☐ *Rep 1*		☐ Activity Not Conducted
☑ Field Form: *Substrate Composition & Habitat Assessment Form*				☐ Activity Not Conducted
☐ Datalogger Import		☐ *Rep 1*		☐ Activity Not Conducted
☐ MB-I Inverts		☐ *Rep 1*		☐ Activity Not Conducted
☐ Peri Chl *a*		☐ *Rep 1*		☐ Activity Not Conducted
☑ Fish IBI		☐ *Rep 1*		☐ Activity Not Conducted

If any activity is not conducted, Why? ☐ No Flow ☐ Intermittent Pools ☐ Too Deep ☐ Too Turbid ☐ Dry Streambed ☐ Equipment Malfunctioned ☐ Inaccessible ☐ Dangerous Flow ☐ Dangerous Weather ☐ Other: Note in Comments

☑ Pictures Taken (Notes:)

RIPARIAN LANDUSE & VEGETATION

Land use at Reach (Check all): ☐ Pasture ☐ Fields ☑ Crops ☐ Residential ☐ Forest ☐ Commercial ☐ CAFO ☐ Industrial ☐ Mixed Urban ☐ silviculture

Dominant Riparian Vegetation Present Select Only One: ☑ Trees ☐ Herbaceous ☐ Shrubs ☐ Grasses

Canopy Cover: ☐ Open 0-20% ☐ Mostly Open 20-40% ☐ Est 50/50 40-60% ☑ Mostly Shaded 60-80% ☐ Shaded 80-100%

Type: ☑ Deciduous ☐ Coniferous ☐ Mixed

INSTREAM FEATURES

Stream Morphology Est.

- Reach Length 500 ft
- Stream Width 25 ft
- Bank Height: High 10 ft, Low 4 ft
- High Water Mark 10 ft

Channelized? ☑ Yes ☐ No

% of Total Reach (Must add up to 100%)

Riffle Habitat	0 %
Rootbank Habitat	5 %
Rock/log Habitat	50 %
CPOM Habitat	10 %
Sand Habitat	30 %
Macro Habitat	0 %
Unsuitable Substrates	5 %

Stream Depth: Riffle 0 ft; Run 1.00 ft; Pool 1.75 ft

Proportion of: Riffle 0 %; Run 90 %; Pool 10 %

Dam Present ☑ No ☐ Yes

Relation to Reach: ☐ Above ☐ Below ☐ Within

If Yes, Kind? ☐ Beaver ☐ Debris ☐ Low-head ☐ Mill ☐ Culvert ☐ Hydropower

Est. Gradient (Over 300ft): ☑ Low <1ft ☐ High >3ft ☐ Moderate 1-3 ft

AQUATIC VEGETATION

Total % of wetted reach with aquatic vegetation present 0 %

For species list see plant guide of common species of AL

Dominant Vegetation Type: (Select only one) ☐ Rooted Emergent ☐ Rooted Submergent ☐ Floating Algae ☐ Rooted Floating ☐ Attached Algae ☐ Free Floating

(Optional) Type	*% of Wetted Reach*	*Species*	*Type*	*% of Wetted Reach*	*Species*
Rooted Emergent	___%		Attached Algae	___%	
Rooted Floating	___%		Floating Algae	___%	
Rooted Submergent	___%		Free Floating	___%	

SEDIMENT / SUBSTRATE

Sediment Odors (Select One): ☐ None ☐ Chemical ☐ Sewage ☑ Anaerobic ☐ Petroleum ☐ Fishy

Oils (Select One): ☑ Absent ☐ Moderate ☐ Slight ☐ Profuse

Deposits (Select One): ☐ None ☐ Paper Fiber ☑ Silt ☐ Sand ☐ Gravel ☐ Sawdust ☐ Sludge ☐ Coal Fines

Looking at stones that are not deeply embedded, are the undersides black in color? ☐ Yes ☐ No ☑ N/A

WATER QUALITY INDICATORS

Water Odors (Select One): ☑ Normal/None ☐ Chemical ☐ Raw Sewage ☐ Treated Sewage ☐ Fishy ☐ Anaerobic ☐ Petroleum

Surface Oils: ☑ None ☐ Flecks ☐ Sheen ☐ Slick ☐ Globs

Water Color (Select One): ☐ Clear/No Color ☐ Grey ☐ Green ☐ Purple ☑ Brown (Mud) ☐ Red (Dye) ☐ Chalky White ☐ Blue ☐ Lt .Tannic ☐ Dk. Tannic

Biological Indicators (Select all): ☐ Mussels ☑ Fish ☑ Crayfish ☐ Snails ☐ Macroinvertebrates ☑ Fresh Beaver Sticks

Cave Spring Rd

VISIT OBSERVATIONS AND MEASUREMENTS

Was Flow Measured?	☐ Yes - ADEM: Abbrev Meter (*cfs*)	☐ No - Not wadeable (too deep)	☒ No - Not Required	☐ No - Meter Malfunctioned
	☐ Yes - USGS: Gauge (*cfs*)	☐ No - Flow conditions hazardous	☐ No - Flow not visible	☐ Data Collected but Lost or Corrupted
	☐ Yes - Facility (*mgd*)	☐ No - Visible but not measurable	☐ No - Braided/Swamp	
	USGS Gage # or Flow--Meter #:		**Flow (*cfs*) or (*mgd*):**	

Now	*Weather*	*Past 24 hrs*
☐	Clear / Cloudless	☐
☐	Partly Cloudy	☒
☐	Mostly Cloudy	☐
☐	Cloudy	☐
☐	Fog	☐
☐	Light Rain / Drizzle	☐
☐	Rain	☐
☐	Thunderstorms	☐
☐	Freezing Precipitation	☐

Flow Stage
- ☐ Flood (out of banks)
- ☐ Above Normal
- ☐ Normal
- ☐ Low

Heavy Rain in last 7 Days?
☐ Yes ☐ No

Velocity
- ☐ Swift >3 ft / Sec
- ☐ Moderate 1.5 – 3 ft / Sec
- ☐ Slow <1.5 ft / Sec

Parameter	*Value*	*Replicate*	*Unit*
Datalogger Serial#		*N/A*	#
Total Depth @ FM Pt			*ft*
Air Temp.		*N/A*	℃
Turbidity Meter #		*N/A*	#
Turbidity			*NTU*
Depth of Turbidity:	☐ Surface ☐ Mid-Depth ☐ _____ ft		

SUBSTRATE COMPOSITION & HABITAT ASSESSMENT FORM

Index To Use:
- ☒ High Gradient
- ☐ Low Gradient

Est. % Composition In Sampling Area

Type	Diameter	Percent	Stable
Bedrock		0	1/2
Hardpan Clay		0	1/2
Boulder	>10 in.	0	Yes
Cobble	2.5 - 10 in.	0	Yes
Gravel	0.1 - 2.5 in.	5	Yes
Sand	Gritty	35	
Silt		10	
Clay	Slick	5	
Detritus	Stick/Wood	35	Yes
	CPOM	10	
Muck	Fine Org.		
	Total	100%	

	Name of Collector / Riffle / Run HA	*Collector 1* Score (LB/RB)	*Collector 2* Score (LB/RB)
1	Instream Cover	12	11
2	Epifaunal surface	3	3
3	Embeddedness	5	4
4	Velocity/Depth	0	0
5	Channel Alteration	12	13
6	Sediment Deposition	5	3
7	Frequency of Riffles	2	2
8	Channel Flow Status	10	11
9	Condition of Banks	9	7
10	Bank Veg. Protection	7/7	7/7
11	Disruptive Pressure	0/0	0/0
12	Riparian Veg. zone	5/5	6/6
13	Rip Veg Zone Quality	3/3	5/5

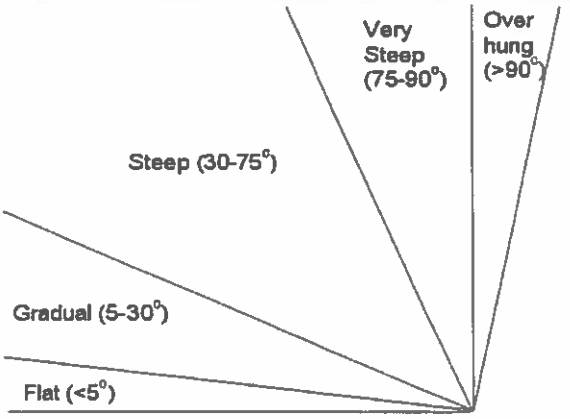
	Name of Collector / Glide / Pool HA	*Collector 1* Score (LB/RB)	*Collector 2* Score (LB/RB)
1	Instream Cover		
2	Pool Substrate Char.		
3	Pool Variability		
4	Channel Alteration		
5	Sediment Deposition		
6	Channel Sinuosity		
7	Channel Flow Status		
8	Condition of Banks		
9	Bank Veg. Protection	/	/
10	Disruptive Pressure	/	/
11	Riparian Veg. Zone	/	/
12	Rip Veg Zone Quality	/	/

Frequency of Riffles/ Bends (Distance between riffles/bends ÷ stream width)

Computer Measurement	<5	5	6	7	8	9	11	13	15	16	18	21	23	25	26	28	30	32	34	≥35

Check One for each Bank:

Left Bank Angle	☐ Flat	☐ Gradual	☐ Steep	☒ Very Steep	☐ Overhung
Right Bank Angle	☐ Flat	☐ Gradual	☐ Steep	☒ Very Steep	☐ Overhung



ADEM - FIELD OPERATIONS DIVISION

PHYSICAL CHARACTERIZATION FIELD DATA SHEET W/DATALOGGER IMPORT

Trip Name APCO HARRIS DAM RELICENSING PROJECT *Station #* LITTLE COON CREEK @ JACKSON CO HWY 9

Visit Date 11 JUN 2020 *Visit Time* 930 *Collector Names* CG/APCO CREW JB/DS/CF

Trip Comments:

STATION VISIT COMMENTS (REACH DESCRIPTION)

(For COC Purposes: D.O =) BETTER HABITAT THAN D/S. SAMPLE @ CAVE SPRING

LOW SILTATION. WORKED D/S OF BRIDGE AND FINISHED SAMPLE IN Ø RIFFLE @ BRIDGE.

ALAWADR/ BIOWADR STATION VISIT ACTIVITIES (*ACTIVITY TIMES ONLY NEEDED IF DIFFERENT FROM STATION VISIT TIME)

	Activity Time* (24hrs):		Replicate Time (24hrs):	Activity Conducted?
☒ Field Form: *Phys Char Form*		☐ *Rep 1*		☐ Activity Not Conducted
☒ Field Form: *Substrate Composition & Habitat Assessment Form*				☐ Activity Not Conducted
☐ Datalogger Import		☐ *Rep 1*		☐ Activity Not Conducted
☐ MB-I Inverts		☐ *Rep 1*		☐ Activity Not Conducted
☐ Peri Chl *a*		☐ *Rep 1*		☐ Activity Not Conducted
☒ Fish IBI		☐ *Rep 1*		☐ Activity Not Conducted

If any activity is not conducted, Why? ☐ No Flow ☐ Intermittent Pools ☐ Too Deep ☐ Too Turbid ☐ Dry Streambed ☐ Equipment Malfunctioned ☐ Inaccessible ☐ Dangerous Flow ☐ Dangerous Weather ☐ Other: Note in Comments

☒ Pictures Taken (Notes:)

RIPARIAN LANDUSE & VEGETATION

Land use at Reach (Check all): ☒ Pasture ☐ Fields ☐ CAFO ☐ Industrial ☐ Crops ☐ Residential ☐ Mixed Urban ☒ Forest ☐ Commercial ☐ silviculture

Dominant Riparian Vegetation Present Select Only One: ☒ Trees ☐ Herbaceous ☐ Shrubs ☐ Grasses

Canopy Cover: ☐ Open 0-20% ☐ Mostly Open 20-40% ☐ Est 50/50 40-60% ☒ Mostly Shaded 60-80% ☐ Shaded 80-100%

Type: ☒ Deciduous ☐ Coniferous ☐ Mixed

INSTREAM FEATURES

Stream Morphology Est.

Reach Length 1200 ft
Stream Width 35 ft
Bank Height: High 10 ft
Low 4 ft
High Water Mark 12 ft

Channelized? ☐ Yes ☒ No

% of Total Reach (Must add up to 100%)

Riffle Habitat	5 %
Rootbank Habitat	7 %
Rock/log Habitat	53 %
CPOM Habitat	10 %
Sand Habitat	20 %
Macro Habitat	3 %
Unsuitable Substrates	7 %

Stream Depth

Riffle .50 ft
Run 1.25 ft
Pool 1.75 ft

Proportion of

Riffle 5 %
Run 50 %
Pool 45 %

Dam Present ☒ No ☐ Yes

Relation to Reach: ☐ Above ☐ Below ☐ Within

Est. Gradient (Over 300ft): ☐ Low <1ft ☐ High >3ft ☒ Moderate 1-3 ft

If Yes, Kind?: ☐ Beaver ☐ Debris ☐ Low-head ☐ Mill ☐ Culvert ☐ Hydropower

AQUATIC VEGETATION

Total % of wetted reach with aquatic vegetation present 3 % — *For species list see plant guide of common species of AL*

Dominant Vegetation Type: (Select only one): ☐ Rooted Emergent ☐ Rooted Submergent ☐ Floating Algae ☒ Rooted Floating ☐ Attached Algae ☐ Free Floating

(Optional) Type	*% of Wetted Reach*	*Species*	*Type*	*% of Wetted Reach*	*Species*
Rooted Emergent	____ %		Attached Algae	____ %	
Rooted Floating	____ %		Floating Algae	____ %	
Rooted Submergent	____ %		Free Floating	____ %	

SEDIMENT / SUBSTRATE

Sediment Odors (Select One): ☒ None ☐ Chemical ☐ Sewage ☐ Anaerobic ☐ Petroleum ☐ Fishy

Oils (Select One): ☒ Absent ☐ Moderate ☐ Slight ☐ Profuse

Deposits (Select One): ☒ None ☐ Paper Fiber ☐ Silt ☐ Sand ☐ Gravel ☐ Sawdust ☐ Sludge ☐ Coal Fines

Looking at stones that are not deeply embedded, are the undersides black in color? ☐ Yes ☐ No ☒ N/A

WATER QUALITY INDICATORS

Water Odors (Select One): ☒ Normal/None ☐ Chemical ☐ Raw Sewage ☐ Treated Sewage ☐ Fishy ☐ Anaerobic ☐ Petroleum

Surface Oils: ☒ None ☐ Flecks ☐ Sheen ☐ Slick ☐ Globs

Water Color (Select One): ☒ Clear/No Color ☐ Grey ☐ Green ☐ Purple ☐ Brown (Mud) ☐ Red (Dye) ☐ Chalky White ☐ Blue ☐ Lt .Tannic ☐ Dk. Tannic

Biological Indicators (Select all): ☐ Mussels ☒ Fish ☒ Crayfish ☐ Snails ☒ Macroinvertebrates ☐ Fresh Beaver Sticks

CR 567

VISIT OBSERVATIONS AND MEASUREMENTS

Was Flow Measured?	☐ Yes - ADEM: Abbrev Meter (*cfs*)	☐ No - Not wadeable (too deep)	☒ No - Not Required	☐ No - Meter Malfunctioned
	☐ Yes - USGS: Gauge (*cfs*)	☐ No - Flow conditions hazardous	☐ No - Flow not visible	☐ Data Collected but Lost or Corrupted
	☐ Yes - Facility (*mgd*)	☐ No - Visible but not measurable	☐ No - Braided/Swamp	
	USGS Gage # or Flow--Meter #:		**Flow (*cfs*) or (*mgd*):**	

Now	*Weather*	*Past 24 hrs*
☐	Clear / Cloudless	☐
☒	Partly Cloudy	☒
☐	Mostly Cloudy	☐
☐	Cloudy	☐
☐	Fog	☐
☐	Light Rain / Drizzle	☐
☐	Rain	☐
☐	Thunderstorms	☐
☐	Freezing Precipitation	☐

Flow Stage
- ☐ Flood (out of banks)
- ☐ Above Normal
- ☒ Normal
- ☐ Low

Heavy Rain in last 7 Days?
- ☐ Yes
- ☒ No

Velocity
- ☐ Swift >3 ft / Sec
- ☐ Moderate 1.5 – 3 ft / Sec
- ☒ Slow ≤1.5 ft / Sec

Parameter	*Value*	*Replicate*	*Unit*
Datalogger Serial#		*N/A*	#
Total Depth @ FM Pt			*ft*
Air Temp.		*N/A*	℃
Turbidity Meter #		*N/A*	#
Turbidity			*NTU*
Depth of Turbidity:	☐ Surface ☐ Mid-Depth ☐ _____ ft		

SUBSTRATE COMPOSITION & HABITAT ASSESSMENT FORM

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Est. % Composition In Sampling Area

Type	Diameter	Percent	Stable
Bedrock		0	1/2
Hardpan Clay		0	1/2
Boulder	>10 in.	2	Yes
Cobble	2.5 - 10 in.	3	Yes
Gravel	0.1 - 2.5 in.	20	Yes
Sand	Gritty	30	
Silt		0	
Clay	Slick	5	
Detritus	Stick/Wood	30	Yes
	CPOM	10	
Muck	Fine Org.	0	
	Total	100%	

	Name of Collector / Riffle / Run HA	Collector 1 Score (LB/RB)	Collector 2 Score (LB/RB)
	Name of Collector	CS	JB
1	Instream Cover	17	17
2	Epifaunal surface	11	12
3	Embeddedness	16	16
4	Velocity/Depth	17	18
5	Channel Alteration	15	15
6	Sediment Deposition	16	17
7	Frequency of Riffles	8	7
8	Channel Flow Status	18	19
9	Condition of Banks	13	14
10	Bank Veg. Protection	8 / 6	9 / 7
11	Disruptive Pressure	9 / 9	9 / 9
12	Riparian Veg. zone	8 / 6	8 / 7
13	Rip Veg Zone Quality	6 / 6	7 / 7

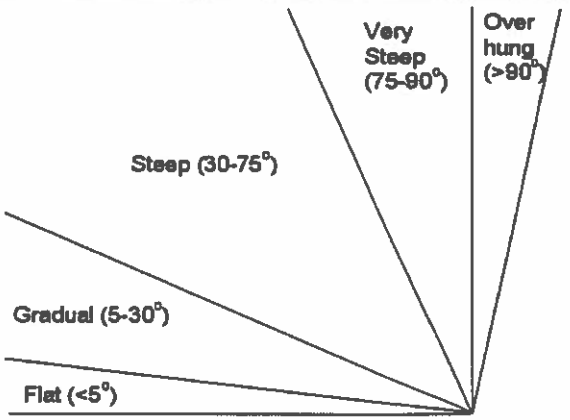
	Name of Collector / Glide / Pool HA	Collector 1 Score (LB/RB)	Collector 2 Score (LB/RB)
	Name of Collector		
1	Instream Cover		
2	Pool Substrate Char.		
3	Pool Variability		
4	Channel Alteration		
5	Sediment Deposition		
6	Channel Sinuosity		
7	Channel Flow Status		
8	Condition of Banks		
9	Bank Veg. Protection	/	/
10	Disruptive Pressure	/	/
11	Riparian Veg. Zone	/	/
12	Rip Veg Zone Quality	/	/

Frequency of Riffles/ Bends (Distance between riffles/bends ÷ stream width)

Computer Measurement	<5	5	6	7	8	9	11	13	15	16	18	21	23	25	26	28	30	32	34	≥35

Check One for each Bank:

Left Bank Angle	☐ Flat	☐ Gradual	☐ Steep	☒ Very Steep	☐ Overhung
Right Bank Angle	☐ Flat	☐ Gradual	☐ Steep	☒ Very Steep	☐ Overhung



Alabama Power

600 North 18th Street
Hydro Services 16N-8180
Birmingham, AL 35203
205 257 2251 tel
arsegars@southernco.com

July 27, 2020

VIA ELECTRONIC FILING

Project No. 2628-065
R.L. Harris Hydroelectric Project
Transmittal of the Final Downstream Release Alternatives Phase 1 Report

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

Dear Secretary Bose,

Alabama Power Company (Alabama Power) is the Federal Energy Regulatory Commission (FERC or Commission) licensee for the R.L. Harris Hydroelectric Project (Harris Project) (FERC No. 2628-065). On April 12, 2019, FERC issued its Study Plan Determination[1] (SPD) for the Harris Project, approving Alabama Power's ten relicensing studies with FERC modifications. On May 13, 2019, Alabama Power filed Final Study Plans to incorporate FERC's modifications and posted the Final Study Plans on the Harris relicensing website at www.harrisrelicensing.com.

Consistent with FERC's April 12, 2019 SPD, Alabama Power filed the Draft Downstream Release Alternatives Phase 1 Report (Draft Report) on April 10, 2020. Stakeholders were to submit their comments to Alabama Power on the Draft Report by June 11, 2020. Comments on the Draft Report were submitted by FERC staff, the Alabama Rives Alliance, Alabama Department of Conservation and Natural Resources, and the U.S. Environmental Protection Agency. These comments are included in the updated consultation record (May 2019 through July 2020) for this study (Attachment 1) and responses to these comments are provided in Attachment 2. Also included in the consultation record for this study are several stakeholder comments regarding downstream flows and downstream erosion. While these comments do not pertain specifically to the Draft Report, they have been included in the consultation record for this study because they do pertain to operations. Alabama Power is addressing downstream erosion through the Erosion/Sedimentation Study Plan and through completion of Phase 2 of this study (Downstream Release Alternatives) and Phase 2 of the Operating Curve Change Feasibility Analysis.

[1] Accession No. 20190412-3000

The major comments submitted generally suggested that Alabama Power analyze more downstream release alternatives than those specified in the study plan. As indicated in its July 10, 2020 filing, Alabama Power has agreed to analyze additional downstream releases.[2] However, due to the timing of receiving the requests to evaluate these alternatives, impacts to operational parameters, including reservoir levels, hydropower generation, flood control, navigation, and drought operations, are not included in the final Downstream Release Alternatives Phase 1 Report (Attachment 3).[3] The impacts to operational parameters from these alternatives will be included in the Phase 2 Report.

If there are any questions concerning this filing, please contact me at arsegars@southernco.com or 205-257-2251.

Sincerely,

Angie Anderegg
Harris Relicensing Project Manager

Attachment 1 – Downstream Release Alternatives Consultation Record (May 2019-July 2020)
Attachment 2 – Comments and Responses on the Draft Downstream Release Alternatives Phase 1 Report
Attachment 3 – Final Downstream Release Alternatives Phase 1 Report

cc: Harris Stakeholder List

[2] Accession No. 20200710-5122

[3] Please note that the look and format of Harris relicensing study reports has changed since submittal of the Draft Report; however, the content of the report has not changed except for the edits made based on stakeholder comments.

HAT 1 - Final Downstream Release Alternatives Phase 1 Report

APC Harris Relicensing <g2apchr@southernco.com>

Mon 7/27/2020 6:52 PM

To: APC Harris Relicensing <harrisrelicensing@southernco.com>
Bcc: damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; robert.a.allen@usace.army.mil <robert.a.allen@usace.army.mil>; lgallen@balch.com <lgallen@balch.com>; arsegars@southernco.com <arsegars@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; wtanders@southernco.com <wtanders@southernco.com>; brian.atkins@adeca.alabama.gov <brian.atkins@adeca.alabama.gov>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; jefbaker@southernco.com <jefbaker@southernco.com>; dbronson@charter.net <dbronson@charter.net>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; nancyburnes@centurylink.net <nancyburnes@centurylink.net>; richardburnes3@gmail.com <richardburnes3@gmail.com>; wmcampbell218@gmail.com <wmcampbell218@gmail.com>; jcarlee@southernco.com <jcarlee@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; kmo0025@auburn.edu <kmo0025@auburn.edu>; mcoker@southernco.com <mcoker@southernco.com>; kate.cosnahan@kleinschmidtgroup.com <kate.cosnahan@kleinschmidtgroup.com>; allan.creamer@ferc.gov <allan.creamer@ferc.gov>

HAT 1,

The Final Downstream Release Alternatives Phase 1 Report was filed with FERC today (FERC elibrary). This report can also be found on the Harris relicensing website in the HAT 1 folder.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: Anderegg, Angela Segars
Sent: Tuesday, July 28, 2020 10:10 AM
To: Donna Matthews
Cc: Sarah Salazar; cartlab@ua.edu; APC Harris Relicensing
Subject: RE: Historic Tallapoosa River Photos

Hi Donna,

We were able to download the images using the link you provided.

Thank you!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Donna Matthews <donnamatthews2014@gmail.com>
Sent: Monday, July 27, 2020 3:09 PM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>; sarah.salazar@ferc.gov; cartlab@ua.edu
Subject: Re: Historic Tallapoosa River Photos

Hello Angie,

Craig Remington from the Cartlab at the University of Alabama at Tuscaloosa will send the link to download the files. The photographs were taken at a 1/20000 scale in 1942.

The composite is image is contained on p3 of the June 11, 2020 PDF filed with FERC: 20200612-5020 (34113438).pdf for P-2628-065 to support the request for more detailed erosion study of the river downstream of the dam. The submittal # is 20200612-5020.

The link I have (but I am not sure if it will share)
is: https://alabama.app.box.com/s/wnncq7l2czjppcttezs7p9qcpw9ebeen [alabama.app.box.com]

Thank you for your interest in this approach to evaluating downstream erosion.

Sincerely,
Donna Matthews

On Mon, Jul 27, 2020 at 9:45 AM Anderegg, Angela Segars <ARSEGARS@southernco.com> wrote:

> Hi Donna,

If you can send a link, we can try to download it. If that doesn't work for some reason, we can come up with a plan b.

Thanks!

Angie Anderegg

Hydro Services

(205)257-2251

arsegars@southernco.com

From: Donna Matthews <donnamatthews2014@gmail.com>
Sent: Friday, July 24, 2020 5:18 PM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: Re: Historic Tallapoosa River Photos

Hello Angie,

Sorry to be slow in responding. How does it happen that during Corona Covid days time is flying by?

I have the 1942 scanned images in a giant folder of 540 MB stored in the cloud. Each image is geo-referenced, which I think means corrected

for curvature of the earth's surface. And I think it also means the composite huge image of the length of the river from

the dam site to Horseshoe Bend is also geo-referenced. The work was done by a professional cartographer. Each image is labelled and I think

each label is visible on the mosiac.

Analysis of the historic geo referenced images compared to recent high resolution imagery using remote sensing software may contribute additional data

to help assess erosion of the river channel below the dam.

How do you suggest I transmit so much information to you? I can provide a link or try something else.

Have a great weekend,

Donna

On Thu, Jul 23, 2020 at 10:57 AM Anderegg, Angela Segars <ARSEGARS@southernco.com> wrote:

> Hi Donna,
>
> I hope this email finds you doing well. I'm following up on the April 28, 2020 Harris Initial Study Report meeting, where you indicated that you have collected some historic photos of the Tallapoosa River banks below Harris Dam. We would like to collect the photos from you and send them to FERC for their cumulative impacts analysis on erosion downstream of the Harris Dam.
>
> Please answer a few questions below, so we can figure out how best to get the photos from you.
>
> - Are all the photos digital files?
> - Do you know how large the files are?
> - How many photos in all?
> - If there are any hard copy photos, will you need us to return them to you? Or would it be best for us to meet up so we can scan them in?
> - Are either the digital or hard copy photos labeled or sorted in a specific manner?
>
> Thank you for your help,
>
> **Angie Anderegg**
>
> Hydro Services
>
> (205)257-2251
>
> arsegars@southernco.com

HAT 3 - Aquatic Resources draft report

APC Harris Relicensing <g2apchr@southernco.com>

Tue 7/28/2020 8:55 PM

To: APC Harris Relicensing <harrisrelicensing@southernco.com>
Bcc: damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; lgallen@balch.com <lgallen@balch.com>; arsegars@southernco.com <arsegars@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; jefbaker@southernco.com <jefbaker@southernco.com>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; wmcampbell218@gmail.com <wmcampbell218@gmail.com>; jcarlee@southernco.com <jcarlee@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; kmo0025@auburn.edu <kmo0025@auburn.edu>; evan_collins@fws.gov <evan_collins@fws.gov>; kate.cosnahan@kleinschmidtgroup.com <kate.cosnahan@kleinschmidtgroup.com>; allan.creamer@ferc.gov <allan.creamer@ferc.gov>; robinwaldrep@yahoo.com <robinwaldrep@yahoo.com>; decker.chris@epa.gov <decker.chris@epa.gov>; devridr@auburn.edu <devridr@auburn.edu>; colin.dinken@kleinschmidtgroup.com <colin.dinken@kleinschmidtgroup.com>; jeff_duncan@nps.gov <jeff_duncan@nps.gov>; amanda.fleming@kleinschmidtgroup.com <amanda.fleming@kleinschmidtgroup.com>

HAT 3,

The draft Aquatic Resources report is available for your review on the Harris relicensing website in the HAT 3 folder (2020-07-28 Draft Aquatic Resources Study Report). It can also be found on FERC elibrary (Draft Report on FERC elibrary).

Please submit your comments on this draft report to Alabama Power at harrisrelicensing@southernco.com by **August 28, 2020**.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Alabama Power

600 North 18th Street
Hydro Services 16N-8180
Birmingham, AL 35203
205 257 2251 tel
arsegars@southernco.com

July 28, 2020

VIA ELECTRONIC FILING

Project No. 2628-065
R.L. Harris Hydroelectric Project
Transmittal of the Draft Aquatic Resources Report

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

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Alabama Power Company (Alabama Power) is the Federal Energy Regulatory Commission (FERC or Commission) licensee for the R.L. Harris Hydroelectric Project (Harris Project) (FERC No. 2628-065). On April 12, 2019, FERC issued its Study Plan Determination[1] (SPD) for the Harris Project, approving Alabama Power's ten relicensing studies with FERC modifications. On May 13, 2019, Alabama Power filed Final Study Plans and posted the Final Study Plans on the Harris relicensing website at www.harrisrelicensing.com. The final Aquatic Resources Study Plan required Alabama Power to complete the Draft Aquatic Resources Study Report (Draft Report) by July 2020, included as Attachment 1.

This filing also includes the stakeholder consultation for this study beginning March 2019 through July 2020 (Attachment 2). Stakeholders have until August 28, 2020 to submit their comments to Alabama Power on the Draft Report. Comments should be sent directly to harrisrelicensing@southernco.com.

Stakeholders may access this Draft Report on FERC's website (http://www.ferc.gov) and it is also available on the Project relicensing website at www.harrisrelicensing.com.

[1] Accession No 20190412-3000.

If there are any questions concerning this filing, please contact me at arsegars@southernco.com or 205-257-2251.

Sincerely,

Angie Anderegg
Harris Relicensing Project Manager

Attachment 1 – Draft Aquatic Resources Study Report
Attachment 2 – Aquatic Resources Consultation Record (March 2019-July 2020)

cc: Harris Action Team 3 Stakeholder List

APC Harris Relicensing

From: Jack West <jwest@alabamarivers.org>
Sent: Friday, July 31, 2020 8:23 AM
To: APC Harris Relicensing
Cc: Anderegg, Angela Segars
Subject: ARA Comments on Draft Aquatic Habitat Study Report
Attachments: ARA Comments on Draft Aquatic Habitat Study Report - 7.31.20.pdf

Hi Angie,

Please see attached for Alabama Rivers Alliance's comments on the Draft Aquatic Study Report. Thank you for including these comments in the FERC correspondence record.

Best,

--
Jack West, Esq.
Policy and Advocacy Director
Alabama Rivers Alliance
2014 6th Ave N, Suite 200
Birmingham, AL 35203
205-322-6395
www.alabamarivers.org [alabamarivers.org]

Celebrating more than 20 years of protecting Alabama's 132,000 miles of rivers and streams!

Alabama Rivers Alliance
Water Is Life

July 30, 2020

VIA EMAIL

Ms. Angie Anderegg
Harris Relicensing Project Manager
Alabama Power Company
600 North 18th Street
Birmingham, AL 35203

RE: Comments on Draft Downstream Aquatic Habitat Study Report for R.L. Harris Hydroelectric Project (P-2628-065)

Dear Ms. Anderegg:

Below are the preliminary comments of Alabama Rivers Alliance on the Draft Downstream Aquatic Habitat Study Report filed by Alabama Power.[1] The draft Aquatic Resources Study Report was filed earlier this week, and we will be commenting upon that study as well. Since the two studies are particularly related, we may include additional comments on the draft Aquatic Habitat study report in our comments to the Aquatic Resources study report. Thank you for including these comments in the FERC correspondence record.

I. Description of Fish Population Response to Green Plan

The Draft Downstream Aquatic Habitat Study Report describes the voluntary management efforts of the Green Plan as beneficial to the fish population below Harris: "Monitoring conducted since initiation of the Green Plan has indicated a positive fish community response due to increased shoal habitat availability." This statement mischaracterizes the monitoring results from 2005-2010 reported in Irwin et al. 2011[2] (which it cites for this proposition) and ignores the most recent published research on the topic. Instead, Licensee conflates increased habitat availability with actual fish population response.

In fact, the post-Green Plan monitoring from 2005-2010 reported by Irwin et al. 2011 and cited by Licensee in the draft study report flatly refuses to link the amount of increased habitat created by the Green Plan with fish population response:

[1] Draft Downstream Aquatic Habitat Study Report (Jun. 2020), Accession No. 20200630-5200.
[2] Elise R. Irwin et al., *Adaptive Management and Monitoring for Restoration and Faunal Recolonization of Tallapoosa River Shoal Habitats* (2011), Alabama Cooperative Fish and Wildlife Research Unit Report 2011-1.

> "Analysis of differences in hydrology that provide critical habitat for shoal dwelling species during pre- and post-management periods indicate significant increases in the amount of time quality habitat conditions were met (average gain of 30 d/season). *However, linking vital rates of fish populations to habitat variability will require more specific habitat measurement and modeling in relation to managed flow features*."[3]

Irwin et al. 2011 does report the Green Plan tentatively has been successful for the reestablishment of one species (the Alabama shiner),[4] but it details steep declines in occupancy for other species, such as the Tallapoosa sculpin, black redhorse, and blacktail redhorse.[5]

Moreover, the most recent relevant scientific literature from last year that incorporates longer-term biological monitoring also refutes Licensee's statement about positive fish response contained in the draft study report. The USGS Open-File Report 2019-1026, *Adaptive Management of Flows from R.L. Harris Dam (Tallapoosa River, Alabama)—Stakeholder Process and Use of Biological Monitoring Data for Decision Making*, assesses persistence and colonization for 38 fish species over a 12-year period.[6] In contrast to Licensee's draft report, the 2019 Open-File Report finds that quite the opposite is true—that the Green Plan has *not* resulted in a positive fish response.

Chapter B of the 2019 Open-File Report focuses on the long-term occupancy of fishes above and below Harris. It clearly states that any increase in shoal habitat provided by the Green Plan has not translated into population benefits: "Irwin and others (2011) reported an increase in shoal habitat persistence associated with the Green Plan; *however, positive population responses have not ensued*."[7] Rather, the long-term data in the 2019 Open-File Report "provide evidence that suggests broadscale negative influences of the dam on species persistence and colonization parameters. Specifically, generation frequency and cool thermal regimes negatively affected fish persistence and colonization, respectively."[8]

In assessing the relationship between aquatic habitat, fish population health, and downstream release alternatives (the Green Plan, alternative pulsing regimes, various minimum flows), Licensee, FERC, and stakeholders should not start from the misleading conclusion that the Green Plan generally benefitted fish populations downstream of Harris. This statement should be struck from the draft report and an accurate description of post-Green Plan monitoring that takes into account the most recent published scientific materials inserted in its place.

II. Use of Wetted Perimeter Metric to Gauge Aquatic Health

The Draft Downstream Aquatic Habitat Study Report uses "wetted perimeter" (the portion of the riverbed and banks in contact with the water in the channel) as a fundamental metric in comparing

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[3] *Id*. at 3 (emphasis added).
[4] *Id*. at 20-21.
[5] *Id*. at 14-15.
[6] Elise R. Irwin, *Adaptive Management of Flows from R.L. Harris Dam (Tallapoosa River, Alabama)—Stakeholder Process and Use of Biological Monitoring Data for Decision Making*, U.S. Geological Survey Open-File Report 2019-1026.
[7] *Id.* at 48 (emphasis added).
[8] *Id*.

habitat availability among release scenarios. Licensee's HEC-RAS model outputs wetted perimeter values for simulations of the different flow scenarios, the preliminary conclusions being that the Green Plan created some gains in wetted perimeter over pre-Green Plan management, and that a 150cfs continuous minimum flow would result in further increases of wetted perimeter.[9]

We caution against using wetted perimeter as a guide-star metric to measure aquatic health. Certainly, wetted perimeter and habitat duration should be evaluated and considered as part of this habitat study, but as described in the section above, over a decade of monitoring since implementation of the Green Plan has shown that an increase in quality habitat availability (made possible by increased wetted perimeter) has not led to a positive population response from fishes below the dam. Other variables, including stability of flows, thermal regime, and the availability of spawning windows must be considered along with habitat availability.

The independent science simply does not connect increased habitat availability or wetted perimeter in the Tallapoosa River below Harris with increases in colonization, persistence, or recruitment of fishes, and when managing for conservation and restoration of fish species, FERC, Licensee, and stakeholders would do well not to believe one will necessarily lead to the other. The draft report should fully acknowledge what the science reveals and seek to understand through the other studies what additional factors may be contributing to the lack of fish species recovery.

Sincerely,

Jack K. West

Jack K. West, Esq.

Alabama Rivers Alliance
Policy and Advocacy Director
2014 6th Avenue North
Suite 200
Birmingham, AL 35203

[9] Draft Downstream Aquatic Habitat Study Report (Jun. 2020), Accession No. 20200630-5200, at 24.

APC Harris Relicensing

From: Fobian, Todd <Todd.Fobian@dcnr.alabama.gov>
Sent: Friday, July 31, 2020 9:07 PM
To: APC Harris Relicensing
Cc: Anderegg, Angela Segars; Marshall, Matthew; Greene, Chris; Abernethy, Damon
Subject: ADCNR Comments Harris Project Initial Study Report (ISR) Draft Downstream Aquatic Habitat Report for the R. L. Harris Hydroelectric Project (FERC No. 2628)
Attachments: Harris Project Initial Study Report (ISR) Draft Downstream Aquatic Habitat Report_tbf_072420 _ADCNR_comments_Final.pdf

Good afternoon-

Attached please find our review comments on the Harris Project Initial Study Report (ISR) Draft Downstream Aquatic Habitat Report for the R. L. Harris Hydroelectric Project (FERC No. 2628). If you have any questions or concerns, please contact me. Thank you for the opportunity to review this report.

Todd Fobian
Environmental Affairs Supervisor
Alabama Wildlife and Freshwater Fisheries Division
64 N. Union Street, Suite 551
Montgomery, AL 36130
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Cell: 334-850-3798
Todd.Fobian@dcnr.alabama.gov

STATE OF ALABAMA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
WILDLIFE AND FRESHWATER FISHERIES DIVISION

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July 31, 2020

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

RE: Comments on the Harris Project Initial Study Report (ISR) Draft Downstream Aquatic Habitat Report for the R. L. Harris Hydroelectric Project (FERC No. 2628).

Dear Ms. Bose:

The Alabama Department of Natural Resources (ADCNR) Division of Wildlife and Freshwater Fisheries (WFF), has reviewed the Federal Energy Regulatory Commission (FERC) filed Harris Project Initial Study Report (ISR) Draft Downstream Aquatic Habitat Report in regards to the relicensing of R.L. Harris Hydroelectric Project No. 2628 and submits the following comments and recommendations for your consideration:

Draft Downstream Aquatic Habitat Report

- On page 1, section 1.1 Study Background of Draft Downstream Aquatic Habitat Report, it states "*Monitoring conducted since initiation of the Green Plan has indicated a positive fish community response due to increased shoal habitat availability (Irwin et al. 2011); however, there is little existing information characterizing the extent that the Green Plan has enhanced the aquatic habitat from Harris Dam downstream through Horseshoe Bend.*" Recent reporting of fish community monitoring indicates that fish densities in the regulated river downstream of Harris Dam have been depressed when compared to unregulated sites (Irwin *et al.* 2019).

- On page 2, section 1.1 Study Background of Draft Downstream Aquatic Habitat Report, change "*i.e.*" ("that is") should be changed to "*e.g.*" ("for example"). Details and design of a Modified Green Plan alternative are pending results and full evaluation from the Aquatic Resources Study. ADCNR is not in agreement that the alternative/modified Green Plan would only consider changing the time of day in which Green Plan pulses are released. ADCNR is in agreement that results from the Aquatic Resources Study are needed to design and recommend the alternative to be studied. Aquatic Resources Study results should be included in the footnote as a precursor to fully evaluate and recommend an alternative Green Plan to be modeled as a downstream release alternative for initial study report. ADCNR maintains its recommendation for a fourth alternative Modified Green

Plan be fully evaluated. ADCNR requests the opportunity to provide specific recommendations for the Modified Green Plan alternative after assessing the Aquatic Resources Study report.

- On page 2, section 1.1 Study Background of Draft Downstream Aquatic Habitat Report, change "*intened*" to "intended"

- On page 3, section 3.1 Mesohabitat Analysis of Draft Downstream Aquatic Habitat Report, provide the total river miles, in addition to hectares for each section (*e.g.*, Harris Dam to Malone (total river miles), Wadley to Bibby's Ferry (total river miles)

- On page 4, section 2.2 Water Level Monitoring of Draft Downstream Aquatic Habitat Report, it states "*data were lost from four level loggers (logger numbers 12, 14, 18, 20) (Figure 2-1)*" Provide a detailed explanation why data is unavailable from these four loggers (e.g. equipment malfunction or computer error). On page 6, Figure 2-1 note the four level loggers that had lost data with an asterisk and provide an explanation of the asterisks in the Figure description.

- On page 9, Figure 3-2 of Draft Downstream Aquatic Habitat Report, the image resolution is poor. If available provide higher resolution images for this data.

- On page 10, section 3.2.1 Study Period Hydrology and Climate, of Draft Downstream Aquatic Habitat Report, provide statistical analysis information documenting that significant differences occurred between the river flows in August/September 2019 and January/March 2020 compared to long-term averages.

- On page 14, Figure 3-6, of Draft Downstream Aquatic Habitat Report, provide standard deviation bars for the average daily water level.

- On page 14, of Draft Downstream Aquatic Habitat Report, provide an additional graph similar to Figure 3-6 that depicts the maximum daily water level fluctuation (Delta T) from May 2019 to April 2020. This graphic will better represent the unnatural, harsh conditions subjected to aquatic fauna daily below Harris Dam.

- On page 15, Table 3-3 Summary of Daily Water Level Fluctuations of Draft Downstream Aquatic Habitat Report, in addition to mean, minimum and maximum, provide the median (ft) for each site and standard deviation of the means.

- On page 16, Figure 3-7 of Draft Downstream Aquatic Habitat Report, provide standard deviation bars for the average hourly water level. Change the y-axis label from "*temperature*" to "water level".

- On page 17 Table 3-4 Summary of Hourly Water Level Fluctuations of Draft Downstream Aquatic Habitat Report, in addition to mean, minimum and maximum, provide the median (ft) for each site and standard deviation of the means.

- On page 18, section 3.2.4 Water Temperature of Draft Downstream Aquatic Habitat Report, temperature change data is primarily depicted in averages. It is important to remember that like dissolved oxygen declines, only one significant sudden temperature change event can stress or kill aquatic species. In addition, temperature highly influences dissolved oxygen levels in aquatic environments and significant dissolved oxygen declines and extreme temperature fluctuations can often coincide. For water temperature data, maximum and minimum values, and how long those values persist (hours) would better explain the fluctuation in temperature changes occurring in a regulated river. Providing detailed reporting of minimum and maximum values at hourly intervals

especially when water temperatures reach critical spawning ranges (15-25°C) in the spring are required to fully understand what is occurring. For example, if water temperature rise during the spring reaches a fish species thermal spawning cue but then suddenly decreases due to generation, disruption of spawning success can occur. Decreased and varied downstream water temperatures, as a result of project operations, can negatively impact downstream aquatic fauna. The impacts of water temperatures on the aquatic environment have been well-documented in peer-reviewed literature (Travnichek and Maceina 1994; Bowen *et al.* 1998; Andress 2002, Craven *et al.* 2010; Irwin *et al.* 2010; Goar 2013; Early and Sammons 2015). A component of varied downstream water temperatures downstream of regulated waterways, includes rapid sudden changes in water temperatures. These rapid changes can cause serious stress responses in some fishes in captivity and in the wild that are otherwise healthy, even leading to mortality (Jenkins et al. 2004). Limits of tolerance and ability to tolerate changes in temperature are influenced by the previous thermal histories of individual fish as well as species characteristics (Carmichael et al. 1984). Sudden temperature changes of greater magnitude, either upward or downward, are very stressful and should be avoided. The magnitude of change that aquatic species can tolerate will depend on the species, the life history stage in consideration, previous thermal history, and the initial conditions. The literature-based temperature requirement for fish information provided by the ongoing Aquatic Resources Study should provide useful details on various Tallapoosa River system fish species temperature tolerances. In addition, the comparison of temperature data in regulated and unregulated portions of the study area in the ongoing Aquatic Resources Study should provide additional insight into this topic. The Aquatic Resources Study results in conjunction with downstream flow data, water quality data and downstream habitat data from the initial study reports must be fully evaluated to assess potential impacts to the aquatic resources of the system. For these reasons it is important to provide median, minimum and maximum daily and hourly water temperature fluctuations in this section, in addition to the provided means. Median site data should be included into Tables 3-5 and 3-6. Provide Figure line plots of 15-minute water temperature data collected for each site, similar to page 29, Figure 4-2 line plots of 15-minute water temperature data collected by ADEM on the Tallapoosa River of the Draft Water Quality Study Report.

- On page 18, section 3.2.4 Water Temperature of Draft Downstream Aquatic Habitat Report, in the discussion on water temperature, explain how the temperature change range is lower at the dam, in comparison to sites 1 and 3 miles downstream. Explain what processes might cool the water moving downstream before warming them again.

- On Page 19, Figure 3-8 of Draft Downstream Aquatic Habitat Report, provide standard deviation bars for the average monthly temperature data points.

- On page 20, Figure 3-9 of Draft Downstream Aquatic Habitat Report, provide standard deviation bars for the average daily temperature fluctuation.

- On page 20, of Draft Downstream Aquatic Habitat Report, provide an additional graph similar to Figure 3-9 that depicts the maximum daily water temperature fluctuation (Delta T) from May 2019 to April 2020. This graphic will better represent the unnatural, harsh conditions subjected to aquatic fauna daily below Harris Dam.

- On page 21, Table 3-5 of Draft Downstream Aquatic Habitat Report, in addition to mean, minimum and maximum provided, provide the median (°C) for each site and standard deviation of the means.

- On page 22, Figure 3-10 of Draft Downstream Aquatic Habitat Report, provide standard deviation bars for the average hourly temperature fluctuation.

- On page 22, of Draft Downstream Aquatic Habitat Report, provide an additional graph similar to Figure 3-10 that depicts the maximum hourly water temperature fluctuation (Delta T) from May 2019 to April 2020. This graphic will better represent the unnatural, harsh conditions subjected to aquatic fauna frequently below Harris Dam.

- On page 23, Table 3-6 of Draft Downstream Aquatic Habitat Report, provide map site numbers from Figure 2-1, in addition to the included miles below Harris dam.

- On page 23, Table 3-6 of Draft Downstream Aquatic Habitat Report, in addition to mean, minimum and maximum numbers provided, provide the median (°C) for each site and standard deviation of the means.

- On page 25, section 3.3 Wetted Perimeter of Draft Downstream Aquatic Habitat Report, median is used to evaluate seasonal analysis of wetted perimeter. Provide mean wetted perimeter in addition to median.

- On page 32, section 4.0 Discussion and Conclusions of Draft Downstream Aquatic Habitat Report, it states "*Results indicate that, on average, the largest daily water level fluctuations occur in the first seven miles below Harris Dam.*" Provide the metric value you are using to separate out the first seven miles of sites from the other sites downstream to make this statement. There are average daily water level changes over 3.0 ft occurring at river mile 15 and over 2.0 ft at river mile 28.2. A metric should be selected, utilized and stated for comparisons. Ideally this metric should be a point equivalent to the historical mean or median daily water level change of the unregulated natural flow regime for that stretch of river being analyzed.

- On page 32, section 4.0 Discussion and Conclusions of Draft Downstream Aquatic Habitat Report, it states "*Results indicate that the largest daily water temperature fluctuations occur in the first seven miles below Harris Dam.*" Provide the metric value you are using to separate out the first seven miles of sites from the other sites downstream to make this statement. There are hourly water temperatures changes over 4°C occurring at river mile 19.5. A metric should be selected, utilized and stated for comparisons. Ideally this metric should be for a maximum hourly change in addition to percent of time this maximum is exceeded (See ADCNR section 3.2.4 Water Temperature comments, discuss sites with separation metric points of 2°C and 4°C maximum temperature change per hour).

- On page 32, section 4.0 Discussion and Conclusions of Draft Downstream Aquatic Habitat Report, it states "*It is also worth noting that river flows during August and September of 2019, typically the warmest months of the year, were well below normal which could have resulted in greater daily and hourly temperature fluctuations than normal*." This statement as presented does not seem accurate. Explain how a warm water unregulated river, without a dam, would decrease in temperature as it moves downstream. In many instances rainwater (runoff) in the summer will warm streams and tributaries, thus warm runoff increases temperatures in the creeks in some instances, particularly during afternoon storms when ambient air temperatures have peaked for the day. Additionally, since the Harris dam discharge is below the surface water at 30-40 feet deep, changes to the stratification of the reservoir, would be more pronounced in higher flow, than lower flow years. Reservoir stratification is affected more by higher inflows, than low inflows, especially when discharge occurs from the metalimnion or hypolimnion. Downstream temperature changes should not be significantly different if a thermocline is present, which occurs annually at Harris Reservoir, and persists into September. The statement above requires additional explanation including mechanisms that would cause greater hourly temperature fluctuations than normal during low flow. Provide a reference to a Figure in document illustrating river flows during this time period and provide a specific instance that supports this statement. Clarify whether this statement

is referring to tailrace flows or tributary inflows to the tailrace. Significant differences between large tributaries and tailrace temperatures even during atypical river flow scenarios in warmer months may be indications that the regulated reach is significantly altered compared to the natural temperature regime of the river system. Under a new FERC license agreement, R.L. Harris Hydroelectric Project will operate under various weather conditions throughout the issuance period of the license. We maintain our request that when evaluating impacts on downstream water quality (including water temperature) due to project operations, that methods to mitigate the unnatural water temperature variability be fully assessed to minimize impacts to the aquatic resources.

- On page 3, Task 2 – Water Level, Channel Profile and Discharge Data Collection and Analysis of the Downstream Aquatic Habitat Study Plan, it specifies using Acoustic Doppler Current Profilers (ADCP) to collect bed elevation and flow data. The data from the ADCP's is not mentioned in the study report. If data from these profilers will be used, include in the report. If data from these profilers will not be used, include an explanation for the deviation from the Study Plan.

Thank you for the opportunity to comment on the R.L. Harris Hydroelectric Project relicensing filed Harris Project Initial Study Report (ISR) Draft Downstream Aquatic Habitat Report. We look forward to continuing our cooperative efforts with the Federal Energy Regulatory Commission, Alabama Power, and other stakeholders during this process.

If you have any questions regarding these comments, please contact me at (334-353-7484) or Todd.Fobian@dcnr.alabama.gov.

Sincerely,

Todd Fobian

Environmental Affairs Supervisor

References:

Andress, R.O. 2002. Nest survival of Lepomis species in regulated and unregulated rivers. MS Thesis. Auburn University, Auburn, Alabama.

Bowen, Z.H., M.C. Freeman, and K.D. Bovee. 1998. Evaluation of generalized habitat criteria for assessing impacts of altered flow regimes on warmwater fishes. Transactions of the American Fisheries Society 127: 455-468.

Carmichael, G.J., Tomasso, J.R., Simco, B.A. and Davis, K.B., 1984. Characterization and alleviation of stress associated with hauling largemouth bass. Transactions of the American Fisheries Society, 113(6), pp.778-785.

Craven, S.W., J.T. Peterson, M.C. Freeman, T.J. Kwak, and E. Irwin. 2010. Modeling the relations between flow regime components, species traits and spawning success of fishes in warmwater streams. Environmental Management 46:181-194.

Earley, L.A., and S. M. Sammons. 2015. Alabama bass and redeye bass movement and habitat use in a reach of the Tallapoosa River, Alabama exposed to an altered flow regime. American Fisheries Society Symposium 82:263-280.

Goar, T.P. 2013. Effects of hydrologic variation and water temperatures on early growth and survival of selected age-0 fishes in the Tallapoosa River, Alabama. Ph.D. dissertation, Auburn University, Alabama.

Irwin, E., K.M. Kennedy, T.P. Goar, B. Martin, and M.M. Martin. 2010. Adaptive management and monitoring for restoration and faunal recolonization of Tallapoosa River shoal habitats. Final report submitted to the Alabama Department of Conservation and Natural Resources, Montgomery, Alabama.

Irwin, Elise R., Mary C. Freeman, James Peterson, Kathryn D.M. Kennedy Kristie M. Ouellette Coffman, Ely Kosnicki, Tom Hess, and M. Clint Lloyd. 2019. Adaptive Management of Flows from R.L. Harris Dam (Tallapoosa River, Alabama)—Stakeholder Process and Use of Biological Monitoring Data for Decision Making. U.S. Department of the Interior and U.S. Geological Survey.Open-File Report 2019–1026 pp.108

.Jenkins, J.A., Bart Jr, H.L., Bowker, J.D., Bowser, P.R., MacMillan, J.R., Nickum, J.G., Rachlin, J.W., Rose, J.D., Sorensen, P.W., Warkentine, B.E. and Whitledge, G.W., 2014. Guidelines for Use of Fishes in Research—Revised and Expanded, 2014. Fisheries, 39(9), pp.415-416.

Travnichek, V.H., and M.J. Maceina. 1994. Comparison of flow regulation effects on fish assemblages in shallow and deep water habitats in the Tallapoosa River, Alabama. Journal of Freshwater Ecology 9: 207-216.

Alabama Power

600 North 18th Street
Hydro Services 16N-8180
Birmingham, AL 35203
205 257 2251 tel
arsegars@southernco.com

August 4, 2020

VIA ELECTRONIC FILING

Project No. 2628-065
R.L. Harris Hydroelectric Project
Consultation Regarding Historic Photographs of the Tallapoosa River

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

Dear Secretary Bose,

Alabama Power Company (Alabama Power) is the Federal Energy Regulatory Commission (FERC) licensee for the R.L. Harris Hydroelectric Project (Harris Project) (FERC No. 2628). On April 10, 2020, Alabama Power filed the Initial Study Report (ISR) along with six Draft Study Reports and two cultural resources documents. Alabama Power held the ISR Meeting with stakeholders and FERC on April 28, 2020. On May 12, 2020, Alabama Power filed the ISR Meeting Summary. Comments on the ISR, draft reports, and ISR Meeting Summary were due on June 11, 2020.

On July 10, 2020, Alabama Power filed its response to the comments received on the ISR, draft reports, and ISR Meeting Summary.[1] In this response, Alabama Power indicated it would "facilitate obtaining copies" of obtaining various images of the Tallapoosa River pre-Harris Dam and after construction from one of the relicensing stakeholders. Attached is e-mail correspondence between Alabama Power and the stakeholder in which a hyperlink is provided for downloading the images.

[1] Accession No. 20200710-5122.

If there are any questions concerning this filing, please contact me at arsegars@southernco.com or 205-257-2251.

Sincerely,

Angie Anderegg
Harris Relicensing Project Manager

Attachment – E-mail Correspondence Regarding Historic Photographs of the Tallapoosa River

cc: Harris Action Team 2 Stakeholder List

Attachment
E-mail Correspondence Regarding Historic Photographs of the Tallapoosa River

From: Anderegg, Angela Segars
Sent: Tuesday, July 28, 2020 10:10 AM
To: Donna Matthews
Cc: Sarah Salazar; cartlab@ua.edu; APC Harris Relicensing
Subject: RE: Historic Tallapoosa River Photos

Hi Donna,

We were able to download the images using the link you provided.

Thank you!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Donna Matthews <donnamatthews2014@gmail.com>
Sent: Monday, July 27, 2020 3:09 PM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>; sarah.salazar@ferc.gov; cartlab@ua.edu
Subject: Re: Historic Tallapoosa River Photos

Hello Angie,

Craig Remington from the Cartlab at the University of Alabama at Tuscaloosa will send the link to download the files. The photographs were taken at a 1/20000 scale in 1942.

The composite is image is contained on p3 of the June 11, 2020 PDF filed with FERC: 20200612-5020 (34113438).pdf for P-2628-065 to support the request for more detailed erosion study of the river downstream of the dam. The submittal # is 20200612-5020.

The link I have (but I am not sure if it will share) is:
https://alabama.app.box.com/s/wnncq7l2czjppcttezs7p9qcpw9ebeen [alabama.app.box.com]

Thank you for your interest in this approach to evaluating downstream erosion.

Sincerely,
Donna Matthews

On Mon, Jul 27, 2020 at 9:45 AM Anderegg, Angela Segars <ARSEGARS@southernco.com> wrote:

> Hi Donna,

If you can send a link, we can try to download it. If that doesn't work for some reason, we can come up with a plan b.

Thanks!

Angie Anderegg

Hydro Services

(205)257-2251

arsegars@southernco.com

From: Donna Matthews <donnamatthews2014@gmail.com>
Sent: Friday, July 24, 2020 5:18 PM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: Re: Historic Tallapoosa River Photos

Hello Angie,

Sorry to be slow in responding. How does it happen that during Corona Covid days time is flying by?

I have the 1942 scanned images in a giant folder of 540 MB stored in the cloud. Each image is geo-referenced, which I think means corrected

for curvature of the earth's surface. And I think it also means the composite huge image of the length of the river from

the dam site to Horseshoe Bend is also geo-referenced. The work was done by a professional cartographer. Each image is labelled and I think

each label is visible on the mosiac.

Analysis of the historic geo referenced images compared to recent high resolution imagery using remote sensing software may contribute additional data

to help assess erosion of the river channel below the dam.

How do you suggest I transmit so much information to you? I can provide a link or try something else.

Have a great weekend,

Donna

On Thu, Jul 23, 2020 at 10:57 AM Anderegg, Angela Segars <ARSEGARS@southernco.com> wrote:

Hi Donna,

I hope this email finds you doing well. I'm following up on the April 28, 2020 Harris Initial Study Report meeting, where you indicated that you have collected some historic photos of the Tallapoosa River banks below Harris Dam. We would like to collect the photos from you and send them to FERC for their cumulative impacts analysis on erosion downstream of the Harris Dam.

Please answer a few questions below, so we can figure out how best to get the photos from you.

- Are all the photos digital files?
- Do you know how large the files are?
- How many photos in all?
- If there are any hard copy photos, will you need us to return them to you? Or would it be best for us to meet up so we can scan them in?
- Are either the digital or hard copy photos labeled or sorted in a specific manner?

Thank you for your help,

Angie Anderegg

Hydro Services

(205)257-2251

arsegars@southernco.com

Document Content(s)

HAT 2 - Historic Tallapoosa River Photos

APC Harris Relicensing <g2apchr@southernco.com>

Wed 8/5/2020 8:39 PM

To: APC Harris Relicensing <harrisrelicensing@southernco.com>
Bcc: damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; lgallen@balch.com <lgallen@balch.com>; arsegars@southernco.com <arsegars@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; wtanders@southernco.com <wtanders@southernco.com>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; nancyburnes@centurylink.net <nancyburnes@centurylink.net>; richardburnes3@gmail.com <richardburnes3@gmail.com>; wmcampbell218@gmail.com <wmcampbell218@gmail.com>; jcarlee@southernco.com <jcarlee@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; clark.maria@epa.gov <clark.maria@epa.gov>; kmo0025@auburn.edu <kmo0025@auburn.edu>; mcoker@southernco.com <mcoker@southernco.com>; allan.creamer@ferc.gov <allan.creamer@ferc.gov>; jec22641@aol.com <jec22641@aol.com>; robinwaldrep@yahoo.com <robinwaldrep@yahoo.com>; jessecunningham@msn.com <jessecunningham@msn.com>; decker.chris@epa.gov <decker.chris@epa.gov>; chuckdenman@hotmail.com <chuckdenman@hotmail.com>

HAT 2,

On July 10, 2020, Alabama Power filed its response to the comments received on the ISR, draft reports, and ISR Meeting Summary. In this response, Alabama Power indicated it would facilitate obtaining copies of various images of the Tallapoosa River pre-Harris Dam and after construction from one of the relicensing stakeholders. Alabama Power filed with FERC the e-mail correspondence between Alabama Power and the stakeholder in which a hyperlink is provided for downloading the images. It can be found on the Harris relicensing website in the HAT 2 folder.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: Anderegg, Angela Segars
Sent: Wednesday, August 5, 2020 12:47 PM
To: Alfred Schotz
Subject: RE: Harris relicensing - T&E Species

Thanks, Al! We'll read through your response and let you know if we have any follow up questions.

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Alfred Schotz <ars0002@auburn.edu>
Sent: Tuesday, August 4, 2020 9:34 PM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: Re: Harris relicensing - T&E Species

Dear Angela,

I apologize for the delayed reply to your message. I've been out of the office attending to family matters. I've answered the questions related to plants. As you will noticed below, I placed the question followed by my reply.

Please feel free to let me know if you have any questions regarding my feedback below.

Thanks,
Al Schotz

Are you aware of any additional survey work that might have documented the presence/absence of Pool Sprite and/or suitable habitats within the Harris Project Boundary?

I am not aware of any additional work that has documented the presence/absence of the pool sprite within the Harris Project Boundary. Suitable habitat currently exists, warranting field investigations.

Are you aware of any occurrence of White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

I am not aware of any occurrence of the white fringeless orchid within either the boundary of the Harris Project or Skyline.

Are you aware of any suitable habitat for White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Suitable habitat for the white fringeless orchid is present within both the Harris Project and Skyline boundaries. Potential habitat is likely plentiful at Skyline where the species has been documented just off the property boundary.

Can you provide the exact location of the population(s) at Skyline WMA so we can determine their proximity to the Harris Project Boundary?

Yes, we can provide the exact location of Price's potato-bean at Skyline WMA.

Have any surveys for this species been performed within the Harris Project Boundary? No

Do you believe there are areas within the Harris Project Boundary where this species may potentially occur and should be surveyed?

No, there is no suitable habitat for Price's potato-bean within the Harris Project Boundary

---

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Friday, July 24, 2020 4:09 PM
To: 'Evan Collins' <evan_collins@fws.gov>; Alfred Schotz <ars0002@auburn.edu>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>
Cc: Baker, Jeffery L. <JEFBAKER@southernco.com>; Chandler, Keith Edward <KECHANDL@SOUTHERNCO.COM>; Carlee, Jason <JCARLEE@southernco.com>; Jason Moak <jason.moak@kleinschmidtgroup.com>; APC Harris Relicensing <g2apchr@southernco.com>
Subject: Harris relicensing - T&E Species

Good afternoon,

Alabama Power Company (Alabama Power) owns and operates the R.L. Harris Project (FERC Project No. 2628) (Harris Project), licensed by the Federal Energy Regulatory Commission (FERC or Commission). Alabama Power Company (Alabama Power) is relicensing the 135- megawatt (MW) Harris Project, and the existing license expires in 2023. As part of phase one of the FERC-approved Threatened and Endangered Species Study Plan, Alabama Power conducted a desktop assessment of threatened and endangered species (**T&E Species Desktop Assessment [harrisrelicensing.com]**). The desktop assessment includes a description and maps of the project, reviews of existing information, and maps depicting known ranges and habitat.

While preparing the desktop assessment, Alabama Power determined it is unclear if some species or their suitable habitats occur within the Harris Project Boundary (maps of the Project Boundary can be found in the T&E Species Desktop Assessment – Figures 1-1 and 1-2). Based on guidance from U.S.

Fish and Wildlife Service (FWS), Alabama Power has already begun performing surveys to determine if some of these species occur within the Harris Project Boundary. Surveys were recently performed for Palezone Shiner in Little Coon Creek at Skyline. Attached is a brief report of this survey. Surveys for Fine-lined Pocketbook were performed in Fall 2019 and will be completed in Summer 2020.

Alabama Power is seeking your guidance as resource managers and experts as to whether surveys for four species or assessments of habitat suitability are advised. The following sections describe these species and the areas where Alabama Power lacks enough information. Bolded text are questions we would appreciate your assistance in answering. Due to the relatively rigid deadlines involved in the FERC relicensing process, we would appreciate your response by **August 7th**.

Red-cockaded Woodpecker (*Picoides borealis*)

This species is listed as potentially occurring in Clay and Randolph counties. This woodpecker requires open pine woodlands and savannahs with large, mature pines for nesting and roosting habitat. Mature pines, preferably longleaf pine, are required as cavity trees. The cavity trees are located in open stands with little or no hardwood mid-story and few or no over-story hardwoods. The woodpeckers require abundant native bunchgrass and groundcovers suitable for foraging within their habitat. Land use analysis indicates the Harris Project Boundary at Lake Harris contains 3,068 acres of coniferous forest; however, the data is not specific enough to determine if these forests contain the more specific habitat characteristics required by Red-cockaded Woodpecker.

Are you aware of any occurrence of Red-cockaded Woodpecker within or near the Harris Project Boundary?

Are you aware of any suitable habitat for Red-cockaded Woodpecker within or near the Harris Project Boundary?

Pool Sprite (*Amphianthus pusilis*)

Limited populations of this species are known to occur in Randolph and Chambers counties. This species is a small, ephemeral aquatic annual herb with floating and submerged leaves whose entire life cycles lasts approximately one month, typically in early spring. This species occurs in very specific habitat that is restricted to vernal pools on granite outcrops in the southeastern Piedmont. Optimal habitat has been described as a shallow, flat-bottomed pool with a rock rim. A single occurrence within the Harris Project Boundary at Flat Rock was noted in 1995. Recent surveys commissioned by Alabama Power have failed to detect the Pool Sprite at Flat Rock. The granite outcrops at Flat Rock appear to be the only potentially suitable habitat within the Harris Project Boundary.

Are you aware of any additional survey work that might have documented the presence/absence of Pool Sprite and/or suitable habitats within the Harris Project Boundary?

White Fringeless Orchid (*Platanthera integrilabia*)

This species is a slender, erect, perennial herb that grows in colonies. The orchid blooms from late July to early September with fruits maturing in October. White Fringeless Orchid typically occurs in wet, flat, or boggy areas with acidic muck or sand. This plant prefers partially shaded areas at the head of streams or seepage slopes. Two extant populations have been identified in Clay and Cleburne in Talladega National Forest. According to FWS, this species' habitat range includes portions of the Harris Project Boundary at both Skyline and Lake Harris.

Are you aware of any occurrence of White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Are you aware of any suitable habitat for White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Price's Potato Bean (*Apios priceana)*

Price's Potato Bean is a twining, herbaceous, perennial vine that grows from a tuber and has greenish-white or brownish-pink flowers. This species is found in open, bottom areas near or along the banks of streams and rivers, sometimes near the base of limestone bluffs. There are approximately 46 miles of stream bottoms with the Harris Project Boundary at Skyline. According to the most recent 5-year review (2016), there is a known population which occurs near Little Coon Creek in the Skyline WMA.

Can you provide the exact location of the population(s) at Skyline WMA so we can determine their proximity to the Harris Project Boundary?

Have any surveys for this species been performed within the Harris Project Boundary?

Do you believe there are areas within the Harris Project Boundary where this species may potentially occur and should be surveyed?

Thank you,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: Anderegg, Angela Segars
Sent: Friday, August 7, 2020 10:44 AM
To: Fobian, Todd; 'Evan Collins'; Al Schotz (ars0002@auburn.edu)
Cc: Baker, Jeffery L.; Chandler, Keith Edward; Carlee, Jason; Jason Moak; APC Harris Relicensing; Gauldin, Keith; Marshall, Matthew; Greene, Chris
Subject: RE: Harris relicensing - T&E Species

Thanks, Todd!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Fobian, Todd <Todd.Fobian@dcnr.alabama.gov>
Sent: Friday, August 7, 2020 10:13 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>; 'Evan Collins' <evan_collins@fws.gov>; Al Schotz (ars0002@auburn.edu) <ars0002@auburn.edu>
Cc: Baker, Jeffery L. <JEFBAKER@southernco.com>; Chandler, Keith Edward <KECHANDL@SOUTHERNCO.COM>; Carlee, Jason <JCARLEE@southernco.com>; Jason Moak <jason.moak@kleinschmidtgroup.com>; APC Harris Relicensing <g2apchr@southernco.com>; Gauldin, Keith <Keith.Gauldin@dcnr.alabama.gov>; Marshall, Matthew <Matthew.Marshall@dcnr.alabama.gov>; Greene, Chris <Chris.Greene@dcnr.alabama.gov>
Subject: RE: Harris relicensing - T&E Species

Good morning,

Regarding Alabama Power's resource management guidance questions as to whether surveys for four species (Red-cockaded Woodpecker (*Picoides borealis*), White Fringeless Orchid (*Platanthera integrilabia*), Price's Potato Bean (*Apios priceana*) and Price's Potato Bean (*Apios priceana*)) or assessments of habitat suitability are advised.

Are you aware of any occurrence of Red-cockaded Woodpecker within or near the Harris Project Boundary?
The Division of Wildlife and Freshwater Fisheries, Department of Conservation and Natural Resources (ADCNR) is not aware of any known occurrences of Red-cockaded Woodpeckers in the Harris Project Boundary. Federally-protected species are under the jurisdiction of the U. S. Fish and Wildlife Service (USFWS) and note that you are contacting that agency regarding potential impacts to federally-protected species.

Are you aware of any suitable habitat for Red-cockaded Woodpecker within or near the Harris Project Boundary?
The closest known locations of Red-cockaded Woodpeckers in our database are over 15 miles away, within the Talladega National Forest in Clay county. Given the proximity to known populations of Red-cockaded Woodpeckers in Talladega National Forest, any upland, mature pine stand within the Harris Boundary could have the potential for becoming suitable habitat if managed for an open understory.

ADCNR does not have any information or comments to provide regarding the additional questions.

We appreciate the opportunity to comment on this project. Please contact me if we may be of further assistance (334-353-7484).

Todd Fobian
Environmental Affairs Supervisor
Alabama Wildlife and Freshwater Fisheries Division
64 N. Union Street, Suite 551
Montgomery, AL 36130
Office: 334-353-7484
Cell: 334-850-3798
Todd.Fobian@dcnr.alabama.gov

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Friday, July 24, 2020 4:10 PM
To: 'Evan Collins' <evan_collins@fws.gov>; Al Schotz (ars0002@auburn.edu) <ars0002@auburn.edu>; Fobian, Todd <Todd.Fobian@dcnr.alabama.gov>
Cc: Jeff Baker <jefbaker@southernco.com>; Chandler, Keith Edward <KECHANDL@SOUTHERNCO.COM>; Carlee, Jason <JCARLEE@southernco.com>; Jason Moak <jason.moak@kleinschmidtgroup.com>; APC Harris Relicensing <g2apchr@southernco.com>
Subject: Harris relicensing - T&E Species

Good afternoon,

Alabama Power Company (Alabama Power) owns and operates the R.L. Harris Project (FERC Project No. 2628) (Harris Project), licensed by the Federal Energy Regulatory Commission (FERC or Commission). Alabama Power Company (Alabama Power) is relicensing the 135- megawatt (MW) Harris Project, and the existing license expires in 2023. As part of phase one of the FERC-approved Threatened and Endangered Species Study Plan, Alabama Power conducted a desktop assessment of threatened and endangered species (**T&E Species Desktop Assessment**). The desktop assessment includes a description and maps of the project, reviews of existing information, and maps depicting known ranges and habitat.

While preparing the desktop assessment, Alabama Power determined it is unclear if some species or their suitable habitats occur within the Harris Project Boundary (maps of the Project Boundary can be found in the T&E Species Desktop Assessment – Figures 1-1 and 1-2). Based on guidance from U.S. Fish and Wildlife Service (FWS), Alabama Power has already begun performing surveys to determine if some of these species occur within the Harris Project Boundary. Surveys were recently performed for Palezone Shiner in Little Coon Creek at Skyline. Attached is a brief report of this survey. Surveys for Fine-lined Pocketbook were performed in Fall 2019 and will be completed in Summer 2020.

Alabama Power is seeking your guidance as resource managers and experts as to whether surveys for four species or assessments of habitat suitability are advised. The following sections describe these species and the areas where Alabama Power lacks enough information. Bolded text are questions we

would appreciate your assistance in answering. Due to the relatively rigid deadlines involved in the FERC relicensing process, we would appreciate your response by **August 7th**.

Red-cockaded Woodpecker (*Picoides borealis*)

This species is listed as potentially occurring in Clay and Randolph counties. This woodpecker requires open pine woodlands and savannahs with large, mature pines for nesting and roosting habitat. Mature pines, preferably longleaf pine, are required as cavity trees. The cavity trees are located in open stands with little or no hardwood mid-story and few or no over-story hardwoods. The woodpeckers require abundant native bunchgrass and groundcovers suitable for foraging within their habitat. Land use analysis indicates the Harris Project Boundary at Lake Harris contains 3,068 acres of coniferous forest; however, the data is not specific enough to determine if these forests contain the more specific habitat characteristics required by Red-cockaded Woodpecker.

Are you aware of any occurrence of Red-cockaded Woodpecker within or near the Harris Project Boundary?

Are you aware of any suitable habitat for Red-cockaded Woodpecker within or near the Harris Project Boundary?

Pool Sprite (*Amphianthus pusilis*)

Limited populations of this species are known to occur in Randolph and Chambers counties. This species is a small, ephemeral aquatic annual herb with floating and submerged leaves whose entire life cycles lasts approximately one month, typically in early spring. This species occurs in very specific habitat that is restricted to vernal pools on granite outcrops in the southeastern Piedmont. Optimal habitat has been described as a shallow, flat-bottomed pool with a rock rim. A single occurrence within the Harris Project Boundary at Flat Rock was noted in 1995. Recent surveys commissioned by Alabama Power have failed to detect the Pool Sprite at Flat Rock. The granite outcrops at Flat Rock appear to be the only potentially suitable habitat within the Harris Project Boundary.

Are you aware of any additional survey work that might have documented the presence/absence of Pool Sprite and/or suitable habitats within the Harris Project Boundary?

White Fringeless Orchid (*Platanthera integrilabia*)

This species is a slender, erect, perennial herb that grows in colonies. The orchid blooms from late July to early September with fruits maturing in October. White Fringeless Orchid typically occurs in wet, flat, or boggy areas with acidic muck or sand. This plant prefers partially shaded areas at the head of streams or seepage slopes. Two extant populations have been identified in Clay and Cleburne in

Talladega National Forest. According to FWS, this species' habitat range includes portions of the Harris Project Boundary at both Skyline and Lake Harris.

Are you aware of any occurrence of White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Are you aware of any suitable habitat for White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Price's Potato Bean (*Apios priceana)*

Price's Potato Bean is a twining, herbaceous, perennial vine that grows from a tuber and has greenish-white or brownish-pink flowers. This species is found in open, bottom areas near or along the banks of streams and rivers, sometimes near the base of limestone bluffs. There are approximately 46 miles of stream bottoms with the Harris Project Boundary at Skyline. According to the most recent 5-year review (2016), there is a known population which occurs near Little Coon Creek in the Skyline WMA.

Can you provide the exact location of the population(s) at Skyline WMA so we can determine their proximity to the Harris Project Boundary?

Have any surveys for this species been performed within the Harris Project Boundary?

Do you believe there are areas within the Harris Project Boundary where this species may potentially occur and should be surveyed?

Thank you,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: Collins, Evan R <evan_collins@fws.gov>
Sent: Friday, August 7, 2020 4:57 PM
To: Anderegg, Angela Segars; Fobian, Todd; Al Schotz (ars0002@auburn.edu)
Cc: Baker, Jeffery L.; Chandler, Keith Edward; Carlee, Jason; Jason Moak; APC Harris Relicensing; Keith.Gauldin@dcnr.alabama.gov; Marshall, Matthew; Greene, Chris
Subject: Re: [EXTERNAL] RE: Harris relicensing - T&E Species

Good afternoon, Angie.

Are you aware of any occurrence of Red-cockaded Woodpecker within or near the Harris Project Boundary?
Our office has no record of Red-cockaded woodpecker within or near the Harris Project Boundary.

Are you aware of any suitable habitat for Red-cockaded Woodpecker within or near the Harris Project Boundary?
I am not aware of suitable habitat for the Red-cockaded woodpecker within the Harris Project boundary. However, I agree that any upland, mature pine stand within the Harris Boundary could have the potential for becoming suitable habitat if managed for an open understory.

Are you aware of any additional survey work that might have documented the presence/absence of Pool Sprite and/or suitable habitats within the Harris Project Boundary?
I am not aware of any additional survey work for Pool Sprite or suitable habitat within the Harris Project Boundary.

Are you aware of any occurrence of White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?
Our office as no records of the White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline.

Are you aware of any suitable habitat for White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?
I am not aware of any suitable habitat for the White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline.

Price's Potato Bean

Can you provide the exact location of the population(s) at Skyline WMA so we can determine their proximity to the Harris Project Boundary?
Our office has a record for Price's potato bean consisting of several plants within Skyline WMA along Little Coon Creek. The record is approximately located approximately 4000 ft south of the Tennessee State boundary and was reported to occur on the "west side of dirt road" (potentially CR 54). Please contact me individually to discuss whether a more specific location is necessary.

Have any surveys for this species been performed within the Harris Project Boundary?

I am not aware of any surveys for the species within the Harris Project Boundary.

Do you believe there are areas within the Harris Project Boundary where this species may potentially occur and should be surveyed?
I do not believe there are areas within the Harris Project Boundary (excluding Skyline WMA) where Price's Potato Bean may potentially occur.

--
Evan Collins
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Alabama Ecological Services Field Office
1208-B Main Street
Daphne, AL 36526
251-441-5837 (phone)
251-441-6222 (fax)
evan_collins@fws.gov

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Friday, August 7, 2020 10:43 AM
To: Fobian, Todd <Todd.Fobian@dcnr.alabama.gov>; Collins, Evan R <evan_collins@fws.gov>; Al Schotz (ars0002@auburn.edu) <ars0002@auburn.edu>
Cc: Baker, Jeffery L. <JEFBAKER@southernco.com>; Chandler, Keith Edward <KECHANDL@SOUTHERNCO.COM>; Carlee, Jason <JCARLEE@southernco.com>; Jason Moak <jason.moak@kleinschmidtgroup.com>; APC Harris Relicensing <g2apchr@southernco.com>; Keith.Gauldin@dcnr.alabama.gov <Keith.Gauldin@dcnr.alabama.gov>; Marshall, Matthew <Matthew.Marshall@dcnr.alabama.gov>; Greene, Chris <Chris.Greene@dcnr.alabama.gov>
Subject: [EXTERNAL] RE: Harris relicensing - T&E Species

Thanks, Todd!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Fobian, Todd <Todd.Fobian@dcnr.alabama.gov>
Sent: Friday, August 7, 2020 10:13 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>; 'Evan Collins' <evan_collins@fws.gov>; Al Schotz (ars0002@auburn.edu) <ars0002@auburn.edu>
Cc: Baker, Jeffery L. <JEFBAKER@southernco.com>; Chandler, Keith Edward <KECHANDL@SOUTHERNCO.COM>; Carlee,

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Subject: RE: Harris relicensing - T&E Species

EXTERNAL MAIL: Caution Opening Links or Files

Good morning,

Regarding Alabama Power's resource management guidance questions as to whether surveys for four species (Red-cockaded Woodpecker (*Picoides borealis*), White Fringeless Orchid (*Platanthera integrilabia*), Price's Potato Bean (*Apios priceana*) and Price's Potato Bean (*Apios priceana*)) or assessments of habitat suitability are advised.

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Are you aware of any suitable habitat for Red-cockaded Woodpecker within or near the Harris Project Boundary?
The closest known locations of Red-cockaded Woodpeckers in our database are over 15 miles away, within the Talladega National Forest in Clay county. Given the proximity to known populations of Red-cockaded Woodpeckers in Talladega National Forest, any upland, mature pine stand within the Harris Boundary could have the potential for becoming suitable habitat if managed for an open understory.

ADCNR does not have any information or comments to provide regarding the additional questions.

We appreciate the opportunity to comment on this project. Please contact me if we may be of further assistance (334-353-7484).

Todd Fobian
Environmental Affairs Supervisor
Alabama Wildlife and Freshwater Fisheries Division
64 N. Union Street, Suite 551
Montgomery, AL 36130
Office: 334-353-7484
Cell: 334-850-3798
Todd.Fobian@dcnr.alabama.gov

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Friday, July 24, 2020 4:10 PM
To: 'Evan Collins' <evan_collins@fws.gov>; Al Schotz (ars0002@auburn.edu) <ars0002@auburn.edu>; Fobian, Todd <Todd.Fobian@dcnr.alabama.gov>
Cc: Jeff Baker <jefbaker@southernco.com>; Chandler, Keith Edward <KECHANDL@SOUTHERNCO.COM>; Carlee, Jason <JCARLEE@southernco.com>; Jason Moak <jason.moak@kleinschmidtgroup.com>; APC Harris Relicensing <g2apchr@southernco.com>
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Alabama Power is seeking your guidance as resource managers and experts as to whether surveys for four species or assessments of habitat suitability are advised. The following sections describe these species and the areas where Alabama Power lacks enough information. Bolded text are questions we would appreciate your assistance in answering. Due to the relatively rigid deadlines involved in the FERC relicensing process, we would appreciate your response by **August 7th**.

Red-cockaded Woodpecker (*Picoides borealis*)

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Are you aware of any occurrence of Red-cockaded Woodpecker within or near the Harris Project Boundary?

Are you aware of any suitable habitat for Red-cockaded Woodpecker within or near the Harris Project Boundary?

Pool Sprite (*Amphianthus pusilis*)

Limited populations of this species are known to occur in Randolph and Chambers counties. This species is a small, ephemeral aquatic annual herb with floating and submerged leaves whose entire life cycles lasts approximately one month, typically in early spring. This species occurs in very specific habitat that is restricted to vernal pools on granite outcrops in the southeastern Piedmont. Optimal habitat has been described as a shallow, flat-bottomed pool with a rock rim. A single occurrence within the Harris Project Boundary at Flat Rock was noted in 1995. Recent surveys commissioned by Alabama Power have failed to detect the Pool Sprite at Flat Rock. The granite outcrops at Flat Rock appear to be the only potentially suitable habitat within the Harris Project Boundary.

Are you aware of any additional survey work that might have documented the presence/absence of Pool Sprite and/or suitable habitats within the Harris Project Boundary?

White Fringeless Orchid (*Platanthera integrilabia*)

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Are you aware of any occurrence of White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Are you aware of any suitable habitat for White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Price's Potato Bean *(Apios priceana)*

Price's Potato Bean is a twining, herbaceous, perennial vine that grows from a tuber and has greenish-white or brownish-pink flowers. This species is found in open, bottom areas near or along the banks of streams and rivers, sometimes near the base of limestone bluffs. There are approximately 46 miles of stream bottoms with the Harris Project Boundary at Skyline. According to the most recent 5-year review (2016), there is a known population which occurs near Little Coon Creek in the Skyline WMA.

Can you provide the exact location of the population(s) at Skyline WMA so we can determine their proximity to the Harris Project Boundary?

Have any surveys for this species been performed within the Harris Project Boundary?

Do you believe there are areas within the Harris Project Boundary where this species may potentially occur and should be surveyed?

Thank you,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426
August 10, 2020

OFFICE OF ENERGY PROJECTS

Project No. 2628-065 – Alabama
R.L. Harris Hydroelectric Project
Alabama Power Company

VIA FERC Service

Angie Anderegg
Harris Relicensing Project Manager
Alabama Power Company
600 North 18th Street
Birmingham, AL 35203

Reference: Determination on Requests for Study Modifications for the R.L. Harris Hydroelectric Project

Dear Ms. Anderegg:

Pursuant to 18 C.F.R. § 5.15 of the Commission's regulations, this letter contains the determination on requests for modifications to the approved study plan for Alabama Power Company's (Alabama Power) R.L. Harris Hydroelectric Project No. 2628 (Harris Project). The determination is based on the study criteria set forth in sections 5.9(b) and 5.15(d) and (e) of the Commission's regulations, applicable law, Commission policy and practice, and Commission staff's review of the record of information.

Background

Commission staff issued the study plan determination (SPD) for the Harris Project on April 12, 2019. Alabama Power filed an initial study report (ISR) and associated draft study reports on April 10, 2020, held an ISR meeting on April 28, 2020, and filed an ISR meeting summary on May 12, 2020. Comments on the ISR and meeting summary were filed by Commission staff on June 10, 2020, and by Alabama Department of Conservation and Natural Resources, Alabama Rivers Alliance, David Bishop, Dana Chandler, Wayne Cotney, Chuck Denman, Albert Eiland, Nelson Hay, Sharon Holland, Carol Knight, Joe Meigs, David Royster, Ronnie Siskey, Mike Smith, Michelle Waters, and John Carter Wilkins on June 11, 2020. The Alabama Department of Environmental Management, the U.S. Environmental Protection Agency (EPA), and Donna Matthews

filed comments on June 12, 2020,[1] and the National Park Service filed comments June 29, 2020. Alabama Power filed reply comments on July 10, 2020.

Comments

Some of the comments received do not specifically request modifications to the approved study plan. This determination does not address these types of comments, which include: comments on the presentation of data and results; requests for additional information; disagreements on study results; recommendations for protection, mitigation, or enhancement measures; or issues that were previously addressed in either the November 16, 2018 Scoping Document 2 or the April 12, 2019 SPD.

Study Plan Determination

Pursuant to section 5.15(d) of the Commission's regulations, any proposal to modify a required study must be accompanied by a showing of good cause, and must demonstrate that: (1) the approved study was not conducted as provided for in the approved study plan, or (2) the study was conducted under anomalous environmental conditions or that environmental conditions have changed in a material way. As specified in section 5.15(e), requests for new information gathering or studies must include a statement explaining: (1) any material change in law or regulations applicable to the information request, (2) why the goals and objectives of the approved study could not be met with the approved study methodology, (3) why the request was not made earlier, (4) significant changes in the project proposal or that significant new information material to the study objectives has become available, and (5) why the new study request satisfies the study criteria in section 5.9(b).

Alabama Power agreed with requests to modify its Water Quality Study, as discussed immediately below. As indicated in Appendix A, two additional study modifications were requested, one of which Alabama Power partially agreed to and is required with staff modifications. In addition, three new studies were requested, one of which is approved herein, with staff modifications. The bases for modifying the study plan or approving new studies are explained in Appendix B (Requested Modifications to Approved Studies). Commission staff considered all study plan criteria in section 5.9 of

[1] Alabama Department of Environmental Management (Alabama DEM) and Donna Matthews' comments were filed on June 11, 2020, just after close of Commission business at 5:00 p.m. EST. Section 385.2001(a)(2) of the Commission's regulations provide that any filing received on a regular business day after close of Commission business is considered filed on the next regular business day. Therefore, the comments by Alabama Department of Environmental Management and Donna Matthews are considered filed on the next regular business day, or June 12, 2020.

the Commission's regulations; however, only the specific study criteria particularly relevant to the study in question are referenced in Appendix B.

Water Quality Study

The draft Water Quality Study Report includes measurements of dissolved oxygen concentration and water temperature at a generation monitor located in the Harris Dam tailrace (3 years of data) and at a continuous monitor located about 0.5 mile downstream from Harris Dam (1 year of data). As requested by Alabama Rivers Alliance and other stakeholders, in its ISR reply comments,[2] Alabama Power agrees to collect additional water quality data in 2020 and 2021. Alabama Power provided a monitoring schedule for 2021 but did not do so for 2020 other than to say that monitoring began on May 4, 2020. Because the approved study plan requires Alabama Power to monitor dissolved oxygen and water temperature through October 31, the 2020 monitoring period should extend until October 31, 2020.

Threatened and Endangered Species Study

As noted in staff's comments on the ISR, the draft Threatened and Endangered (T&E) Species Study Report does not provide an assessment of T&E species populations and/or their habitats at the project, or a record of consultation with the U.S. Fish and Wildlife Service (FWS) regarding the need for field surveys for all of the species on the official T&E species list.[3] In its reply comments, Alabama Power states that existing information is insufficient to determine some of the T&E species' presence/absence and habitat suitability in the project area. Alabama Power also states that it may conduct additional field surveys[4] for T&E species and/or their potentially suitable habitat based on ongoing consultation with the FWS and Alabama Natural Heritage Program, and will provide documentation of this consultation in the Final T&E Species Report which will be filed in January 2021, per the approved study plan schedule filed on May 13, 2019.

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[2] *See* Alabama Power's July 10, 2020 Reply Comments at 2. Alabama Power indicates that the continuous monitor was installed on May 4, 2020, and the tailrace monitor was installed on June 1, 2020.

[3] *See* the official list of T&E species within the Harris Project boundaries (i.e., at Lake Harris and Skyline), accessed on July 27, 2018, by staff using the FWS's Information for Planning and Conservation website (https://ecos.fws.gov/ipac/) and filed on July 30, 2018.

[4] Alabama Power confirmed it would complete T&E species field verifications by September 2020, per the approved study plan schedule.

Requested Variances

In the ISR, Alabama Power requests variances to the approved schedules for the Draft Recreation Evaluation Study Report and the Cultural Resources Study.[5] Specifically, Alabama Power proposes to file its Draft Recreation Evaluation Study Report in August 2020, instead of June 2020, to allow time to complete two new recreation surveys, a Tallapoosa River Downstream Landowner Survey and a Tallapoosa River Recreation User Survey. Alabama Power also proposes to finalize the Area of Potential Effect (APE) for its Cultural Resources Study and file it with documentation of consultation in June 2020, which it did on June 29, 2020. No stakeholders objected to the requested variances and these changes to the approved study schedule will not affect the overall relicensing schedule. Therefore, the requested variances are approved.

Please note that nothing in this determination is intended, in any way, to limit any agency's proper exercise of its independent statutory authority to require additional studies.

If you have any questions, please contact Sarah Salazar at sarah.salazar@ferc.gov or (202) 502-6863.

Sincerely,

for
Terry L. Turpin
Director
Office of Energy Projects

Enclosures: Appendix A – Summary of determinations on requested modifications to approved studies and new study requests

[5] Alabama Power also requested a variance to the approved schedule for the Water Quality Study, proposing to submit its Clean Water Act section 401 water quality certification (certification) application to the Alabama DEM in April 2021, instead of as originally proposed in 2020. Section 5.23(b) of the Commission's regulations requires the application for certification to be submitted to the certifying agency within 60 days of issuance of the Ready for Environmental Analysis notice, which will occur post-filing. Accordingly, a variance for submitting the certification application prior to filing the license application is not needed.

Appendix B – Commission staff's recommendations on requested modifications to approved studies and new study requests

APPENDIX A

SUMMARY OF DETERMINATIONS ON REQUESTED MODIFICATIONS TO APPROVED STUDIES (see Appendix B for discussion)

Study	Recommending Entity	Approved	Approved with Modifications	Not Required
Requested Modifications to Approved Studies				
Downstream Release Alternatives Study	Commission staff, Alabama Rivers Alliance, EPA		X	
Operating Curve Change Feasibility Analysis Study and Downstream Release Alternatives Study – Climate Change Assessment	Donna Matthews			X
New Study Requests				
Battery Storage Feasibility Study	Alabama Rivers Alliance		X	
Pre-and Post-Dam Analysis of Downstream Impacts	Chuck Denman			X
Study of the Downstream River Using Historic, Pre-Dam Images Overlaid onto Current, Post-Dam Imagery	Donna Matthews			X

APPENDIX B

STAFF RECOMMENDATIONS ON REQUESTED MODIFICATIONS TO APPROVED STUDIES AND NEW STUDY REQUESTS

Downstream Release Alternatives Study

Background

Alabama Power designed and constructed the Harris Project, which began operation in 1983, as a peaking project. Prior to 2005, Alabama Power, while operating in a peaking mode, would alternately generate electricity for part of the day, and store flow in the reservoir for the rest of the day.[6] While storing flows, there would be no downstream flow releases into the Tallapoosa River other than a license required minimum release of 45 cubic feet per second (cfs), as measured at the United States Geological Survey (USGS) gage located 14 miles downstream at Wadley, Alabama.

In 2005, Alabama Power voluntarily modified project operation to provide downstream pulse flow releases ranging from 15 minutes to 4 hours in length during non-generation periods for the benefit of the aquatic community downstream (called "Green Plan").

The goal of the approved Downstream Release Alternatives Study is to evaluate the effects of the current Green Plan and the historic peaking operation, along with alternative downstream releases, on environmental and developmental resources affected by the project. Throughout the study planning and implementation process, Alabama Power has requested that stakeholders provide alternative flow releases to model as part of the study.[7]

Requested Study Modification

The approved study plan requires Alabama Power to model four downstream release scenarios, including: (1) current operation (the Green Plan); (2) the project's historic peaking operation; (3) a modified Green Plan (i.e., modifying the time of day during which the pulses are released); and (4) a downstream continuous minimum flow of 150 cfs under a historic peaking operation scenario. Based on the findings in the draft Downstream Release Alternatives Study Report, in comments on the ISR, Commission

[6] *See* Final Downstream Release Alternatives Study Report at 1.

[7] *See* Study Plan Meeting Summary in the Revised Study Plan filed on March 13, 2019; the ISR Meeting Summary filed on May 12, 2020; and Alabama Power's ISR reply comments filed on July 10, 2020.

staff, the Environmental Protection Agency (EPA), and Alabama Rivers Alliance, request that Alabama Power evaluate additional downstream release alternatives. Commission staff request that Alabama Power model continuous minimum flows of 150, 350, 600, and 800 cfs under the historic peaking, Green Plan, and modified Green Plan release scenarios. EPA requests that Alabama Power evaluate: (1) the Green Plan with minimum flows; and (2) continuous minimum flows higher than 150 cfs. Alabama River Alliance requests Alabama Power evaluate the following downstream flow alternatives:

1. a variation of the existing Green Plan where the Daily Volume Release is 100 percent of the prior day's flow at the upstream USGS Heflin stream gage (rather than the current 75 percent);
2. a hybrid Green Plan that incorporates a downstream continuous minimum flow of 150 cfs;
3. releases from the Harris Project that match flow at the downstream USGS Wadley stream gage to the USGS Heflin stream gage to mimic natural flow variability; and
4. downstream continuous minimum flows of 300 and 600 cfs.

Comments on Requested Study Modification

In Attachment B of its reply comments, Alabama Power proposes to model the following five downstream release alternative model runs, in addition to the required four initial alternative model runs, for a total of nine alternative model runs:

1. a variation to the existing Green Plan where the Daily Volume Release is 100 percent of the prior day's flow at the USGS Heflin stream gage;
2. a 150-cfs continuous minimum flow with Green Plan releases;
3. a 300-cfs continuous minimum flow with historic peaking operation;[8]
4. a 600-cfs continuous minimum flow with historic peaking; and
5. an 800-cfs continuous minimum flow with historic peaking.

Alabama Power does not propose to model Alabama Rivers Alliance's requested alternative for a release from the Harris Project that mimics the natural flow variability in the Tallapoosa River. Alabama Power states that such operation would significantly reduce or eliminate use of the project for peaking. Moreover, Alabama Power states that the project's units are not capable of adjusting, to the extent necessary, to simulate natural

[8] In the draft Downstream Release Alternatives Study Report, Alabama Power refers to the continuous minimum flow alternatives solely as minimum flows. To eliminate confusion, we recommend Alabama Power define the minimum flow alternatives, with regard to the associated operational scenario (e.g., 150-cfs continuous minimum flow with Green Plan operation).

river flows. Alabama Power also does not propose to model staff's requested range of minimum flows with the Green Plan (except 150 cfs) or modified Green Plan releases (with any flow). Alabama Power states that modeling one combination of a minimum flow (150 cfs) and Green Plan releases is adequate to determine the effect of this downstream release alternative on project resources.

Discussion and Staff Recommendation

The purpose of the Green Plan releases is to reduce the effects of peaking operation on the aquatic community, including habitat, in the Tallapoosa River downstream from Harris Dam. Monitoring conducted since initiation of the Green Plan in 2005 indicates that there has been an increase in shoal habitat availability, but the response by the fish community has been mixed (Irwin, 2019).

Alabama Rivers Alliance's request for a downstream release alternative, whereby releases from the Harris Project would mimic the Tallapoosa River's natural flow variability, which could benefit the habitat and aquatic community downstream from Harris Dam, would require a change in project operation from peaking to run-of-river. As detailed by Alabama Power in its July 10, 2020, comments,[9] the turbine-generator units at the Harris Project are designed to be operated at best gate and are not capable of adjusting to the extent necessary to simulate natural river flows (i.e., it is unable to operate in a run-of-river mode). Operating the units in this manner would lead to cavitation, which would damage the units. Therefore, operating the Harris Project to mimic the river's natural flow variability under a run-of-river mode would likely require significant redesign and redevelopment of the project (e.g., structural modifications, intake redesign, turbine retrofits, etc.). Because run-of-river operation is not feasible at the Harris Project without a major redesign and redevelopment of the project, we do not consider it to be a reasonable alternative for further consideration as part of our eventual environmental analysis. Therefore, we do not recommend modifying the study to include a release alternative that mimics natural flow variability in the Tallapoosa River.

With respect to the modified Green Plan releases requested by staff, we no longer recommend that Alabama Power model continuous minimum flows with this release strategy because, other than shifting the time of day of the releases, the release characteristics, model results, and environmental benefits would be the same as those for the continuous minimum flows and the Green Plan release strategy being modeled.

As noted above, the current license requires Alabama Power to release flows from the project such that a 45-cfs minimum flow is provided at the downstream USGS Wadley streamflow gage. Incrementally higher minimum flows (e.g., 150, 300, 600, and

[9] *See* Alabama Power's July 10, 2020 comments, Attachment B, page 2.

800 cfs) would provide additional wetted width, which could improve habitat availability between pulsing releases. Therefore, there is the potential for additional enhancement and protection that we will need to consider as part of our environmental analysis. Modeling a range of continuous minimum flows with the existing Green Plan releases would allow for an evaluation of flows that could improve downstream aquatic habitat. Therefore, in addition to the nine alternative model runs identified by Alabama Power,[10] we recommend Alabama Power model three additional continuous minimum flows with the Green Plan releases (i.e., 300, 600, and 800 cfs).[11]

Operating Curve Change Feasibility Analysis Study and Downstream Release Alternatives Study – Climate Change Assessment

Background

The approved study plan includes two operations-related modeling studies: an Operating Curve Change Feasibility Analysis Study and a Downstream Release Alternative Study. The respective objectives of these approved studies are to: (1) evaluate proposed incremental increases to the winter rule curve for Harris Lake; and (2) evaluate the effects of the historic peaking, existing Green Plan, and alternative downstream release alternatives, on environmental and developmental resources affected by the project.

Requested Study Modification

Donna Matthews requests that the Operating Curve Change Feasibility Analysis and Downstream Release Alternative Studies be modified to include additional modeling of the effect of climate change on flows and Harris Project operation. The additional modeling would use predictive data from climate change studies.

Comments on Requested Study Modification

No comments were filed on this requested study modification.

[10] *See* Alabama Power's July 10, 2020 Reply Comments at Appendix B, page 2.

[11] These flows were selected because they are consistent with those minimum flows selected by Alabama Power for their historic peaking model runs.

Discussion and Staff Recommendation

We are not aware of any available climate change model or assessment, including the climate change assessment referenced by Ms. Matthews,[12] that would support, with any degree of accuracy and reliability, a prediction of water availability at the individual project level. However, there is historical streamflow data available for the Tallapoosa River upstream of, and downstream from, the Harris Project. This data can be used to evaluate whether climate change has resulted in any changes to hydrologic inputs over time at the project. Therefore, we do not recommend modifying either the Operating Curve Change Feasibility Analysis Study or Downstream Release Alternative Study to include additional modeling using predictive data from climate change studies.

[12] Ms. Matthews references U.S. Department of Energy (2017), which was cited in EPA's March 29, 2019 comments on Alabama Power's Revised Study Plan.

STAFF RECOMMENDATIONS ON REQUESTED NEW STUDIES

Battery Energy Storage Systems (BESS) Study

Background

Harris Lake is a storage reservoir in which flows are stored to supplement inflows from April through December. The daily discharge from the project is based on a percentage of flows measured at the upstream USGS Heflin gage (i.e., the Green Plan calls for daily discharge to be at least 75 percent of flows at Heflin). Hydropower is typically generated during hours when demand for electrical power is highest (i.e., peak energy), causing significant variations in downstream flows. Daily hydropower releases from the dam vary from 0 cfs during off-peak periods to as much as 16,000 cfs, which is approximately best gate,[13] or the maximum turbine discharge.

The project has two turbine-generating units, rated at 67.5 megawatts (MW) each, which produce about 60 MW and have a hydraulic capacity of 8,000 cfs each at best gate opening. Lake elevations can vary 0.5- to 1.5-feet during a 24-hour period as a result of daily peak releases. Daily tailwater levels can vary significantly (up to 5 feet) because of peaking hydropower operations at Harris Dam, characterized by a rapid rise in downstream water levels immediately after generation is initiated, and a rapid fall in elevations as generation is ceased. Except during high flow conditions when hydropower may be generated for more extended periods of time, this peaking power generation scenario with daily fluctuating downstream flows is repeated nearly every weekday. Under the voluntary Green Plan, environmental flows are released through the turbines daily for short periods of time (i.e., 15 minutes to 4 hours).

Recommended New Study

In its comments on the ISR, Alabama Rivers Alliance requests a new study titled "Battery Storage Feasibility Study to Retain Full Peaking Capabilities While Mitigating Hydropeaking Impacts." The goal of the study is to determine whether a battery energy storage system (BESS) could be economically integrated at Harris to mitigate the impacts of peaking, while retaining full system peaking capabilities. Under such a scenario, the BESS would be used to provide power during peak demand periods, which would

[13] In its reply comments, Alabama Power notes that the best gate setting is a permanent setting on the governor system to ensure that the control system will force a fast movement of the wicket gates to the best gate position thereby minimizing the time spent in the rough zone (i.e., an area on the operating curve in which flows that are less than efficient gate cause increased vibrations in the turbine and cavitation along the low-pressure surfaces of the turbine runner).

decrease the need for peak generation flow releases and reduce flow fluctuations downstream of the project. The objectives of the study are to evaluate battery type and size configurations, costs, and ownership options, as well as technical barriers to implementing BESS. The study would also assess how much operational flexibility could be provided by BESS and allow for more control of discharges downstream of the dam.

Alabama Rivers Alliance acknowledges that BESS at hydropower projects is a new field with no established methodologies. Alabama Rivers Alliance requests a desktop analysis to evaluate the feasibility of BESS at the Harris Project, including a preliminary cost/benefit analysis. Alabama Rivers Alliance estimates the cost of this study would be $20,0000 to $30,000.

Comments on the Study Request

Alabama Power did not adopt this study because it believes the system would have a high cost and the turbines at Harris Dam are not designed to operate in a gradually loaded rate over an extended period. Rather, the turbines are peaking units designed to quickly react to electrical grid needs. Restricted ramping may be possible; however, it would require replacement of both turbine runners at a cost in addition to the cost of the batteries. Alabama Power estimates the cost of one 60 MW-1-hour storage battery unit equivalent to the power of one turbine, would be $36,000,000. A battery equivalent to the power of both turbines would be $72,000,000. There would be additional cost for any necessary modification of the project turbine-generator units. (Alabama Power did not provide an estimate for the cost of modifying/replacing the turbine runners.) Alabama Power dismisses the feasibility of a smaller MW battery. Alabama Power states that a smaller MW battery, i.e., 5 MW, would not be large enough to make up the lost power in full ramping mode. A battery smaller than the turbine's efficient gate would not allow for full ramping of that turbine.

Discussion and Staff Recommendation

We reviewed Alabama Power's cost estimate for the installation of a BESS at the Harris Project. Alabama Power's cost of the battery is based on a 2018 National Renewable Energy Report which estimates the cost of a 60 MW, 1-hour reserve battery at $601/kWh, or about $36,0000,000 to be used in place of the MWs from one turbine at Harris (DOE, 2018). This cost does not include any modifications to the turbine-generator units, which would be necessary. In addition, a battery with 4 hours reserve storage may be necessary, because the Harris Project can generate up to 4 hours in peaking mode. The 2018 National Renewable Energy Report estimates the cost of a 60 MW, 4-hour reserve battery at $380/kWh, or about $91,0000,000 to mirror the MW

from one unit at Harris. This option would also require modification of the turbine runners at additional costs.

The goal of Alabama Rivers Alliance's study is to evaluate the feasibility of a storage system which could be economically implemented at the Harris Project. Such a study would require evaluating not only the cost of installing the battery units, but also the potential benefits to both developmental and non-developmental resources. Installing a BESS at the Harris Project has the potential to mitigate project effects on water levels in Harris Lake, and fluctuations in flows released downstream during peaking operations. Potential hydrologic changes could be achieved by spreading out the releases throughout the day/night rather than releasing most of flows during peak hours. Assuming the same daily volume of flow is released, installing one 60-MW battery to provide an equivalent amount of the power provided by one turbine-generator unit could reduce daily fluctuations in Harris Lake by half. Harris Lake water levels, which currently fluctuate up to 1.5 feet daily, could be reduced to 0.75 feet daily. Downstream releases during peaking could be reduced from 16,000 cfs to 8,000 cfs, and the tailwater surface elevation could be reduced by 2.8 feet.[14] To consider the environmental benefits potentially associated with such changes in hydrologic conditions described above, the changes in releases from the project would have to be considered in the context of Alabama Power's approved Downstream Release Alternatives Study, which provides for identifying and evaluating Alternative Release scenarios.

Sections 4(e) and 10(a) of the Federal Power Act require the Commission to give equal consideration to all uses of the waterway on which a project is located. When reviewing a proposed action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project. We currently have insufficient information to evaluate the potential environmental benefits of a BESS. The cost of conducting the study, between $20,000 and $30,000, is relatively low and would provide information that does not already exist and is needed for our analysis.

Alabama Rivers Alliance's study methodology includes a description of operational flexibility associated with installing a range of battery sizes. Alabama Power did not consider a smaller battery because of the operational limits of the existing turbines. Alabama Power's analysis should not be limited to the existing turbines but should also consider the feasibility and cost of modifying or replacing a turbine necessary to support operation of a smaller battery, which may be more cost-effective and provide some environmental benefits. At minimum, the study should look at the costs and

[14] The tailwater elevation below Harris dam is 667.7 feet msl when two units are operating and 664.9 feet msl when one unit is operating, a difference of 2.8 feet.

environmental benefits of replacing one 60 MW unit, as discussed above, and at least one smaller battery and its associated changes in project releases.

Alabama Rivers Alliance's study methodology includes a survey of battery cost estimates based on public resources, future projections for battery costs, and potential incentives to offset battery cost. Alabama Power used a 2018 Department of Energy Report which provides a reasonable methodology for estimating the cost of a technology which has not been widely implemented in hydropower. The cost of batteries, however, is rapidly decreasing,[15] and future projections in the cost of a battery should be considered in the cost analysis.

In summary, we recommend that Alabama Power conduct a BESS Study, along with the Downstream Release Alternative Study. The Downstream Release Alternative Study should be amended to include at least two new release alternatives: (a) a 50 percent reduction in peak releases associated with installing one 60 MW battery unit, and (b) a proportionately smaller reduction in peak releases associated with installing a smaller MW battery unit (i.e. 5, 10 or 20 MW battery). Alabama Power should include in its cost estimates for installing a BESS any specific structural changes, any changes in turbine-generator units, and costs needed to implement each battery storage type. Finally, consistent with the Downstream Release Alternative Study Plan, Alabama Power should evaluate how each of these release alternatives (i.e., items (a) and (b) above) would affect recreation and aquatic resources in the project reservoir and downstream.

Change Analyses: Project Operation Effects on Environmental Resources in the Tallapoosa River Downstream from Harris Dam

Background

The purpose of the Erosion and Sedimentation Study relative to downstream resources is to identify problematic erosion sites and sedimentation areas on the Tallapoosa River downstream from Harris Dam as well as determine the likely causes. The plan calls for sites downstream of Harris Dam to be identified, including by stakeholders; documented by observation and video; and assessed for the location, extent, and potential causes of erosion or sedimentation. As outlined in the approved study plan, during Phase 1 of the Operating Curve Change Feasibility Analysis Study, Alabama Power modeled the effect of increasing the winter elevation of Harris Lake by 1-, 2-, 3-, and 4-feet on the ability to provide flood control and downstream releases, among other operational parameters. Information from the Erosion and Sedimentation Study will be used in Phase 2 of both the Downstream Release Alternatives Study and the Operating

[15] The National Energy Research Laboratory reports that since 2018, battery costs have been reduced by about 15 percent, with further decreases expected.

Curve Change Feasibility Analysis Study to assess the effects of potential changes in project operation on resources downstream from Harris Dam, including erosion and sedimentation in the Tallapoosa River.

Recommended New Studies

Pre-and Post-Dam Analysis of Downstream Impacts

Chuck Denman requests a new study with the goal of analyzing pre-dam and post-dam impacts on environmental resources downstream from Harris Dam, including flooding, erosion, and habitat changes to flora and fauna. Specifically, Mr. Denman requests the following information:

1. a storm runoff model comparing 25-, 50-, and 100-year 24-hour storm events.
2. use of available remote sensing materials to identify erosion by comparing the current river channel and islands' sizes and shapes with pre-dam conditions.
3. use of remote sensing to map flag grass[16] and invasive plant communities to compare changes from pre-dam conditions.
4. review available materials from local individuals in the community, as well as fish and game and other resources to determine what effect the dam has had on downstream fish species and population sizes.

Study of the Downstream River Using Historic, Pre-Dam Images Overlaid onto Current, Post-Dam Imagery

Donna Matthews states that erosion is a significant and persistent concern that is problematic for landowners, flora, and fauna in and around the Tallapoosa River downstream from Harris Dam. Ms. Matthews requests that Alabama Power use existing aerial imagery[17] and other available data to analyze changes in erosion, fisheries, and other environmental resources downstream from Harris Dam. As part of the study, Ms. Matthews requests that Alabama Power prepare a detailed geographic information system (GIS) map with existing information relating fish populations and other parameters in three dimensions (3D). The 3D GIS map would display presence/absence of species along the river length and during different decades, where data are available. Ms.

[16] Staff assumes that "flag grass" here refers to a non-native plant in the genus *Acorus*, such as *Acorus calamus*, given that the range of the native *Acorus americanus*, or "American sweetflag," is northern United States and Canada (USDA, 2020).

[17] Ms. Matthews filed an image of the Tallapoosa River in the Harris Project area from 1942 and provided a source for obtaining additional existing aerial imagery of the project area from 1950, 1954, 1964, and 1973.

Matthews states that the results could be used to evaluate the potential effects of future changes to downstream flow patterns.

Comments on the Study Requests

Alabama Power indicates that it is conducting many of the requested analyses as part of the approved study plan, including evaluations of how existing operation affects, and alternative operations may affect, erosion and sedimentation, nuisance aquatic vegetation, fisheries/aquatic resources, and water quality in the Tallapoosa River downstream from Harris Dam. Alabama Power also states that the approved Erosion and Sedimentation Study provides an adequate methodology to evaluate project-related effects on erosion and sedimentation downstream from Harris Dam. To support the Commission's cumulative effects analysis for soils and geologic resources (i.e., erosion and sedimentation), Alabama Power indicates that it intends to contact Ms. Matthews to obtain copies of the aerial images referenced in her study request and file them with the Commission.[18]

Discussion and Staff Recommendation

Mr. Denman and Ms. Matthews present their new study requests as collecting data on pre-dam conditions, which is not necessary with the context of the Commission's environmental baseline (i.e., current conditions) for evaluating project effects during a relicensing proceeding and does not relate to the eventual proposed action, which is relicensing an existing hydroelectric project.[19] The images of the project area that Ms. Matthews identifies were all taken prior to the construction and operation of the Harris Project. Analysis of these images would not be helpful in evaluating project-related erosion.

The flood analysis component of the Operating Curve Change Feasibility Analysis is intended to assess the effects of a large-scale flood, which could address some of the existing stormwater runoff and erosion issues that Mr. Denman identifies in his proposed study. The Downstream Release Alternatives Study calls for Alabama Power to model potential changes in operational flow releases. Modeling these potential operational scenarios will support an analysis of flow effects downstream of Harris Dam under a range of scenarios more effectively than additional modeling of smaller floods. The 100-year flood serves as a representative large flood for risk assessment and planning purposes. Therefore, modeling the 100-year flood scenario is sufficient.

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[18] *See* Alabama Power August 4, 2020 Memo.

[19] *Am. Rivers v. FERC*, 187 F.3d 1007, *amended by and denying reh'g*, 201 F.3d 1186 (9th Cir. 1999); *Conservation Law Found. v. FERC*, 216 F.3d 41 (D. C. Cir. 2000).

The data collected as part of the approved studies, including the Downstream Release Alternatives Study, Erosion and Sedimentation Study, Aquatic Resource Study, and Downstream Aquatic Habitat Study, include much of the information that Mr. Denman and Ms. Matthews request with regard to current conditions. The results of Phase 2 of the Downstream Release Alternatives Study that is being conducted currently (during the second study season, April 2020 through April 2021) will also provide information responsive to most of Mr. Denman and Ms. Mathews' requests. The information gained through the approved studies should be adequate to assess the effects of project operation on downstream resources, including erosion and sedimentation and related invasive species effects, fisheries, water quality and use, terrestrial resources, recreation, and cultural resources. Therefore, we do not recommend that Alabama Power conduct Mr. Denman's or Ms. Matthews' requested new studies.

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Document Content(s)

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426
August 11, 2020

OFFICE OF ENERGY PROJECTS

Project No. 2628-065 – Alabama
R.L. Harris Hydroelectric Project
Alabama Power Company

VIA FERC Service

Angie Anderegg, Relicensing Project Manager
Alabama Power Company
600 North 18th Street
Birmingham, AL 35203

Reference: Determination of Area of Potential Effects

Dear Ms. Anderegg:

On June 29, 2020, Alabama Power filed documentation that it had completed consultation on the R.L. Harris Project's Area of Potential Effects (APE) with the Alabama State Historic Preservation Officer along with a written description and maps of the APE. The Commission's April 2019 Study Plan Determination required that Alabama Power complete these steps prior to conducting fieldwork.

Commission staff find that Alabama Power's proposed APE is appropriate. For the purposes of section 106 consultation, the APE should be defined as "(a) lands enclosed by the Harris Project boundary, and (b) lands or properties which may be outside the Harris Project boundary, where authorized project uses may cause changes in the character or use of the historic properties, if historic properties exist."

If you have any questions, please contact Rachel McNamara at rachel.mcnamara@ferc.gov, or (202) 502-8340.

Sincerely,

Stephen Bowler
Chief, South Branch
Division of Hydropower Licensing

Document Content(s)

Determination on Study Modifications

APC Harris Relicensing <g2apchr@southernco.com>

Wed 8/12/2020 8:45 PM

To: APC Harris Relicensing <harrisrelicensing@southernco.com>
Bcc: 1942jthompson420@gmail.com <1942jthompson420@gmail.com>; 9sling@charter.net <9sling@charter.net>; allan.creamer@ferc.gov <allan.creamer@ferc.gov>; alpeeple@southernco.com <alpeeple@southernco.com>; amanda.fleming@kleinschmidtgroup.com <amanda.fleming@kleinschmidtgroup.com>; amanda.mcbride@ahc.alabama.gov <amanda.mcbride@ahc.alabama.gov>; amccartn@blm.gov <amccartn@blm.gov>; ammcvica@southernco.com <ammcvica@southernco.com>; amy.silvano@dcnr.alabama.gov <amy.silvano@dcnr.alabama.gov>; andrew.nix@dcnr.alabama.gov <andrew.nix@dcnr.alabama.gov>; arsegars@southernco.com <arsegars@southernco.com>; athall@fujifilm.com <athall@fujifilm.com>; aubie84@yahoo.com <aubie84@yahoo.com>; awhorton@corblu.com <awhorton@corblu.com>; bart_roby@msn.com <bart_roby@msn.com>; baxterchip@yahoo.com <baxterchip@yahoo.com>; bboozer6@gmail.com <bboozer6@gmail.com>; bdavis081942@gmail.com <bdavis081942@gmail.com>; beckyrainwater1@yahoo.com <beckyrainwater1@yahoo.com>; bill_pearson@fws.gov <bill_pearson@fws.gov>; blacklake20@gmail.com <blacklake20@gmail.com>; blm_es_inquiries@blm.gov <blm_es_inquiries@blm.gov>; bob.stone@smimail.net <bob.stone@smimail.net>; bradandsue795@gmail.com <bradandsue795@gmail.com>; bradfordt71@gmail.com <bradfordt71@gmail.com>; brian.atkins@adeca.alabama.gov <brian.atkins@adeca.alabama.gov>; bruce.bradford@forestry.alabama.gov <bruce.bradford@forestry.alabama.gov>; bsmith0253@gmail.com <bsmith0253@gmail.com>; butchjackson60@gmail.com <butchjackson60@gmail.com>; bwhaley@randolphcountyeda.com <bwhaley@randolphcountyeda.com>; carolbuggknight@hotmail.com <carolbuggknight@hotmail.com>; celestine.bryant@actribe.org <celestine.bryant@actribe.org>; cengstrom@centurytel.net <cengstrom@centurytel.net>; ceo@jcchamber.com <ceo@jcchamber.com>; cggoodma@southernco.com <cggoodma@southernco.com>; cgnav@uscg.mil <cgnav@uscg.mil>; chad@cleburnecountychamber.com <chad@cleburnecountychamber.com>; chandlermary937@gmail.com <chandlermary937@gmail.com>; chiefknight2002@yahoo.com <chiefknight2002@yahoo.com>; chimneycove@gmail.com <chimneycove@gmail.com>; chris.goodell@kleinschmidtgroup.com <chris.goodell@kleinschmidtgroup.com>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; chris.smith@dcnr.alabama.gov <chris.smith@dcnr.alabama.gov>; chris@alaudubon.org <chris@alaudubon.org>; chuckdenman@hotmail.com <chuckdenman@hotmail.com>; clark.maria@epa.gov <clark.maria@epa.gov>; claychamber@gmail.com <claychamber@gmail.com>; clint.lloyd@auburn.edu <clint.lloyd@auburn.edu>; cljohnson@adem.alabama.gov <cljohnson@adem.alabama.gov>; clowry@alabamarivers.org <clowry@alabamarivers.org>; cmnix@southernco.com <cmnix@southernco.com>; coetim@aol.com <coetim@aol.com>; colin.dinken@kleinschmidtgroup.com <colin.dinken@kleinschmidtgroup.com>; cooper.jamal@epa.gov <cooper.jamal@epa.gov>; coty.brown@alea.gov <coty.brown@alea.gov>; craig.litteken@usace.army.mil <craig.litteken@usace.army.mil>; crystal.davis@adeca.alabama.gov <crystal.davis@adeca.alabama.gov>; crystal.lakewedoweedocks@gmail.com <crystal.lakewedoweedocks@gmail.com>; crystal@hunterbend.com <crystal@hunterbend.com>; dalerose120@yahoo.com <dalerose120@yahoo.com>; damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; dbronson@charter.net <dbronson@charter.net>; dcnr.wffdirector@dcnr.alabama.gov <dcnr.wffdirector@dcnr.alabama.gov>; decker.chris@epa.gov <decker.chris@epa.gov>; devridr@auburn.edu <devridr@auburn.edu>; dfarr@randolphcountyalabama.gov <dfarr@randolphcountyalabama.gov>; dhayba@usgs.gov <dhayba@usgs.gov>; djmoore@adem.alabama.gov <djmoore@adem.alabama.gov>; dkanders@southernco.com <dkanders@southernco.com>; dolmoore@southernco.com <dolmoore@southernco.com>; donnamat@aol.com <donnamat@aol.com>; doug.deaton@dcnr.alabama.gov <doug.deaton@dcnr.alabama.gov>; dpreston@southernco.com <dpreston@southernco.com>; drheinzen@charter.net <drheinzen@charter.net>; ebt.drt@numail.org <ebt.drt@numail.org>; Eddie Plemons <eddieplemons@charter.net>; eilandfarm@aol.com <eilandfarm@aol.com>; el.brannon@yahoo.com <el.brannon@yahoo.com>; elizabeth-toombs@cherokee.org <elizabeth-toombs@cherokee.org>; emathews@aces.edu <emathews@aces.edu>; eric.sipes@ahc.alabama.gov <eric.sipes@ahc.alabama.gov>; evan.lawrence@dcnr.alabama.gov <evan.lawrence@dcnr.alabama.gov>; evan_collins@fws.gov <evan_collins@fws.gov>; eveham75@gmail.com <eveham75@gmail.com>;

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Harris relicensing stakeholders,

Yesterday FERC issue a determination on study modifications for the Harris Project. It can be found on FERC elibrary and on the Harris relicensing website (www.harrisrelicensing.com) in the Relicensing Documents folder.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: David Smith <inspector_003@yahoo.com>
Sent: Wednesday, August 12, 2020 4:24 PM
To: APC Harris Relicensing
Subject: Re: Determination on Study Modifications

Thank you.

Sent from Yahoo Mail for iPhone [overview.mail.yahoo.com]

On Wednesday, August 12, 2020, 3:50 PM, APC Harris Relicensing <g2apchr@southernco.com> wrote:

> Harris relicensing stakeholders,
>
> Yesterday FERC issue a determination on study modifications for the Harris Project. It can be found on FERC elibrary and on the Harris relicensing website (www.harrisrelicensing.com [harrisrelicensing.com]) in the Relicensing Documents folder.
>
> Thanks,
>
> **Angie Anderegg**
>
> Hydro Services
>
> (205)257-2251
>
> arsegars@southernco.com

APC Harris Relicensing

From: Anderegg, Angela Segars
Sent: Monday, August 17, 2020 8:35 AM
To: Alfred Schotz
Cc: 'Evan Collins'; todd.fobian@dcnr.alabama.gov; Baker, Jeffery L.; Chandler, Keith Edward; Carlee, Jason; Jason Moak
Subject: RE: Harris relicensing - T&E Species

This information is very helpful. Thanks, Al!

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Alfred Schotz <ars0002@auburn.edu>
Sent: Saturday, August 15, 2020 10:13 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: Re: Harris relicensing - T&E Species

Hi Angie,

I'll be happy to provide additional feedback. I'll answer the questions in the order they're presented in your email.

1. Pool Sprite: The only suitable habitat for the species is at Flat Rock Park, which appears to be in the Harris Project Area. The plant prefers shallow depressions on the granite outcrops.
2. White Fringeless Orchid: Suitable habitat for the species at Skyline would be saturated soils associated with small drainages on the uppermost slopes and summits of the Appalachian Plateau. For the Harris Project, suitable habitat will be saturated soils along streams on mid and lower slopes. That's correct, the plants are in flower now, with a few weeks remaining.
3. Price's Potato-Bean: I'm not aware of any concerted surveys for the species at Skyline. Plenty of suitable habitat exists.

I hope this information is helpful. Please feel free to let me know if I can help further.

Best regards,
Al Schotz

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Monday, August 10, 2020 11:15 AM
To: Alfred Schotz <ars0002@auburn.edu>
Cc: 'Evan Collins' <evan_collins@fws.gov>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; Baker,

Jeffery L. <JEFBAKER@southernco.com>; Chandler, Keith Edward <KECHANDL@SOUTHERNCO.COM>; Carlee, Jason <JCARLEE@southernco.com>; Jason Moak <jason.moak@kleinschmidtgroup.com>
Subject: RE: Harris relicensing - T&E Species

Hi Al,

Thank you for your helpful responses to our request for information and guidance relative to Threatened and Endangered species study for the R.L. Harris Project. We do have a few follow up questions that we hope you can help us with.

1. Pool Sprite – could you provide approximate locations of potentially suitable habitat at Harris where surveys are warranted?
2. White Fringeless Orchid – Could you suggest a way to refine wetland inventory maps to narrow down the number of areas that should be surveyed? As you are likely aware, this species is currently or will soon be in bloom, making in an ideal time for surveys if they are warranted.
3. Price's Potato Bean – other than the known population, have any surveys been conducted for this species at Skyline, and if so, where and when were those surveys conducted?

Thanks in advance for your assistance.

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Alfred Schotz <ars0002@auburn.edu>
Sent: Tuesday, August 4, 2020 9:34 PM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: Re: Harris relicensing - T&E Species

Dear Angela,

I apologize for the delayed reply to your message. I've been out of the office attending to family matters. I've answered the questions related to plants. As you will noticed below, I placed the question followed by my reply.

Please feel free to let me know if you have any questions regarding my feedback below.

Thanks,
Al Schotz

Are you aware of any additional survey work that might have documented the presence/absence of Pool Sprite and/or suitable habitats within the Harris Project Boundary?

I am not aware of any additional work that has documented the presence/absence of the pool sprite within the Harris Project Boundary. Suitable habitat currently exists, warranting field investigations.

Are you aware of any occurrence of White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

I am not aware of any occurrence of the white fringeless orchid within either the boundary of the Harris Project or Skyline.

Are you aware of any suitable habitat for White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Suitable habitat for the white fringeless orchid is present within both the Harris Project and Skyline boundaries. Potential habitat is likely plentiful at Skyline where the species has been documented just off the property boundary.

Can you provide the exact location of the population(s) at Skyline WMA so we can determine their proximity to the Harris Project Boundary?

Yes, we can provide the exact location of Price's potato-bean at Skyline WMA.

Have any surveys for this species been performed within the Harris Project Boundary? No

Do you believe there are areas within the Harris Project Boundary where this species may potentially occur and should be surveyed?

No, there is no suitable habitat for Price's potato-bean within the Harris Project Boundary

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From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Friday, July 24, 2020 4:09 PM
To: 'Evan Collins' <evan_collins@fws.gov>; Alfred Schotz <ars0002@auburn.edu>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>
Cc: Baker, Jeffery L. <JEFBAKER@southernco.com>; Chandler, Keith Edward <KECHANDL@SOUTHERNCO.COM>; Carlee, Jason <JCARLEE@southernco.com>; Jason Moak <jason.moak@kleinschmidtgroup.com>; APC Harris Relicensing <g2apchr@southernco.com>
Subject: Harris relicensing - T&E Species

Good afternoon,

Alabama Power Company (Alabama Power) owns and operates the R.L. Harris Project (FERC Project No. 2628) (Harris Project), licensed by the Federal Energy Regulatory Commission (FERC or Commission). Alabama Power Company (Alabama Power) is relicensing the 135- megawatt (MW) Harris Project, and the existing license expires in 2023. As part of phase one of the FERC-approved Threatened and Endangered Species Study Plan, Alabama Power conducted a desktop assessment of

threatened and endangered species (**T&E Species Desktop Assessment [harrisrelicensing.com]**). The desktop assessment includes a description and maps of the project, reviews of existing information, and maps depicting known ranges and habitat.

While preparing the desktop assessment, Alabama Power determined it is unclear if some species or their suitable habitats occur within the Harris Project Boundary (maps of the Project Boundary can be found in the T&E Species Desktop Assessment – Figures 1-1 and 1-2). Based on guidance from U.S. Fish and Wildlife Service (FWS), Alabama Power has already begun performing surveys to determine if some of these species occur within the Harris Project Boundary. Surveys were recently performed for Palezone Shiner in Little Coon Creek at Skyline. Attached is a brief report of this survey. Surveys for Fine-lined Pocketbook were performed in Fall 2019 and will be completed in Summer 2020.

Alabama Power is seeking your guidance as resource managers and experts as to whether surveys for four species or assessments of habitat suitability are advised. The following sections describe these species and the areas where Alabama Power lacks enough information. Bolded text are questions we would appreciate your assistance in answering. Due to the relatively rigid deadlines involved in the FERC relicensing process, we would appreciate your response by **August 7th**.

Red-cockaded Woodpecker (*Picoides borealis*)

This species is listed as potentially occurring in Clay and Randolph counties. This woodpecker requires open pine woodlands and savannahs with large, mature pines for nesting and roosting habitat. Mature pines, preferably longleaf pine, are required as cavity trees. The cavity trees are located in open stands with little or no hardwood mid-story and few or no over-story hardwoods. The woodpeckers require abundant native bunchgrass and groundcovers suitable for foraging within their habitat. Land use analysis indicates the Harris Project Boundary at Lake Harris contains 3,068 acres of coniferous forest; however, the data is not specific enough to determine if these forests contain the more specific habitat characteristics required by Red-cockaded Woodpecker.

Are you aware of any occurrence of Red-cockaded Woodpecker within or near the Harris Project Boundary?

Are you aware of any suitable habitat for Red-cockaded Woodpecker within or near the Harris Project Boundary?

Pool Sprite (*Amphianthus pusilis*)

Limited populations of this species are known to occur in Randolph and Chambers counties. This species is a small, ephemeral aquatic annual herb with floating and submerged leaves whose entire life cycles lasts approximately one month, typically in early spring. This species occurs in very specific

habitat that is restricted to vernal pools on granite outcrops in the southeastern Piedmont. Optimal habitat has been described as a shallow, flat-bottomed pool with a rock rim. A single occurrence within the Harris Project Boundary at Flat Rock was noted in 1995. Recent surveys commissioned by Alabama Power have failed to detect the Pool Sprite at Flat Rock. The granite outcrops at Flat Rock appear to be the only potentially suitable habitat within the Harris Project Boundary.

Are you aware of any additional survey work that might have documented the presence/absence of Pool Sprite and/or suitable habitats within the Harris Project Boundary?

White Fringeless Orchid (*Platanthera integrilabia*)

This species is a slender, erect, perennial herb that grows in colonies. The orchid blooms from late July to early September with fruits maturing in October. White Fringeless Orchid typically occurs in wet, flat, or boggy areas with acidic muck or sand. This plant prefers partially shaded areas at the head of streams or seepage slopes. Two extant populations have been identified in Clay and Cleburne in Talladega National Forest. According to FWS, this species' habitat range includes portions of the Harris Project Boundary at both Skyline and Lake Harris.

Are you aware of any occurrence of White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Are you aware of any suitable habitat for White Fringeless Orchid within the Harris Project Boundary at Lake Harris or Skyline?

Price's Potato Bean (*Apios priceana)*

Price's Potato Bean is a twining, herbaceous, perennial vine that grows from a tuber and has greenish-white or brownish-pink flowers. This species is found in open, bottom areas near or along the banks of streams and rivers, sometimes near the base of limestone bluffs. There are approximately 46 miles of stream bottoms with the Harris Project Boundary at Skyline. According to the most recent 5-year review (2016), there is a known population which occurs near Little Coon Creek in the Skyline WMA.

Can you provide the exact location of the population(s) at Skyline WMA so we can determine their proximity to the Harris Project Boundary?

Have any surveys for this species been performed within the Harris Project Boundary?

Do you believe there are areas within the Harris Project Boundary where this species may potentially occur and should be surveyed?

Thank you,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

HAT 5 - Recreation Evaluation draft report

APC Harris Relicensing <g2apchr@southernco.com>

Tue 8/25/2020 1:27 PM

To: APC Harris Relicensing <harrisrelicensing@southernco.com>
Bcc: damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; arsegars@southernco.com <arsegars@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; matt.brooks@alea.gov <matt.brooks@alea.gov>; coty.brown@alea.gov <coty.brown@alea.gov>; wmcampbell218@gmail.com <wmcampbell218@gmail.com>; kechandl@southernco.com <kechandl@southernco.com>; kmo0025@auburn.edu <kmo0025@auburn.edu>; kate.cosnahan@kleinschmidtgroup.com <kate.cosnahan@kleinschmidtgroup.com>; allan.creamer@ferc.gov <allan.creamer@ferc.gov>; jfcrew@southernco.com <jfcrew@southernco.com>; robinwaldrep@yahoo.com <robinwaldrep@yahoo.com>; jessecunningham@msn.com <jessecunningham@msn.com>; colin.dinken@kleinschmidtgroup.com <colin.dinken@kleinschmidtgroup.com>; mdollar48@gmail.com <mdollar48@gmail.com>; jeff_duncan@nps.gov <jeff_duncan@nps.gov>; amanda.fleming@kleinschmidtgroup.com <amanda.fleming@kleinschmidtgroup.com>; todd.fobian@dcnr.alabama.gov <todd.fobian@dcnr.alabama.gov>; sforehand@russelllands.com <sforehand@russelllands.com>; tpfreema@southernco.com <tpfreema@southernco.com>; sandnfrench@gmail.com <sandnfrench@gmail.com>; lgarland68@aol.com <lgarland68@aol.com>; keith.gauldin@dcnr.alabama.gov <keith.gauldin@dcnr.alabama.gov>; cggoodma@southernco.com <cggoodma@southernco.com>; chris.greene@dcnr.alabama.gov <chris.greene@dcnr.alabama.gov>; drheinzen@charter.net <drheinzen@charter.net>; keith.henderson@dcnr.alabama.gov <keith.henderson@dcnr.alabama.gov>; mike.holley@dcnr.alabama.gov <mike.holley@dcnr.alabama.gov>; sonjahollomon@gmail.com <sonjahollomon@gmail.com>; kmhunt@maxxsouth.net <kmhunt@maxxsouth.net>; mhunter@alabamarivers.org <mhunter@alabamarivers.org>; irwiner@auburn.edu <irwiner@auburn.edu>; butchjackson60@gmail.com <butchjackson60@gmail.com>; gjobsis@americanrivers.org <gjobsis@americanrivers.org>; gerryknight77@gmail.com <gerryknight77@gmail.com>; evan.lawrence@dcnr.alabama.gov <evan.lawrence@dcnr.alabama.gov>; clowry@alabamarivers.org <clowry@alabamarivers.org>; matthew.marshall@dcnr.alabama.gov <matthew.marshall@dcnr.alabama.gov>; donnamat@aol.com <donnamat@aol.com>; mayo.lydia@epa.gov <mayo.lydia@epa.gov>; rachel.mcnamara@ferc.gov <rachel.mcnamara@ferc.gov>; henry.mealing@kleinschmidtgroup.com <henry.mealing@kleinschmidtgroup.com>; harrymerrill47@gmail.com <harrymerrill47@gmail.com>; tlmills@southernco.com <tlmills@southernco.com>; bradandsue795@gmail.com <bradandsue795@gmail.com>; rbmorris222@gmail.com <rbmorris222@gmail.com>; chris@alaudubon.org <chris@alaudubon.org>; goxford@centurylink.net <goxford@centurylink.net>; mhpwedowee@gmail.com <mhpwedowee@gmail.com>; irapar@centurytel.net <irapar@centurytel.net>; midwaytreasures@bellsouth.net <midwaytreasures@bellsouth.net>; mitchell.reid@tnc.org <mitchell.reid@tnc.org>; sarah.salazar@ferc.gov <sarah.salazar@ferc.gov>; kelly.schaeffer@kleinschmidtgroup.com <kelly.schaeffer@kleinschmidtgroup.com>; chris.smith@dcnr.alabama.gov <chris.smith@dcnr.alabama.gov>; paul.trudine@gmail.com <paul.trudine@gmail.com>; scsmith@southernco.com <scsmith@southernco.com>; jpsparrow@att.net <jpsparrow@att.net>; twstjohn@southernco.com <twstjohn@southernco.com>; triciastearns@gmail.com <triciastearns@gmail.com>; monte.terhaar@ferc.gov <monte.terhaar@ferc.gov>; jwest@alabamarivers.org <jwest@alabamarivers.org>; bwhaley@randolphcountyeda.com <bwhaley@randolphcountyeda.com>; lswinsto@southernco.com <lswinsto@southernco.com>; jnyerby@southernco.com <jnyerby@southernco.com>

HAT 5,

The Draft Recreation Evaluation Report is available for your review on the Harris relicensing website in the HAT 5 folder. It can also be found on FERC elibrary. Note that due to file size, Appendix B of the draft report had to be filed in four separate parts.

Please submit your comments on this draft report to Alabama Power at harrisrelicensing@southernco.com by **September 30, 2020**.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Alabama Power

600 North 18th Street
Hydro Services 16N-8180
Birmingham, AL 35203
205 257 2251 tel
arsegars@southernco.com

August 24, 2020

VIA ELECTRONIC FILING

Project No. 2628-065
R.L. Harris Hydroelectric Project
Transmittal of the Draft Recreation Evaluation Report

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

Dear Secretary Bose,

Alabama Power Company (Alabama Power) is the Federal Energy Regulatory Commission (FERC or Commission) licensee for the R.L. Harris Hydroelectric Project (Harris Project) (FERC No. 2628-065). On April 12, 2019, FERC issued its Study Plan Determination[1] (SPD) for the Harris Project, approving Alabama Power's ten relicensing studies with FERC modifications. On May 13, 2019, Alabama Power filed Final Study Plans and posted the Final Study Plans on the Harris relicensing website at www.harrisrelicensing.com. The final Recreation Evaluation Study Plan required Alabama Power to complete the Draft Recreation Evaluation Report (Draft Report) by June 2020. In its April 2020 Initial Study Report[2], Alabama Power noted it would file the Draft Report in August 2020 and FERC approved this modification to the schedule on August 10, 2020.[3] The Draft Report is included as Attachment 1.

This filing also includes the stakeholder consultation for this study beginning May 2019 through August 2020 (Attachment 2). Stakeholders have until September 30, 2020 to submit their comments to Alabama Power on the Draft Report. Comments should be sent directly to harrisrelicensing@southernco.com.

Stakeholders may access this Draft Report on FERC's website (http://www.ferc.gov) and it is also available on the Project relicensing website at www.harrisrelicensing.com.

[1] Accession Number 20190412-3000

[2] Accession Number 20200410-5084

[3] Accession Number 20200810-3007

If there are any questions concerning this filing, please contact me at arsegars@southernco.com or 205-257-2251.

Sincerely,

Angie Anderegg
Harris Relicensing Project Manager

Attachment 1 – Draft Recreation Evaluation Report
Attachment 2 – Recreation Evaluation Consultation Record (May 2019-August 2020)

cc: Harris Action Team 5 Stakeholder List

APC Harris Relicensing

From: Jack West <jwest@alabamarivers.org>
Sent: Wednesday, August 26, 2020 1:57 PM
To: Anderegg, Angela Segars
Cc: APC Harris Relicensing
Subject: Re: Harris - Spawning Window Data

Hi Angie,

Thank you for sharing the AMP history of spawning windows downstream. I'm glad to hear there will be more conversation on this topic in the next HAT 3 meeting and discussion of using spawning windows as a management tool. It originally took me a little while to discern the reservoir spawning windows APC coordinates with ADCNR from downstream spawning windows, so thank you for that clarification.

Take care,

On Tue, Aug 25, 2020 at 11:05 AM Anderegg, Angela Segars <ARSEGARS@southernco.com> wrote:

> Hi Jack,
>
> The only record we have of a request from someone in the AMP group for a downstream spawning window is from 2006. It was a request from Elise Irwin for 10-14 days in May with no generation (i.e. Green Plan pulses only); however, we were not able to implement it due to high inflows.
>
> In 2017, following several meetings with the AMP technical team (which consisted of USGS, Auburn, ADCNR, USFWS and Alabama Power), a 14-day downstream spawning window in the spring was evaluated. Alabama Power limited operations for as long as possible to just the Green Plan pulses. However, the window could not be held due to the high reservoir inflows requiring additional water to be released.
>
> Since the topic of spawning windows will be of interest as we move forward in the process of evaluating release scenarios, we plan on dedicating some time to discuss it in detail at the next HAT 3 meeting in the fall of this year. At that meeting, we can discuss in more detail past efforts to provide spawning windows to determine their usefulness as a management option.
>
> Also, note that the spawning windows referenced in Appendix E of the PAD (Downstream Flow Adaptive Management History and Research), specifically Table 3-1, are for lake level stabilization. At ADCNR's request, Alabama Power voluntarily holds the reservoir elevation constant or slightly increasing to help with spawning in the reservoir.
>
> Thanks,

Angie Anderegg

Hydro Services

(205)257-2251

arsegars@southernco.com

From: Jack West <jwest@alabamarivers.org>
Sent: Wednesday, August 19, 2020 1:47 PM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Cc: APC Harris Relicensing <g2apchr@southernco.com>
Subject: Harris - Spawning Window Data

Hi Angie,

I hope you are doing well. Back during the ISR meeting in the spring, I asked a question about whether there is any available data on spawning windows during the Green Plan period (what years and seasons spawning windows were made available; how long they were held open; what flows were during those times; what were the overriding conditions in years where spawning windows were not made available).

I looked back at the ISR Meeting Summary and saw that there is some data available, but I haven't been able to locate it in the PAD. I may just be looking in the wrong place. Or APC's Reservoir Management Group may have some helpful information that is not contained in the PAD.

If you're able to help me locate the historical data about spawning windows during the Green Plan era, I would appreciate it.

My best,

--

Jack West, Esq.

Policy and Advocacy Director

Alabama Rivers Alliance

2014 6th Ave N, Suite 200

Birmingham, AL 35203

205-322-6395

www.alabamarivers.org [alabamarivers.org]

Celebrating more than 20 years of protecting Alabama's 132,000 miles of rivers and streams!

--
Jack West, Esq.
Policy and Advocacy Director
Alabama Rivers Alliance
2014 6th Ave N, Suite 200
Birmingham, AL 35203
205-322-6395
www.alabamarivers.org [alabamarivers.org]

Celebrating more than 20 years of protecting Alabama's 132,000 miles of rivers and streams!

APC Harris Relicensing

From: Collins, Evan R <evan_collins@fws.gov>
Sent: Wednesday, August 26, 2020 5:06 PM
To: Baker, Jeffery L.; Jason Moak
Cc: Anderegg, Angela Segars; Carlee, Jason; Chandler, Keith Edward
Subject: Re: [EXTERNAL] Re: Skyline Spring Data

Jeff,

Thank you for notifying me of your site selection protocol for identifying survey sites for the white fringeless orchid. I agree with these methods that focus efforts on those habitats that are most likely to support the species.

Best,
Evan

--
Evan Collins
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Alabama Ecological Services Field Office
1208-B Main Street
Daphne, AL 36526
251-441-5837 (phone)
251-441-6222 (fax)
evan_collins@fws.gov

From: Baker, Jeffery L. <JEFBAKER@southernco.com>
Sent: Wednesday, August 26, 2020 4:42 PM
To: Collins, Evan R <evan_collins@fws.gov>; Jason Moak <jason.moak@kleinschmidtgroup.com>
Cc: Anderegg, Angela Segars <ARSEGARS@southernco.com>; Carlee, Jason <JCARLEE@southernco.com>; Chandler, Keith Edward <KECHANDL@SOUTHERNCO.COM>
Subject: RE: [EXTERNAL] Re: Skyline Spring Data

Evan,

Thanks for discussing white orchid surveys for the Harris Project with me today. We would like to get your concurrence with the following survey outline or to provide additional comments if you have any. We refined survey areas for the Skyline Project Boundary using NWI wetland data, spring data from GSA, and aerial imagery. There was one freshwater forested/shrub wetland, near the Skyline Project Boundary, that appears to be downstream of one of the springs. This will be the primary search area. The remaining ponds and springs will be visited if they are accessible and time permits. In addition to the Skyline Project Boundary, we used NWI data, aerial imagery, and the Project Boundary around Lake Harris to identify wetlands for white fringeless orchid surveys. Of these, we propose to survey the freshwater emergent

wetlands and one forested/shrub wetland that is within a transmission line right of way as these areas likely represent the most suitable habitat near Lake Harris.

If we are able to discern wetlands where Sphagnum is present, using color infrared imagery, we will further refine our survey areas. Thanks again for discussing this approach with me.

Thanks,

Jeff Baker
Biologist
Alabama Power
205-351-1631
jefbaker@southernco.com

From: Collins, Evan R <evan_collins@fws.gov>
Sent: Wednesday, August 26, 2020 11:48 AM
To: Jason Moak <jason.moak@kleinschmidtgroup.com>; Baker, Jeffery L. <JEFBAKER@southernco.com>
Subject: Re: [EXTERNAL] Re: Skyline Spring Data

Very cool! I'm excited to hear what you find!
--
Evan Collins
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Alabama Ecological Services Field Office
1208-B Main Street
Daphne, AL 36526
251-441-5837 (phone)
251-441-6222 (fax)
evan_collins@fws.gov

From: Jason Moak <Jason.Moak@Kleinschmidtgroup.com>
Sent: Wednesday, August 26, 2020 11:45 AM
To: Collins, Evan R <evan_collins@fws.gov>; Baker, Jeffery L. <JEFBAKER@southernco.com>
Subject: RE: [EXTERNAL] Re: Skyline Spring Data

Asking one of our internal mapping experts if it's possible to identify areas where Sphagnum is present using color infrared imagery…

From: Collins, Evan R <evan_collins@fws.gov>
Sent: Wednesday, August 26, 2020 12:27 PM
To: Baker, Jeffery L. <JEFBAKER@southernco.com>

Cc: Jason Moak <Jason.Moak@Kleinschmidtgroup.com>
Subject: Re: [EXTERNAL] Re: Skyline Spring Data

Sounds great, Jeff! It certainly makes the most sense to focus efforts on those areas that would provide the greatest potential to support the species given the large geographic area. Just make sure you're clear about your assumptions and reasoning. Your experience with the species in the field and published literature should be available to support your logic. Let me know if you need anything else.

-Evan

--
Evan Collins
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Alabama Ecological Services Field Office
1208-B Main Street
Daphne, AL 36526
251-441-5837 (phone)
251-441-6222 (fax)
evan_collins@fws.gov

From: Baker, Jeffery L. <JEFBAKER@southernco.com>
Sent: Wednesday, August 26, 2020 11:05 AM
To: Collins, Evan R <evan_collins@fws.gov>
Cc: Jason Moak <jason.moak@kleinschmidtgroup.com>
Subject: RE: [EXTERNAL] Re: Skyline Spring Data

It's not necessary. I'll pull in all three data sets (NWI, springs, and project) and look at aerial imagery to refine the search area if you are agree with that approach. We'll prioritize emergent wetlands and go from there.

Jason, I'm open to suggestions. I'm curious what your thoughts are for refining the search area.

Jeff

From: Collins, Evan R <evan_collins@fws.gov>
Sent: Wednesday, August 26, 2020 10:59 AM
To: Baker, Jeffery L. <JEFBAKER@southernco.com>
Subject: Re: [EXTERNAL] Re: Skyline Spring Data

Wetland Features? I didn't count them up because skyline was split among two NWI watersheds and I only reviewed one watershed. Would you like me to get you a precise count?

--
Evan Collins
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Alabama Ecological Services Field Office
1208-B Main Street

Daphne, AL 36526
251-441-5837 (phone)
251-441-6222 (fax)
evan_collins@fws.gov

From: Baker, Jeffery L. <JEFBAKER@southernco.com>
Sent: Wednesday, August 26, 2020 10:51 AM
To: Collins, Evan R <evan_collins@fws.gov>
Subject: [EXTERNAL] Re: Skyline Spring Data

How many areas were there? I'm still downloading the NWI data. Just curious.

Get Outlook for iOS [aka.ms]

From: Baker, Jeffery L. <JEFBAKER@southernco.com>
Sent: Wednesday, August 26, 2020 10:32 AM
To: Collins, Evan R
Subject: RE: Skyline Spring Data

I got it. Let me take a look at it and get back with you.

From: Collins, Evan R <evan_collins@fws.gov>
Sent: Wednesday, August 26, 2020 10:28 AM
To: Baker, Jeffery L. <JEFBAKER@southernco.com>
Subject: Skyline Spring Data

Hi, Jeff. I'm trying another method to send my original email and get the spring data to you. Below is the original text. Let me know if you receive this.

Thanks

Hi, Jeff and Jason. In order to help narrow down where to conduct surveys for the White Fringeless Orchid, it could be worth considering the National Wetlands Inventory dataset. It would probably be easiest if you downloaded the data from this website: https://www.fws.gov/wetlands/Data/Data-Download.html [fws.gov] since the data is large and potentially difficult to share through email. I would encourage you to consider ponds as well as emergent and woody wetlands. I quickly reviewed the quantity of these features within the WMA and did not think that there was an overwhelmingly large number. I am also providing a shapefile of springs within or near Skyline WMA (see attachment). Again, there appear to be about 10 springs within the WMA. I would envision an approach that incorporates your expertise with the species in field and

leverages these two datasets to target field surveys would be quite adequate to prioritize surveys. For instance you may be able to rank sites based on what your expertise and the literature indicate to be the most likely habitat. I might assume that emergent wetlands that are influenced by a spring would be a highest priority and a pond would be the lowest priority. Let me know what you think or if you'd like to discuss further.

-Evan

--
Evan Collins
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Alabama Ecological Services Field Office
1208-B Main Street
Daphne, AL 36526
251-441-5837 (phone)
251-441-6222 (fax)
evan_collins@fws.gov

APC Harris Relicensing

From: APC Harris Relicensing
Sent: Friday, August 28, 2020 9:13 AM
To: Rachel McNamara
Subject: RE: HAT 5 - Recreation Evaluation draft report

Hi Rachel,

We're going to wait until we receive comments and then determine the need/timing for the next HAT 5 meeting.

I hope all is well with you!

Angie

From: Rachel McNamara <Rachel.McNamara@ferc.gov>
Sent: Tuesday, August 25, 2020 3:45 PM
To: APC Harris Relicensing <g2apchr@southernco.com>
Subject: Re: HAT 5 - Recreation Evaluation draft report

Just a question - is there a plan to have a HAT 5 meeting before comments are due?

Thanks,

Rachel

Rachel McNamara | Outdoor Recreation Planner
Federal Energy Regulatory Commission | Office of Energy Projects
Division of Hydropower Licensing | South Branch
888 First Street, N.E. | Washington, DC 20426
202-502-8340 | rachel.mcnamara@ferc.gov

From: APC Harris Relicensing <g2apchr@southernco.com>
Sent: Tuesday, August 25, 2020 9:27 AM
To: APC Harris Relicensing <g2apchr@southernco.com>
Subject: HAT 5 - Recreation Evaluation draft report

HAT 5,

The Draft Recreation Evaluation Report is available for your review on the Harris relicensing website in the HAT 5 [harrisrelicensing.com] folder. It can also be found on FERC elibrary [elibrary.ferc.gov]. Note that due to file size, Appendix B of the draft report had to be filed in four separate parts.

Please submit your comments on this draft report to Alabama Power at harrisrelicensing@southernco.com by **September 30, 2020**.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: Anderegg, Angela Segars
Sent: Friday, August 28, 2020 10:39 AM
To: todd.fobian@dcnr.alabama.gov; 'Mike Holley'
Cc: Chandler, Keith Edward
Subject: 2020-8-21 meeting summary
Attachments: 2020-8-21 ADCNR meeting summary.pdf

Todd and Mike,

Attached is a brief meeting summary and the presentation from our meeting last week. Thanks again for meeting with us.

Have a great weekend,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

Tallapoosa River Studies Meeting Summary
August 21, 2020
9:00 am to 10:30 am
Conference Call

Participants:
Todd Fobian – ADCNR
Mike Holley – ADCNR
Angie Anderegg – Alabama Power
Keith Chandler – Alabama Power
Ashley McVicar – Alabama Power
Jason Moak – Kleinschmidt

Meeting Summary:

Alabama Power met with several ADCNR personnel, some that are fairly new to the Harris relicensing process, in order to provide additional context on how and why the relicensing studies were developed. Alabama Power walked through the attached presentation and the group discussed when stakeholders will have the opportunity to provide comments, when stakeholders will have the opportunity to review other stakeholder comments and how all of the analysis will be used in developing the PME measures Alabama Power will include in its license proposal.

R.L. Harris Project Relicensing

Tallapoosa River Studies

August 21, 2020

HARRIS DAM
RELICENSING

Brief History of the Process

1973	License Issued
1983	Project Began Operating
1998	Discussions about mitigating effects of operations began
2003	First Adaptive Management Process Workshop
2005	Alabama Power Implements Green Plan
2005-2017	Alabama Power continues Green Plan implementation and funds Tallapoosa River research
2017	Issue Identification Workshop
2018	HAT formation and Study Plan Development
2019	Resource studies begin

HARRIS DAM
RELICENSING

Alabama Power and ADCNR Funded Fishery Studies Summary

- **Auburn's Sampling Methodology**
  - **Fish Sampling**
    - Wade into shallow areas and install an electro grid
    - Leave the grid in place undisturbed for a set amount of time while nets are being deployed immediately downstream
    - Energize grid and collect all fish in the nets
  - **Macro Sampling**
    - Macroinvertebrate samples were collected and returned to the lab
    - There was a long delay in getting any of the macro data
  - **Temperature Data Collection**

- **Potential data gaps identified during relicensing meetings**
  - Larger fish likely do not return to the area prior to the sampling taking place
  - Only shallow habitat had been sampled (pool areas could be supporting numerous other species that the sampling could be missing)
  - Limited macro data has been processed
  - Temperature data, although available for several years, was limited to a few locations that may not be representative of the whole fishery

Resource Issues and Studies

Issues Identified for Further Evaluation in Relicensing	Study(s) that Evaluate the Issue

Characterization of existing fishery
• Fish sampling of different habitat types
  • Prior sampling limited to shallow runs
  • No recent sampling of deep water
• Gut analysis to determine food availability
	Aquatic Resources Study

Operational effects on availability and persistence of habitat • Request from ADCNR to quantify pre and post Green Plan implementation	Downstream Aquatic Habitat Study
Operational effects on water temperature • What temperatures are the fishery experiencing (overall temperature and changes throughout day) • What would any change to operations do to these temperatures	Downstream Aquatic Habitat Study; Aquatic Resources Study; Downstream Release Alternatives Study
Operational effects on fish growth • What effects is temperature having on growth, spawning, etc. to the fish population • Fish being used by Auburn are from the river	Aquatic Resources Study

HARRIS DAM RELICENSING

Process of Developing the PLP

- Finalize studies and develop final study reports
- Host Harris Action Team (HAT) meetings
  - Discuss results and begin talking about solutions to address resource effects
- Alabama Power may also meet directly with agencies to discuss specific issues and enhancement measures
- The PLP will describe Alabama Power's relicensing proposal
  - Includes operational and environmental/recreation protection, mitigation and enhancement measures (PME) and analyses

HARRIS DAM
RELICENSING

RELICENSING PROCESS TIMELINE

April 2021
Studies Completed; Final Study Reports Issued

June 2021
Alabama Power Files Preliminary Licensing Proposal

August 2021
Comments on Preliminary Licensing Proposal

November 30, 2021
Alabama Power Files License Application

HARRIS DAM
RELICENSING

APC Harris Relicensing

From: Mayo, Lydia <Mayo.Lydia@epa.gov>
Sent: Friday, August 28, 2020 1:40 PM
To: Anderegg, Angela Segars
Subject: Re: HAT 3 - Downstream Aquatic Habitat draft report

Hi Angie.
It could have but I've been getting all the other emails. Thanks for checking for me.
Lydia

From: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Sent: Friday, August 28, 2020 1:54 PM
To: Mayo, Lydia <Mayo.Lydia@epa.gov>
Subject: RE: HAT 3 - Downstream Aquatic Habitat draft report

Hi Lydia,

I checked the original email sent on 6/30 and you were in the bcc with the correct email address. Any chance it went to a spam folder or was blocked by a firewall?

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

From: Mayo, Lydia <Mayo.Lydia@epa.gov>
Sent: Friday, August 28, 2020 11:00 AM
To: Anderegg, Angela Segars <ARSEGARS@southernco.com>
Subject: Fw: HAT 3 - Downstream Aquatic Habitat draft report

Hi Angie.
For some reason I didn't receive the 6/30 email below. Can you see why I was left off. I usually get the HAT 3 emails/notifications.
Thanks.
Lydia

Lydia Mayo
Water Quality Standards Section
U. S. EPA Region 4 Water Division
Phone: (404) 562-9247

From: APC Harris Relicensing <g2apchr@southernco.com>
Sent: Tuesday, June 30, 2020 3:51 PM
To: APC Harris Relicensing <g2apchr@southernco.com>
Subject: HAT 3 - Downstream Aquatic Habitat draft report

HAT 3,

The draft Downstream Aquatic Habitat report is available for your review on the Harris relicensing website in the HAT 3 [gcc01.safelinks.protection.outlook.com] [gcc01.safelinks.protection.outlook.com] folder (2020-06-30 Draft Downstream Aquatic Habitat Report (includes Level Logger Data). It can also be found on FERC elibrary (Draft Report on FERC elibrary [gcc01.safelinks.protection.outlook.com] [gcc01.safelinks.protection.outlook.com]). Note that in order to view the Level Logger Data appendix, the report must be downloaded or saved as a pdf. Once open as a pdf, click on the paperclip icon on the left-hand side, then double click on Appendix B – Level Logger Data.xlsx to open the data in Excel.

Please submit your comments on this draft report to Alabama Power at harrisrelicensing@southernco.com by **August 1, 2020**.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: Fobian, Todd <Todd.Fobian@dcnr.alabama.gov>
Sent: Friday, August 28, 2020 2:46 PM
To: APC Harris Relicensing
Cc: Greene, Chris; Marshall, Matthew; Anderegg, Angela Segars; Abernethy, Damon
Subject: ADCNR Comments on the Harris Project Initial Study Report (ISR) Draft Aquatic Resources Report for the R. L. Harris Hydroelectric Project (FERC No. 2628).
Attachments: Harris Project Initial Study Report (ISR) Draft Aquatic Resources Report_tbf_082820 _ADCNR_comments_Final.pdf

Good afternoon-

Attached please find our review comments on the Harris Project Initial Study Report (ISR) Draft Aquatic Resources Report for the R. L. Harris Hydroelectric Project (FERC No. 2628). If you have any questions or concerns, please contact me. Thank you for the opportunity to review this report.

Todd Fobian
Environmental Affairs Supervisor
Alabama Wildlife and Freshwater Fisheries Division
64 N. Union Street, Suite 551
Montgomery, AL 36130
Office: 334-353-7484
Cell: 334-850-3798
Todd.Fobian@dcnr.alabama.gov

From: APC Harris Relicensing <g2apchr@southernco.com>
Sent: Tuesday, July 28, 2020 3:56 PM
To: APC Harris Relicensing <g2apchr@southernco.com>
Subject: HAT 3 - Aquatic Resources draft report

HAT 3,

The draft Aquatic Resources report is available for your review on the Harris relicensing website in the HAT 3 folder (2020-07-28 Draft Aquatic Resources Study Report). It can also be found on FERC elibrary (Draft Report on FERC elibrary).

Please submit your comments on this draft report to Alabama Power at harrisrelicensing@southernco.com by **August 28, 2020**.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

STATE OF ALABAMA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
WILDLIFE AND FRESHWATER FISHERIES DIVISION

64 North Union Street, Ste. 567
P. O. Box 301456
Montgomery, AL 36130-1456
Phone: (334) 242-3465 Fax: (334) 242-3032
www.outdooralabama.com

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

August 28, 2020

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

RE: Comments on the Harris Project Initial Study Report (ISR) Draft Aquatic Resources Report for the R. L. Harris Hydroelectric Project (FERC No. 2628).

Dear Ms. Bose:

The Alabama Department of Natural Resources (ADCNR) Division of Wildlife and Freshwater Fisheries (WFF), has reviewed the Federal Energy Regulatory Commission (FERC) filed Harris Project Initial Study Report (ISR) Draft Aquatic Resources Report in regards to the relicensing of R.L. Harris Hydroelectric Project No. 2628 and submits the following comments and recommendations for your consideration:

Draft Aquatic Resources Report

- On page 2, section 1.1 Study Background of the Draft Aquatic Resources Report, it states "*Alabama Power prepared this draft report to support the relicensing process and to fulfill the requirements of the FERC-approved Aquatic Resources Study Plan. The draft report is comprised of two components: 1) results of the desktop assessment used to compile the possible effects of dam operations and 2) progress and results to date of Auburn University's research on the literature requirements of target species located in the Tallapoosa River below Harris Dam, an analysis of existing temperature data below Harris Dam, fish community sampling and evaluation, and respirometry tests and bioenergetics modeling of fish.*" With some of the requirements from the FERC approved Aquatic Resources Study Plan completed and nearly half of the requirements remaining incomplete, it would be beneficial to provide a summary table or paragraph indicating which requirement components from the Study Plan are completed and which requirements will be provided in the Final Aquatic Resources Report. If modifications to any FERC approved Aquatic Resources Study Plan requirements were made, provide a notification and explanation in the report for the modifications. If any of the requirements are provided in one of the other Study Reports, provide a reference to the material or add to the appendix of the report. The Study Plan indicates that the bioenergetics model requirement would be released April 2021 following the Draft Report and are excluded from the following list. Remaining FERC approved Aquatic Resources Study Plan requirements ADCNR identified include:

  - Identify aquatic species and populations whose presence and/or sustainability within the Study Area may have been affected by the Harris Project. Describe the factors affecting their presence and sustainability.
  - Comparison of Temperature Data in Unregulated Portions of the Study Area (i.e., Newell and Heflin).
  - Results of the temperature data analysis will be compared to the temperature requirements of target species (see Section 4.2.1) to determine how those species may be affected by baseline operations.
  - Auburn University and Alabama Power will perform field sampling to characterize the current fishery in shallow water habitats in the Study Area. Wadable, shallow water habitats will be sampled using a standardized protocol known as the 30+2 method (O'Neil et al. 2006). Data from ADEM's 2018 fish surveys in the Tallapoosa River may be used to supplement collections by Auburn University and Alabama Power. (If supplementing this data for shallow water sampling include data in the report or in an appendix and discuss results).
  - Deep and shallow fish survey sampling should include common metrics such as abundance, diversity, evenness, etc. and calculated for each study reach (Recommend a similar basin calibrated IBI calculation for comparison to previous studies (Bowen *et al.* 1996; O'Neil *et al.* 2006; Irwin 2019)).

- Throughout the Draft Aquatic Resources Report, utilize one term to represent Harris Reservoir for consistency purposes (For example, different terms identified were, Harris Reservoir, Harris Lake, Lake Harris). In addition, when discussing unregulated sites make sure to specify if they are upstream or downstream of Harris Reservoir to assist with site orientation within the Tallapoosa River system.
- On page 1, section 1.1 Study Background of the Draft Aquatic Resources Report, it states "*Monitoring conducted since initiation of the Green Plan has indicated a positive fish community response and increased shoal habitat availability (Irwin et al.* 2011); *however, little information exists characterizing the extent that the Green Plan has enhanced the aquatic habitat from Harris Dam downstream through Horseshoe Bend.*" Recent reporting of fish community monitoring indicates that fish densities in the regulated river downstream of Harris Dam have been depressed when compared to unregulated sites (Irwin et al. 2019).
- On page 5, section 2.3.1 Tallapoosa River Basin of the Draft Aquatic Resources Report, it states, "*Three of these, Gulf Sturgeon (Acipenser oxyrinchus desotoi), Alabama Sturgeon (Scaphiryhnchus suttkusi), and Alabama Shad (Alosa alabamae) are considered extirpated from the TRB.*" Change to "Three of these, Gulf Sturgeon (*Acipenser oxyrinchus desotoi*), Alabama Sturgeon (*Scaphiryhnchus suttkusi*), and Alabama Shad (*Alosa alabamae*) are hypothesized to be extirpated from the TRB due to dams on the Alabama River main stem restricting upstream migration and movement for spawning (Freeman *et al.* 2005). Ongoing studies by ADCNR are utilizing traditional collection methods in addition to environmental DNA detection to determine species status in the Mobile Basin. This research will assist in determining the extent and potential for sturgeon and shad to pass through navigational locks." For Alabama Sturgeon, USFWS concluded at the time of listing (74 FR 26488 26510; June 2, 2009) that the lower Coosa and Tallapoosa Rivers were not occupied at the time of listing. Results of recent collections of environmental DNA (eDNA) from water samples have detected the species in the Alabama River from below Robert F. Henry. Although most eDNA detections were from areas below the first passage barrier on the Alabama River (Claiborne lock and dam), there were eDNA detections past two passage barriers (Pfleger *et al.* 2016). The last specimen was collected from the Alabama River on April 3, 2007 (Rider *et al.* 2011). Another specimen was observed below Robert F. Henry Lock and Dam on April 23, 2009; however, ADCNR biologists were unable to net the fish (Rider *et al.* 2010). Gulf Sturgeon at Claiborne Lock and Dam were detected both by eDNA and by sonic tag (Rider et al. 2016) and by eDNA below Robert F. Henry (Pfleger *et al.* 2016). Only two individuals of Alabama Shad have been caught in the Alabama River since impoundment, one in 1993 below Claiborne lock and dam

and one in 1995 below Miller's Ferry lock and dam. The last specimen of Alabama Shad to be captured from the Coosa River was in 1966 (Boschung, 1992), and no Alabama Shad have been caught in the Tallapoosa River in the last decade (Freeman et al., 2001). Since 2010, the US Army Corps of Engineers in cooperation with ADCNR has been conducting voluntary conservation locking measures to provide potential fish passage during the spring spawning season at Claiborne and Millers Ferry lock and dam. The detection of Alabama and Gulf sturgeon eDNA above these hydro projects could indicate the potential for fish to pass through these navigation locks. If fish passage occurred at Robert F. Henry dam similarly to other lower lock and dams, sturgeon and shad could potentially gain access to the Lower TRB. However, further study is needed to determine the correct path of passage and to what extent.

- On page 5, section 2.3.1 Tallapoosa River Basin of the Draft Aquatic Resources Report, it states "*An estimated 15 mussel species occur or have occurred within the TRB (Table 2-2).*" Johnson *et al.* (2002) results state, "Twenty unionid mussel species and one species of corbiculid clam, *Corbicula fluminea*, were collected within the Tallapoosa River drainage during this survey (Table 1). This, combined with an additional 12 species that have been documented historically (Table 1) yields a total of 33 bivalve species." Williams *et al*. (2008), reports 36 total mussel taxa from the Tallapoosa River system (page 46, Table 4.2 of Williams *et al.* 2008). In addition to these reports, The University of Michigan Museum online records database contain an Alabama Hickorynut (*Obovaria unicolor*) specimen (UMMZ 107539) record from the Tallapoosa River, Randolph County, B. Walker Collection, that is not included in Johnson *et al.* 1997 or Williams *et al.* 2008 historical species list and should be added, pending current museum verification inquiry. Update the historical mussel species list, basin occurrence, and state/federal conservation status, accordingly in this summary section and Table 2-2. In addition to State Species of Greatest Conservation Need (GCN) status, provide if any species are state protected in Alabama Regulations 2019-2020 Invertebrate Species Regulation 220_2_.98 handbook or are currently under review for federal listing by United States Fish and Wildlife Service (USFWS) with substantial 90 day findings. ADCNR has records of 40 mussel species based on current and historical records from the Tallapoosa River system (includes separating Alabama Orb (*Cyclonaias asperata*) and Tallapoosa Orb (*Cyclonaias archeri*) and adding *O. unicolor*) (Gangloff and Feminella 2007; Gangloff *et al.* 2009; Johnson 1997, Johnson *et al.* 2002; Singer and Gangloff 2011; Storey *et al.* 2003; Williams *et al.* 2008). Change title to Freshwater Mussel Species of the Tallapoosa River Basin or add aquatic gastropods to Table 2-2 with no title change. If any mollusk surveys have been completed for the Threatened and Endangered Species Harris relicensing project, include and discuss results in the Final Aquatic Resources Report. Tributaries and mainstem river sections surveyed for the project should indicate any mollusk reduction or loss of species presence and abundance observed compared to Johnson (1997) or other notable mollusk survey studies. ADCNR Natural Heritage Database includes records of Alabama Spike (*Elliptio arca*) from Sandy Creek an eastern tributary to the Middle Tallapoosa in 2002 (Singer and Gangloff 2011). This record should be included in the Final Aquatic Resources Report.
- On page 5, section 2.3.1 Tallapoosa River Basin of the Draft Aquatic Resources Report it states, "*One species, the Georgia Pigtoe (Pleurobema hanleyianum), is considered extirpated from the TRB.*" This information appears to be inaccurate, Johnson 1997; Johnson *et al.* 2002; Williams *et al.* 2008 and November 11, 2010 USFWS Georgia Pigtoe (*Pleurobema hanleyianum*) federal register listing (75 FR 67512 67550) do not include the Tallapoosa River as a known historical river system for Georgia Pigtoe. Two Pleurobema species with historical records in the Tallapoosa River system include Southern Clubshell (*Pleurobema decisum*) and Ovate Clubshell (*Pleurobema perovatum*). Provide a correction or information supporting historical records of Georgia Pigtoe (*Pleurobema hanleyianum*) in the Tallapoosa River system.
- On page 5, section 2.3.1 Tallapoosa River Basin of the Draft Aquatic Resources Report, provide paragraph discussing aquatic gastropod species within the Tallapoosa River System. In addition, provide a similar table to Table 2-2 for aquatic gastropods or add aquatic gastropods to Table 2-2.

Utilizing Johnson (1997) and ADCNR Natural Heritage Database records for this list in addition to any other recent studies or collections is recommended.

- On page 5, section 2.3.1 Tallapoosa River Basin of the Draft Aquatic Resources Report it states, "*An estimated nine crustacean species in the Upper and Middle TRB have been reported in ADCNR's Natural Heritage Database (Table 2-3).*" Eleven species are reported in Johnson (1997). Include this study information and provide explanations for any discrepancies between the different numbers and species lists (basin location may account for variations). Update species lists accordingly to reflect findings. In addition to State GCN status, provide if any species are state protected in Alabama Regulations 2019-2020 Invertebrate Species Regulation 220_2_.98 handbook.
- On page 7, Table 2-1 of the Draft Aquatic Resources Report add a sub basin occurrence column similar to the invertebrate species Tables 2-2 through 2-4 for consistency and further examination. For example, ADCNR is only aware of Lepisosteidae records in the lower Tallapoosa basin of the system. This information would be useful in a table format when evaluating Harris studies. In addition, separating conservation status columns into federal conservation status (including currently under review for federal listing by USFWS with substantial 90-day findings), state GCN status and state protected in Alabama Regulations 2019-2020 Protected Nongame Species Regulation 220_2_.92 (a).
- On page 7, Table 2-1 of the Draft Aquatic Resources Report add new species identified in the Auburn University fish sampling list from Appendix B page 7 Results Section. These additions include, Blueback Herring (*Alosa aestivalis*) and Snail Bullhead (*Ameiurus brunneus*).
- On page 18, section 2.3.2, of the Draft Aquatic Resources Report, remove, "*Unfortunately, widespread negative attitudes toward the…*" and replace with "Evidence of anglers not harvesting small bass under 13 inches reduced the effect of the imposed limit"
- On page 18, section 2.3.2, of the Draft Aquatic Resources Report, it states, "*Black Crappie were found in large numbers in the Harris Reservoir and exhibited much better growth and size structure than crappie (Pomoxis spp.) in the river, which was attributed to more abundant habitat and forage availability in the reservoir (Hartline et al. 2018).*" Provide where "in the river" is referring to.
- On page 18, section 2.3.2, of the Draft Aquatic Resources Report, include a statement specifying that ADCNR standardized sampling includes only a few popular game species at Harris Reservoir. It is important to note that other popular fisheries exist in Harris Reservoir, such as Flathead Catfish (*Pylodictis olivaris*), Blue Catfish (*Ictalurus furcatus*), Channel Catfish (*Ictalurus punctatus*), Redear Sunfish (*Lepomis microlophus*), Bluegill Sunfish (*Lepomis macrochirus*), and White Bass (*Morone chrysops*).
- On page 19, section 2.3.2, of the Draft Aquatic Resources Report, change *"…stable or a slightly rising elevation for a period of 14 days to increase the spawning success of these species.*" to "…stable or a slightly rising elevation for a period of 14 days to provide improved conditions for spawning and hatching success."
- On page 19, section 2.3.3, of the Draft Aquatic Resources Report, it states, "*The following is a chronologically ordered synopsis of available information pertaining to aquatic resources in the Tallapoosa River downstream of Harris Dam.*" This statement needs to be reworded to state, "The following is a chronologically ordered synopsis based on Alabama Power Company's (APC) interpretation of selected relevant and historic information pertaining to aquatic resources in the Tallapoosa River System. Since the APC synopsis provided has not been through a scientific journal peer review process, there is a potential for bias or misinterpretation of the author(s) specific findings or conclusions." ADCNR has significant issues regarding how some of the studies were represented. In addition to an APC synopsis provided, if a peer-reviewed technical journal, master's thesis, doctoral dissertation or unpublished report discussed in this section include abstracts, include in an appendix of the Final Aquatic Resources Report, similar to page 20 of section 4.0 Publications in Appendix E, Volume 1 of the June 2018 R.L. Harris Hydroelectric Project Pre-Application Document or within the report prior to the APC synopsis. We reserve the right to continue providing comments on the included synopses and provide additional sources of

information to include for consideration during the continued Final Aquatic Resources Report commenting and adaptive management plan process.

- On page 21, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Travnicheck and Maceina (1994) APC synopsis, provide a few statements regarding details of which specific species of catostomid (suckers) decreased in relative abundance.
- On page 21, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Johnson (1997) APC synopsis, add that in the Upper Tallapoosa tributaries Alabama Spike (*Elliptio arca*) was collected.
- On page 22, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Johnson (1997) overview summary, "Southern Rainbow (*Villosa iris*)" should be changed to "Southern Rainbow (*Villosa vibex*)".
- On page 22, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Johnson (1997) APC synopsis, there are several aquatic gastropod species missing from this summary that are listed in the paper. Update missing species provided in Johnson (1997). ADCNR has records of eight species of aquatic gastropods historically present in the TRB, minus *Physella sp*. species. Physella taxonomy is currently undetermined. There could be one species or up to three species of Physella present in the TRB, pending further investigation. Rock Fossaria (*Fossaria modicella*) is now *Galba modicella*. Any Fossaria that were found in Johnson (1997) are recognized as *G. modicella*. Pointed Campeloma (*Campeloma decisum*) does not occur in the Mobile Basin. Any Campeloma that were found in Johnson (1997) are recognized as Cylinder Campeloma (*Campeloma regulare*). Including specific tributary names of collections is recommended.
- On page 23, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Freeman *et al.* (2001) APC synopsis, provide the ten species investigated in this study. Include in the overview summary, that during summer, lower and more stable flows occurred at the regulated site which favored later spawning fish. Five of six species that spawn in the spring were less abundant at flow regulated sites compared to the upper unregulated sites.
- On page 23, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Irwin and Belcher (1999) APC synopsis, include how many Flathead Catfish were tagged and stocked and additional potential causes for why no tagged Flathead Catfish were reported.
- On page 24, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Sakaris (2006) APC synopsis, remove "surprisingly".
- On page 25, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Irwin *et al.* (2011) APC synopsis, provide IBI score overviews similar to Bowen *et al.* (1996) summary section. Remove one of the "be" after "Lipstick Darter may be be maintaining" and add Green Plan prior to "flow regulation" in this sentence.
- On page 26, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Irwin *et al.* (2011) APC synopsis, reword, "…but Tallapoosa Darter seemed to be reproducing and faring well downstream of the dam." excluding "seemed to be" and "faring well".
- On page 27, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Earley (2012) APC synopsis, it states, "Cortisol had no substantial effect of growth…" It is important to remember that no substantial effect does not correlate to no effect. Physiological stressors for both species showed altered stress response at the regulated site on the Tallapoosa River compared to the reference site. This difference was possibly due to the non-natural flow regime measured at the regulated site.
- On page 27, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Goar (2013) APC synopsis, rewrite overview to state, "Age-0 Redbreast Sunfish (*Lepomis auratus*) were collected at two regulated flow sites on the Tallapoosa River downstream of R.L. Harris Dam, at one unregulated flow site above Harris Reservoir, and an unregulated tributary stream of the Tallapoosa River downstream of R.L. Harris Dam. Overall daily growth rate and incremental growth rate varied among years and was higher at regulated sites than unregulated sites, although overall model fit was modest. Hatch frequency was higher and occurred earlier in unregulated sites

compared to hatching in regulated sections. In laboratory experiments, results suggested that simulated high flows and decreased water temperatures similar to those measured on the regulated portion of the Tallapoosa River negatively affect daily growth rates and survival of Channel Catfish (*Ictalurus punctatus*) and Alabama Bass (*Micropterus henshalli*). Mortality was highest and daily growth lower in treatments with decreased water temperatures. Older fish displayed higher daily growth rates and decreased mortality and were not as susceptible to the negative effects of simulated high flows and lower temperatures. These data suggest that growth and survival may be impacted more by fluctuations in temperature than flow."

- On page 28, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Sammons *et al.* (2013) APC synopsis, include statement that the short lifespan of Tallapoosa Bass "may have hindered the ability of residual analysis to identify relationships between hydrology and recruitment of this species."
- On page 28, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Sammons *et al*. (2013) APC synopsis, regarding rainfall and flows, Sammons et al. (2013) stated based on observations during sampling "that catch rates of age-0 fish of all three species was higher in the lower and upper reaches than in the middle reach, indicating that recruitment at the population-level is likely impacted in the middle reach."
- On page 29, Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Gerken (2015) APC synopsis, provide the ten species investigated in this study. Include in the overview summary, that HPUE was positively correlated to water temperature and negatively correlated to discharge for eight species of fish. Add that surveyed anglers targeted catfishes and black basses and reported catch rates of 2.0 fish per hour.
- On page 30, Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Kennedy (2015) APC synopsis, include that a total of 50 fish species were collected over the 22 sites sampled. Of these 50 species, 13 species were collected with a high enough frequency that permitted further analyses.
- On page 32, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Irwin (2019) APC synopsis, provide IBI score overviews similar to Bowen *et al.* (1996) summary section. Note differences in metrics between studies.
- On page 33, Table 2-5 Summary of Findings from Studies in the Tallapoosa River Below Harris Dam, it should be noted that the findings are based on the interpretation of APC. Including the individual abstracts of the actual research reports would eliminate any potential bias and the possibility of misinterpreting the study results.
- On page 33, Table 2-5 of the Draft Aquatic Resources Report, delete or rewrite table summary with major revisions. The majority of the brief summaries provided are either insufficient, incomplete and/or are not all inclusive of the research results or conclusions. Findings should point the reader to the actual research abstracts, which should also be included in this report.
- On page 35, 2.4 Summary section of the Draft Aquatic Resources Report, rewrite the first paragraph, accordingly, based on new species numbers and analysis after implementing ADCNR comments above. We recommend providing a more detailed summary of which specific aquatic species and populations (faunal shift changes) whose presence and/or sustainability within the Study Area have increased, decreased or remained stable since operation of the Harris Project and voluntary Green Plan implementation.
- On page 35, 2.4 Summary section of the Draft Aquatic Resources Report, it states, " *In the spring, Alabama Power coordinates with ADCNR to maintain Harris Reservoir at a stable or slightly rise in elevation for a two-week period to increase spawning success of sport fish species, including Largemouth Bass, Alabama Bass, and Black Crappie.*" Add "in the Harris Reservoir" after "Crappie". ADCNR appreciates this voluntary coordinated effort with APC to improve spawning success of sport fish species in the reservoir. It is great example of how stable spawning periods can be crucial to sport fish management and how cooperation among stakeholders can contribute to targeted natural resource positive outcomes.

- On page 37, section 3.2.1 of the Draft Aquatic Resources Report, it states, "*There is little existing temperature data on the recently described Tallapoosa Bass and Alabama Bass species. Spotted Bass data are being gathered as a surrogate to Alabama Bass data since the two species are very closely related.*" If no specific data is obtained regarding temperature data for the Tallapoosa Bass, in addition to the information obtained on Alabama Bass, ADCNR recommends including as supplement, available temperature requirements of Redeye Bass (*Micropterus coosae*) and Shoal Bass (*Micropterus cataractae*). Auburn University has the perfect opportunity to study, and publish temperature requirements for Tallapoosa Bass, if there is nothing in the literature to use. Trying to use "similar" species may not be accurate for the bioenergetics modeling trials.
- On page 38, section 3.2.2 of the Draft Aquatic Resources Report, it states, "*Daily fluctuations of 10 °C were rare during both Pre-Green Plan and Green Plan operations. Overall, releases from Harris Dam could cause temperature decreases of 4 °C in the summer and 1-2 °C in the fall (see June 2, 2020 HAT 3 meeting summary in Attachment 2)*." Specify what percentage of time yearly, monthly, daily and hourly, 2, 4, 6, 8 and 10 °C, changes occurred. Provide the time frame temperature changes described, are referring to in the text. For water temperature data, maximum and minimum values, and how long those values persist (hours) would better explain the fluctuation in temperature changes occurring in a regulated and unregulated river reaches. Providing detailed reporting of minimum and maximum values at hourly intervals especially when water temperatures reach critical spawning ranges (15-25°C) in the spring, is important to fully understand what is occurring to aquatic resources (See July 31, 2020, ADCNR page 18, section 3.2.4 Water Temperature of Draft Downstream Aquatic Habitat Report comments on temperature change). Provide mean, median, minimum and maximum hourly water temperature fluctuations in this section. A comparison of hourly changes between unregulated and regulated reaches will be critical in evaluating temperature impacts to natural resources.
- On page 38, section 3.2.2 of the Draft Aquatic Resources Report, it states, "*A direct comparison of temperatures between unregulated and regulated reaches will be included in the Final Aquatic Resources Study Report in April 2021*". Explain why the unregulated temperature evaluation was not included in the Draft Aquatic Resources Report. In addition, this section indicates that temperature is less variable in the tailrace than at Wadley. The tailrace should theoretically receive the coldest and largest amount of discharge. Provide verification of this result and include an explanation of potential causes for this variation as you proceed further downstream of the discharge.
- On page 38, section 3.2.3 of the Draft Aquatic Resources Report, it is unclear if this fish population includes shallow water habitat or only deep-water habitat analysis. The methods describe deep water sampling methods only. Specify which sites are shallow water and which are deep water. If any of ADEM's 2018 fish surveys in the Tallapoosa River will be used to supplement collections by Auburn University and Alabama Power, include data in the report or in an appendix and discuss results. Provide deep and shallow fish survey sampling metrics such as numbers of each species collected, abundance, diversity, evenness, etc. and calculate for each study reach (Recommend a similar basin calibrated IBI calculation for comparison to previous studies (Bowen *et al.* 1996; O'Neil *et al.* 2006; Irwin 2019)). If selected monitoring sites were modified or changed, provide details on habitat and fish sampling differences observed between sites.
- On page 3, section 2.1 in Appendix B of the Draft Aquatic Resources Report, since data relevant to effect of temperature requirements for Tallapoosa Bass do not currently exist, ADCNR recommends including additional available temperature requirements of Redeye Bass (*Micropterus coosae*) and Shoal Bass (*Micropterus cataractae*).
- On page 4, section 2.2 in Appendix B of the Draft Aquatic Resources Report, include an explanation or supporting sources for why extreme fluctuations in temperature in daily temperatures were defined as a 10 °C shift for this study. In addition to yearly, monthly and daily temperature shifts included, specify what percentage of time during hourly analysis, 2, 4, 6, 8 and 10 °C, changes occurred. For water temperature data, maximum and minimum values, and how long those values persist (hours) would better explain the fluctuation in temperature changes

occurring in a regulated and unregulated river reaches. Providing detailed reporting of minimum and maximum values at hourly intervals especially when water temperatures reach critical spawning ranges (15-25°C) in the spring. This information is needed to fully understand what is occurring to aquatic resources (See July 31, 2020, ADCNR page 18, section 3.2.4 Water Temperature of Draft Downstream Aquatic Habitat Report comments on temperature change). Provide mean, median, minimum and maximum hourly water temperature fluctuations in this section. Provide more details on the noted periods of relatively higher variation during both pre- and post- Green Plan periods including how many times they occurred for each site. If temperature data is unavailable for a specific site, during a time period when other sites indicate high temperature variation, provide a caveat recognizing these specific key data range gaps with an explanation for the absence. For example, Tailrace 2000 Temp Range is unavailable for 10-12-month data, but Malone and Wadley both indicate high variation during this same time period. Unavailable temperature data gaps, during key high temperature variation events, has the potential to significantly reduce analyses of temperature changes and impacts occurring in the regulated reach. A comparison of yearly, monthly, daily and hourly changes between unregulated and regulated reaches will be critical in evaluating temperature impacts and providing details for Modified Green Plan flow scenario recommendations. Explain why the unregulated temperature evaluation was not included in the Draft Aquatic Resources Report and include this analysis in the Final Aquatic Resources Report.

- On pages 5-7, section 2.3 in Appendix B of the Draft Aquatic Resources Report, deep and shallow fish survey sampling should include common metrics such as abundance, diversity, evenness, etc. and calculated for each study reach (Recommend a similar basin calibrated IBI calculation for comparison to previous studies (Bowen *et al.* 1996; O'Neil *et al.* 2006; Irwin 2019)). Data from ADEM's 2018 fish surveys in the Tallapoosa River may be used to supplement collections by Auburn University and Alabama Power (If supplementing this data for shallow water sampling, include data in the report or in an appendix and discuss results). If selected monitoring sites were modified or changed, provide details on habitat and fish sampling differences observed between sites.
- On page 6, section 2.3 Sampling Methods in Appendix B of the Draft Aquatic Resources Report, include an explanation for why pulses were set at 25/sec (25 pps) for electrofishing sampling. Typically pulse rates of at least 60/s are used to collect scaled fishes, and 30 and below are used for non-scaled fishes such as catfish.
- On page 7, section 2.4 in Appendix B of the Draft Aquatic Resources Report, specify in the bioenergetics methods if data from individuals collected from all four sites will be pooled and/or analyzed for differences among fish species groups for each site.
- On page 10, section 3.3 in Appendix B of the Draft Aquatic Resources Report, ADCNR agrees with the assessment that an alternative site is necessary for the current upstream control site due to its closely linked dam operation characteristics. ADCNR requests input on site selection alternatives.
- On page 10, section 3.3 in Appendix B of the Draft Aquatic Resources Report, provide methods for the electromyogram (EMG) telemetry data portion on page 5, section 2.3 section of the report.
- On page 15, Table 1. in Appendix B of the Draft Aquatic Resources Report, ADCNR recommends including additional available temperature requirements of Redeye Bass (*Micropterus coosae*) and Shoal Bass (*Micropterus cataractae*). Including details on spawning substrate preference, age at sexual maturity and maximum life expectancy of each species in this table would be beneficial.
- On page 17, Table 3. in Appendix B of the Draft Aquatic Resources Report, provide common names column, and family column similar to page 7, Table 2-1 of the Draft Aquatic Resources Report, for consistency purposes. Include number collected for each species, instead of presence only. Include common metrics such as abundance, diversity, evenness, etc. and calculated for each study reach (For etc. ADCNR recommends including a similar basin calibrated IBI calculation for comparison to previous studies (Bowen *et al.* 1996; O'Neil *et al.* 2006; Irwin 2019)). Include a row indicating how many sampling trips the column data represents.

- On pages 22-30, Figures 2A-2C in Appendix B of the Draft Aquatic Resources Report, if temperature data is unavailable for a specific site, during a time period when other sites indicate high temperature variation, provide a caveat (blue shaded box with asterisks recognizing these specific key data range gaps) with an explanation for the absence. For example, Tailrace 2000 Temp Range is missing 10-12-month data, but Malone and Wadley show high variation during this period. An additional notable missing data gap was observed in Figure 2B Malone 2003, months 3-5 data. Determining when, how often and how far downstream tailrace high variation temperatures were detected will be important information to have when evaluating temperature effects on aquatic resources.
- On page 36, Figure 6 in Appendix B of the Draft Aquatic Resources Report, label sites accordingly to site descriptions in the text (For example, label Upper Tallapoosa point as Lee's Bridge. Indicate which locations were substituted and provide alternative location on map.

Thank you for the opportunity to comment on the R.L. Harris Hydroelectric Project relicensing filed Harris Project Initial Study Report (ISR) Draft Aquatic Resources Report. We look forward to continuing our cooperative efforts with the Federal Energy Regulatory Commission, Alabama Power, and other stakeholders during this process.

If you have any questions regarding these comments, please contact me at (334-353-7484) or Todd.Fobian@dcnr.alabama.gov.

Sincerely,

Todd Fobian

Environmental Affairs Supervisor

References:

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APC Harris Relicensing

From: Jack West <jwest@alabamarivers.org>
Sent: Friday, August 28, 2020 4:54 PM
To: Anderegg, Angela Segars; APC Harris Relicensing
Subject: Comments on Draft Aquatic Resources Study Report
Attachments: ARA Comments on Draft Aquatic Resources Study Report - 8.28.20.pdf

Hi Angie,

Please see attached for our comments on the Draft Aquatic Resources Study Report. If you could confirm receipt of these comments, I would appreciate it.

Have a great weekend,

--
Jack West, Esq.
Policy and Advocacy Director
Alabama Rivers Alliance
2014 6th Ave N, Suite 200
Birmingham, AL 35203
205-322-6395
www.alabamarivers.org [alabamarivers.org]

Celebrating more than 20 years of protecting Alabama's 132,000 miles of rivers and streams!

Alabama Rivers Alliance
Water Is Life

August 28, 2020

VIA EMAIL

Ms. Angie Anderegg
Harris Relicensing Project Manager
Alabama Power Company
600 North 18th Street
Birmingham, AL 35203

RE: Comments on Draft Aquatic Resources Study Report for R.L. Harris Hydroelectric Project (P-2628-065)

Dear Ms. Anderegg:

Please see below for the comments of Alabama Rivers Alliance on the Draft Aquatic Resources Study Report (the "Draft Report") submitted by Alabama Power Company ("Licensee") for the relicensing of R.L. Harris Dam (P-2628-065). Thank you for the opportunity to comment and for including these comments in the FERC correspondence record. If you have any questions or concerns, please contact me at jwest@alabamarivers.org or by phone at (205)- 322-6395.

I. Downstream Fish Population Study

As part of the Downstream Fish Population Study described in Appendix B to the Draft Study (Auburn University's Progress Report), an assessment of the entire fish population below Harris is being conducted, and a subset of four target species are being studied more intensively.[1] For the non-target species, it is unclear exactly what the assessment entail. Will more information on non-target species be reported other than the presence/absence data contained in Table 3 of the Progress Report? We encourage Licensee to provide the "comprehensive characterization of aquatic resources" described in the approved Aquatic Resources Study Plan with careful attention paid to both target and non-target species.[2]

Particularly because scant temperature data exists for two of the four target species (Tallapoosa Bass and Alabama Bass[3]) and a wide range in thermal minima and preferred temperatures has been

[1] Draft Aquatic Resources Study Report (Jul. 2020), Accession No. 20200728-5120, at 37.
[2] Final Aquatic Resources Study Plan (May 2019), Accession No. 20190513-5093, at 3.
[3] Due to the limited existing temperature data on Alabama Bass, a related species (Spotted Bass) is being used as a surrogate. However, Table 1 of Auburn's Progress Report currently only contains one source reporting temperature

reported in the literature for another target species (Channel Catfish[4]), we recommend a literature review of similar temperature data for at least some of the non-target species, including species the science indicates are most affected by Harris, such as Stippled Studfish, Blackspotted Topminnow, Black Redhorse, Blacktail Redhorse, Riffle Minnow, and Bullhead Minnow.[5]

Of the 38 fish species studied from 25 sites over a 12-year period and reported on in the U.S. Geological Survey's Open-File Report from 2019 ("USGS Report"), the four target species selected for the Downstream Fish Population Study are relatively more tolerant of flows from Harris, though still clearly impacted. Figures B6 and B7 of the USGS Report show the estimated flow regulation effects on species-specific persistence and colonization, and it is clear that the target species are all in at least the top 50 percent of species that can withstand the current flow regime.[6] For example, the following Figure B6 of the USGS Report shows flow regulation effects on persistence for 38 species with the four target species highlighted.

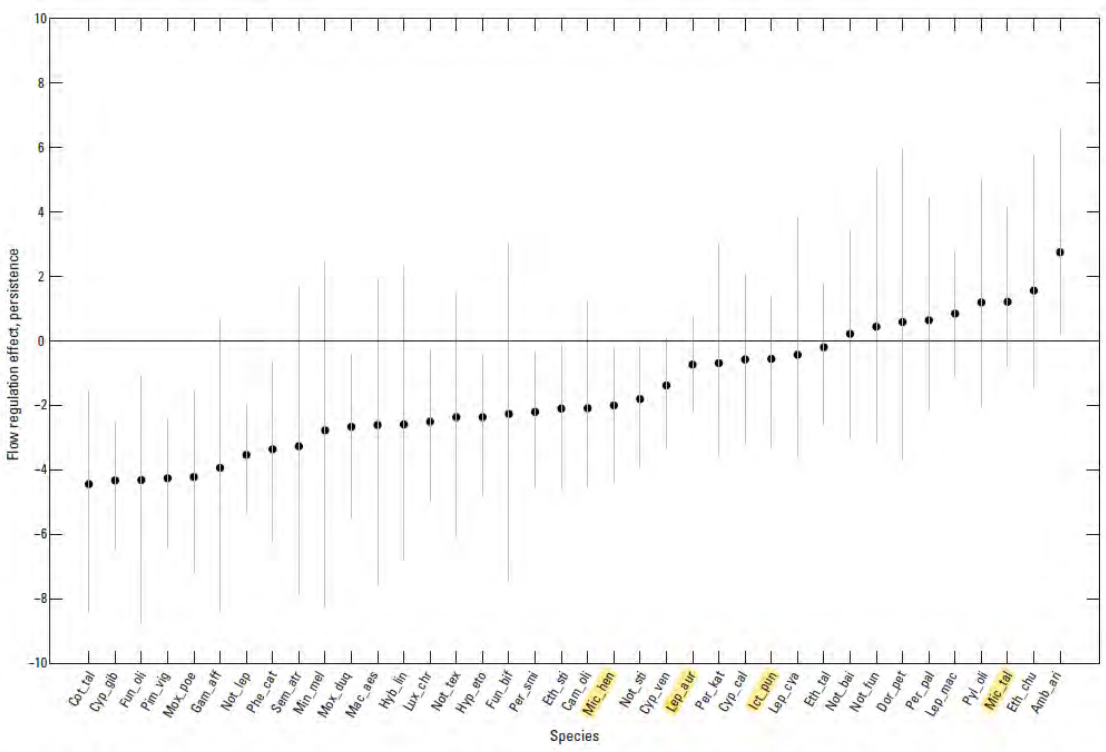

Figure B6. Estimated effects of location in the flow-regulated reach on species-specific persistence modeled using dynamic, multitaxa occupancy models applied to data for 25 sites in the Tallapoosa River system, 2005–16. Values are plotted on the logit scale and show 95-percent credible intervals. The horizontal line at 0 marks no effect; negative values indicate lower persistence in the flow-regulated reach compared to unregulated sites.

data on that surrogate species. More temperature may be uncovered as the study progresses, but for now, even the surrogate species does not have considerable data available.

[4] The temperature requirements data reported from two sources on Table 1 of Auburn's Progress Report show a very wide range in thermal minima (6.5 - 18°C) for Channel Catfish.

[5] Elise R. Irwin, *Adaptive Management of Flows from R.L. Harris Dam (Tallapoosa River, Alabama)—Stakeholder Process and Use of Biological Monitoring Data for Decision Making*, U.S. Geological Survey Open-File Report 2019-1026, Table B1 (at 31), Figure B6 (at 37), and Figure B7 (at 38).

[6] *Id*.

Certainly, the target species are game fish of particular interest to fishermen and recreationists on the Tallapoosa; however, they do not accurately represent the full spectrum of impacts suffered by fishes below Harris. As noted in the Aquatic Resources Study Plan, the goal of many stakeholders in this relicensing is to "protect and enhance the health of populations of game and non-game species of fish and other aquatic fauna."[7] To more comprehensively assess temperature and flow impacts on both game and non-game fishes, we recommend at least a literature review of temperature data for some of the more impacted species mentioned above.

II. Bioenergetics Modeling

A. *Sites of Fishes Used in Modeling*

Table 4 of Auburn University's Progress Report shows the number of each target species that have been run in static and swimming respirometry at either 10°C or 21°C, but it does not show which sites the fishes tested were collected from (regulated vs. unregulated sites). For instance, which sites were the five Channel Catfish shown as tested in the swimming respirometer in Table 4B collected from? To fully understand the effects of a Harris-sized release that combines increased flow with decreasing temperature, fishes from unregulated reaches that are not acclimated to the effects of Harris should be subjected to simulated conditions.

Just as the published bioenergetics model for a lentic population of Channel Catfish mentioned in Auburn's Progress Report may not be applicable to a model of the same species in a lotic environment, a bioenergetics model of Tallapoosa Bass from the Malone site, which experiences large fluctuations in daily flows, may be different than the model of Tallapoosa Bass in an unregulated reach that sees natural flows. To fully understand the energy-balance simulations provided by the bioenergetics model, it would be helpful to know if fishes from regulated or unregulated reaches were used to create the model.

B. *Temperatures Used for Static Respirometry*

As part of the intermittent flow static respirometry portion of the bioenergetics modeling, target fish species are being tested at two temperatures, 10°C and 21°C.[8] We seek to understand why those particular temperature values are being used for the static respirometry. The value of 10°C aligns with the lowest thermal minima of any target species on Table 1 of the Progress Report. The value of 21°C lines up with ideal spawning temps for two of the target species on Table 1.

The temperature range data provided by Licensee for 2000-2018 in Figure 2B regularly shows temperatures reaching 10°C in most every year. However, since this data is only for March through October of each year, with winter water temperatures not available, it is likely that lower water temperatures are present below Harris. The need for winter temperature data was noted by the Auburn research team as a take-home point during its June 2020 presentation to HAT-3.[9] Records

[7] Final Aquatic Resources Study Plan (May 2019), Accession No. 20190513-5093, at 3.
[8] Appendix B (Auburn University Progress Report) of Aquatic Resources Study Report (Jul. 2020), Accession No. 20200728-5120, at 8 [hereinafter "Auburn Progress Report"].
[9] *See* Attachment 2 (Consultation Record) to the Draft Aquatic Resources Study Report (Jul. 2020), Accession No. 20200728-5120, at 206 of full .pdf.

from the USGS gages at Wadley and Heflin shows winter water temperatures significantly below 10°C.[10] Additional winter temperature data may need to be taken into account as part of the static respirometry portion of the bioenergetics modeling. At a minimum, rationale for the temperature values chosen for the static respirometry would be helpful to stakeholders and should be included in the final report.

III. Alternative "Control" Sites for Fish Community Sampling

In Section 3.3 of the Auburn University Progress Report, the authors discuss the possibility of adding an alternative "control" site, either another site upstream of the Harris reservoir or an unregulated tributary. The current control site at Lee's Bridge "appears to be more closely linked to dam operations than previously thought," and that particular site is not yielding the requisite number of one of the target species, Tallapoosa Bass, to have a sufficient dataset. [11]

We fully support establishing one or more alternative control sites further upstream of Harris or, ideally, in the unregulated tributaries that are the least influenced by dam operations. An unaffected control site is necessary for the study, and if the Lee's Bridge site is not an appropriate control site, another should be identified and established.

IV. Addressing Thermal Pollution Problems

Based on extensive studies surveying a wide variety of fishes and macroinvertebrates below Harris, and based on the preliminary findings contained in the Draft Report, we believe enough evidence exists of the temperature impacts created by the hypolimnetic releases from Harris to justify beginning discussion of the options available to remedy the current thermal regime. The following is a brief summarization of some of the research pointing to ecological problems caused by low water temperatures:

- Nesting success for Redbreast Sunfish was negatively related to both peaking power generation and depressed water temperatures (Andress 2002).[12]
- Strongly fluctuating flows and decreased water temperatures negatively affect survival and early growth of age-0 Channel Catfish and Alabama Bass. Mortality was highest in treatments with decreased water temperatures, indicating that variation of the thermal regime could have significant impacts on survival of juvenile Channel Catfish and Alabama Bass. Daily growth rates were also lower in treatments with decreased water

[10] For instance, USGS data for the Heflin gage for November 2018 – March 2019 show water temperatures reaching below 6°C, and data from the USGS Wadley gage for that same period show water temperatures below 8°C.
[11] Auburn Progress Report, at 10.
[12] Andress, R. O., *Nest Survival of* Lepomis *Species in Regulated and Unregulated Rivers*, Master's Thesis, Auburn University (2002).

temperatures. Data also suggest that growth and survival may be impacted more by fluctuations in temperature versus flow variation (Goar 2013).[13]

- Improving flow and temperature criteria from Harris could enhance growth and hatch success of sport fishes (Irwin and Goar 2015).[14]
- Flow and temperature remain in a non-natural state in regulated reaches downstream of Harris, and the macroinvertebrate community in regulated reaches shows many dissimilarities to communities from unregulated river reaches (Irwin 2019).[15]

Most recently, Chapter B of the USGS Report specifically links cold temperatures to ecological impact: "Although it has long been recognized that temperatures are altered below R.L. Harris Dam, specific inference regarding the influence on biotic processes has been lacking until this study, which clearly related colonization rates (that is, recruitment of a species to a site) to increased thermal energy in the river."[16]

Thermal regimes and flows are intrinsically related, but at Harris, adjusting water temperatures may require a different set of infrastructure improvements than modifying flows due to the configuration of the intake structure. Licensee has stated it will examine options for temperature mitigation technologies once it has been determined that water temperature is a problem.[17] It will take time to analyze the cost-effectiveness of temperature control technologies such as floating intakes, multi-level intake structures, and different reservoir destratification approaches. We believe that delaying this discussion and assessment can only prolong the relicensing, and we encourage FERC and Licensee to turn to this topic while the Aquatic Resources Study progresses.

As the USGS Report notes, "changes in dam management have successfully mitigated for thermal effects,"[18] and thermal controls coupled with operational changes guided by adaptive management can bring about successful mitigation and ecological restoration on the Tallapoosa below Harris.

Sincerely,

Jack K. West

Jack K. West, Esq.
Alabama Rivers Alliance
Policy and Advocacy Director
2014 6th Avenue North
Suite 200
Birmingham, AL 3520

[13] Goar, T.P., *Effects of Hydrologic Variation and Water Temperatures on Early Growth and Survival of Selected Age-0 Fishes in the Tallapoosa River, Alabama*, Doctoral Dissertation (2013).
[14] Irwin, E.R. and T.P. Goar, *Spatial and Temporal Variation in Recruitment and Growth of Channel Catfish, Alabama Bass and Tallapoosa Bass in the Tallapoosa River and Associated Tributaries* (2015), U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS -116, Washington, D.C.
[15] Irwin, *supra* note 5,
[16] Irwin, *supra* note 5, at 47.
[17] Initial Study Report Meeting Summary (May 12, 2020), Accession No. 20200512-5083, at 26.
[18] Irwin, *supra* note 5, at 47.

Alabama Power

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Hydro Services 16N-8180
Birmingham, AL 35203
205 257 2251 tel
arsegars@southernco.com

August 31, 2020

VIA ELECTRONIC FILING

Project No. 2628-065
R.L. Harris Hydroelectric Project
Transmittal of the Final Operating Curve Change Feasibility Analysis Phase 1 Report

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

Dear Secretary Bose,

Alabama Power Company (Alabama Power) is the Federal Energy Regulatory Commission (FERC or Commission) licensee for the R.L. Harris Hydroelectric Project (Harris Project) (FERC No. 2628-065). On April 12, 2019, FERC issued its Study Plan Determination[1] (SPD) for the Harris Project, approving Alabama Power's ten relicensing studies with FERC modifications. On May 13, 2019, Alabama Power filed Final Study Plans to incorporate FERC's modifications and posted the Final Study Plans on the Harris relicensing website at www.harrisrelicensing.com.

Consistent with FERC's April 12, 2019 SPD, Alabama Power filed the Draft Operating Curve Change Feasibility Analysis Phase 1 Report (Draft Report) on April 10, 2020. Stakeholders were to submit their comments to Alabama Power on the Draft Report by June 11, 2020. Comments on the Draft Report were submitted by FERC staff and the Alabama Department of Conservation and Natural Resources. In addition, two stakeholders submitted comments regarding new studies on Project operations to compare pre-dam conditions to post-dam conditions, as well as incorporating "predictive data from the studies of climate change". These comments are included in the updated consultation record (May 2019 through July 2020) for this study (Attachment 1) and responses to these comments are provided in Attachment 2. The final Operating Curve Change Feasibility Analysis Phase 1 Report is contained in Attachment 3.[2]

[1] Accession No. 20190412-3000

[2] Please note that the look and format of Harris relicensing study reports has changed since submittal of the Draft Report; however, the content of the report has not changed except for the edits made based on stakeholder comments.

If there are any questions concerning this filing, please contact me at arsegars@southernco.com or 205-257-2251.

Sincerely,

Angie Anderegg
Harris Relicensing Project Manager

Attachment 1 – Operating Curve Change Feasibility Analysis Consultation Record (May 2019-August 2020)
Attachment 2 – Comments and Responses on the Draft Operating Curve Change Feasibility Analysis Phase 1 Report
Attachment 3 – Final Operating Curve Change Feasibility Analysis Phase 1 Report

cc: Harris Stakeholder List

HAT 3 - comments on draft reports

APC Harris Relicensing <g2apchr@southernco.com>

Mon 8/31/2020 2:57 PM

To: APC Harris Relicensing <harrisrelicensing@southernco.com>
Bcc: damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; lgallen@balch.com <lgallen@balch.com>; arsegars@southernco.com <arsegars@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; jefbaker@southernco.com <jefbaker@southernco.com>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; wmcampbell218@gmail.com <wmcampbell218@gmail.com>; jcarlee@southernco.com <jcarlee@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; kmo0025@auburn.edu <kmo0025@auburn.edu>; evan_collins@fws.gov <evan_collins@fws.gov>; kate.cosnahan@kleinschmidtgroup.com <kate.cosnahan@kleinschmidtgroup.com>; allan.creamer@ferc.gov <allan.creamer@ferc.gov>; robinwaldrep@yahoo.com <robinwaldrep@yahoo.com>; decker.chris@epa.gov <decker.chris@epa.gov>; devridr@auburn.edu <devridr@auburn.edu>; colin.dinken@kleinschmidtgroup.com <colin.dinken@kleinschmidtgroup.com>; jeff_duncan@nps.gov <jeff_duncan@nps.gov>; amanda.fleming@kleinschmidtgroup.com <amanda.fleming@kleinschmidtgroup.com>

4 attachments (2 MB)

2020-7-31 ADCNR Comment on Draft Downstream Aquatic Habitat Report.pdf; 2020-7-31 ARA Comments on Draft Aquatic Habitat Study Report.pdf; 2020-8-28 ADCNR Comments on Draft Aquatic Resources Report.pdf; 2020-8-28 ARA Comments on Draft Aquatic Resources Study Report.pdf;

HAT 3,

Attached are the comments we received on the Draft Downstream Aquatic Habitat Report and Draft Aquatic Resources Report. Our next HAT 3 meeting will be in Sept/Oct.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

STATE OF ALABAMA
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COMMISSIONER

EDWARD F. POOLOS
DEPUTY COMMISSIONER

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

CHARLES F. "CHUCK" SYKES
DIRECTOR

FRED R. HARDERS
ASSISTANT DIRECTOR

July 31, 2020

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

RE: Comments on the Harris Project Initial Study Report (ISR) Draft Downstream Aquatic Habitat Report for the R. L. Harris Hydroelectric Project (FERC No. 2628).

Dear Ms. Bose:

The Alabama Department of Natural Resources (ADCNR) Division of Wildlife and Freshwater Fisheries (WFF), has reviewed the Federal Energy Regulatory Commission (FERC) filed Harris Project Initial Study Report (ISR) Draft Downstream Aquatic Habitat Report in regards to the relicensing of R.L. Harris Hydroelectric Project No. 2628 and submits the following comments and recommendations for your consideration:

Draft Downstream Aquatic Habitat Report

- On page 1, section 1.1 Study Background of Draft Downstream Aquatic Habitat Report, it states "*Monitoring conducted since initiation of the Green Plan has indicated a positive fish community response due to increased shoal habitat availability (Irwin et al. 2011); however, there is little existing information characterizing the extent that the Green Plan has enhanced the aquatic habitat from Harris Dam downstream through Horseshoe Bend.*" Recent reporting of fish community monitoring indicates that fish densities in the regulated river downstream of Harris Dam have been depressed when compared to unregulated sites (Irwin *et al.* 2019).

- On page 2, section 1.1 Study Background of Draft Downstream Aquatic Habitat Report, change "*i.e.*" ("that is") should be changed to "*e.g.*" ("for example"). Details and design of a Modified Green Plan alternative are pending results and full evaluation from the Aquatic Resources Study. ADCNR is not in agreement that the alternative/modified Green Plan would only consider changing the time of day in which Green Plan pulses are released. ADCNR is in agreement that results from the Aquatic Resources Study are needed to design and recommend the alternative to be studied. Aquatic Resources Study results should be included in the footnote as a precursor to fully evaluate and recommend an alternative Green Plan to be modeled as a downstream release alternative for initial study report. ADCNR maintains its recommendation for a fourth alternative Modified Green

Plan be fully evaluated. ADCNR requests the opportunity to provide specific recommendations for the Modified Green Plan alternative after assessing the Aquatic Resources Study report.

- On page 2, section 1.1 Study Background of Draft Downstream Aquatic Habitat Report, change "*intened*" to "intended"

- On page 3, section 3.1 Mesohabitat Analysis of Draft Downstream Aquatic Habitat Report, provide the total river miles, in addition to hectares for each section (*e.g.*, Harris Dam to Malone (total river miles), Wadley to Bibby's Ferry (total river miles)

- On page 4, section 2.2 Water Level Monitoring of Draft Downstream Aquatic Habitat Report, it states "*data were lost from four level loggers (logger numbers 12, 14, 18, 20) (Figure 2-1)*" Provide a detailed explanation why data is unavailable from these four loggers (e.g. equipment malfunction or computer error). On page 6, Figure 2-1 note the four level loggers that had lost data with an asterisk and provide an explanation of the asterisks in the Figure description.

- On page 9, Figure 3-2 of Draft Downstream Aquatic Habitat Report, the image resolution is poor. If available provide higher resolution images for this data.

- On page 10, section 3.2.1 Study Period Hydrology and Climate, of Draft Downstream Aquatic Habitat Report, provide statistical analysis information documenting that significant differences occurred between the river flows in August/September 2019 and January/March 2020 compared to long-term averages.

- On page 14, Figure 3-6, of Draft Downstream Aquatic Habitat Report, provide standard deviation bars for the average daily water level.

- On page 14, of Draft Downstream Aquatic Habitat Report, provide an additional graph similar to Figure 3-6 that depicts the maximum daily water level fluctuation (Delta T) from May 2019 to April 2020. This graphic will better represent the unnatural, harsh conditions subjected to aquatic fauna daily below Harris Dam.

- On page 15, Table 3-3 Summary of Daily Water Level Fluctuations of Draft Downstream Aquatic Habitat Report, in addition to mean, minimum and maximum, provide the median (ft) for each site and standard deviation of the means.

- On page 16, Figure 3-7 of Draft Downstream Aquatic Habitat Report, provide standard deviation bars for the average hourly water level. Change the y-axis label from "*temperature*" to "water level".

- On page 17 Table 3-4 Summary of Hourly Water Level Fluctuations of Draft Downstream Aquatic Habitat Report, in addition to mean, minimum and maximum, provide the median (ft) for each site and standard deviation of the means.

- On page 18, section 3.2.4 Water Temperature of Draft Downstream Aquatic Habitat Report, temperature change data is primarily depicted in averages. It is important to remember that like dissolved oxygen declines, only one significant sudden temperature change event can stress or kill aquatic species. In addition, temperature highly influences dissolved oxygen levels in aquatic environments and significant dissolved oxygen declines and extreme temperature fluctuations can often coincide. For water temperature data, maximum and minimum values, and how long those values persist (hours) would better explain the fluctuation in temperature changes occurring in a regulated river. Providing detailed reporting of minimum and maximum values at hourly intervals

especially when water temperatures reach critical spawning ranges (15-25°C) in the spring are required to fully understand what is occurring. For example, if water temperature rise during the spring reaches a fish species thermal spawning cue but then suddenly decreases due to generation, disruption of spawning success can occur. Decreased and varied downstream water temperatures, as a result of project operations, can negatively impact downstream aquatic fauna. The impacts of water temperatures on the aquatic environment have been well-documented in peer-reviewed literature (Travnichek and Maceina 1994; Bowen *et al.* 1998; Andress 2002, Craven *et al.* 2010; Irwin *et al.* 2010; Goar 2013; Early and Sammons 2015). A component of varied downstream water temperatures downstream of regulated waterways, includes rapid sudden changes in water temperatures. These rapid changes can cause serious stress responses in some fishes in captivity and in the wild that are otherwise healthy, even leading to mortality (Jenkins et al. 2004). Limits of tolerance and ability to tolerate changes in temperature are influenced by the previous thermal histories of individual fish as well as species characteristics (Carmichael et al. 1984). Sudden temperature changes of greater magnitude, either upward or downward, are very stressful and should be avoided. The magnitude of change that aquatic species can tolerate will depend on the species, the life history stage in consideration, previous thermal history, and the initial conditions. The literature-based temperature requirement for fish information provided by the ongoing Aquatic Resources Study should provide useful details on various Tallapoosa River system fish species temperature tolerances. In addition, the comparison of temperature data in regulated and unregulated portions of the study area in the ongoing Aquatic Resources Study should provide additional insight into this topic. The Aquatic Resources Study results in conjunction with downstream flow data, water quality data and downstream habitat data from the initial study reports must be fully evaluated to assess potential impacts to the aquatic resources of the system. For these reasons it is important to provide median, minimum and maximum daily and hourly water temperature fluctuations in this section, in addition to the provided means. Median site data should be included into Tables 3-5 and 3-6. Provide Figure line plots of 15-minute water temperature data collected for each site, similar to page 29, Figure 4-2 line plots of 15-minute water temperature data collected by ADEM on the Tallapoosa River of the Draft Water Quality Study Report.

- On page 18, section 3.2.4 Water Temperature of Draft Downstream Aquatic Habitat Report, in the discussion on water temperature, explain how the temperature change range is lower at the dam, in comparison to sites 1 and 3 miles downstream. Explain what processes might cool the water moving downstream before warming them again.

- On Page 19, Figure 3-8 of Draft Downstream Aquatic Habitat Report, provide standard deviation bars for the average monthly temperature data points.

- On page 20, Figure 3-9 of Draft Downstream Aquatic Habitat Report, provide standard deviation bars for the average daily temperature fluctuation.

- On page 20, of Draft Downstream Aquatic Habitat Report, provide an additional graph similar to Figure 3-9 that depicts the maximum daily water temperature fluctuation (Delta T) from May 2019 to April 2020. This graphic will better represent the unnatural, harsh conditions subjected to aquatic fauna daily below Harris Dam.

- On page 21, Table 3-5 of Draft Downstream Aquatic Habitat Report, in addition to mean, minimum and maximum provided, provide the median (°C) for each site and standard deviation of the means.

- On page 22, Figure 3-10 of Draft Downstream Aquatic Habitat Report, provide standard deviation bars for the average hourly temperature fluctuation.

- On page 22, of Draft Downstream Aquatic Habitat Report, provide an additional graph similar to Figure 3-10 that depicts the maximum hourly water temperature fluctuation (Delta T) from May 2019 to April 2020. This graphic will better represent the unnatural, harsh conditions subjected to aquatic fauna frequently below Harris Dam.

- On page 23, Table 3-6 of Draft Downstream Aquatic Habitat Report, provide map site numbers from Figure 2-1, in addition to the included miles below Harris dam.

- On page 23, Table 3-6 of Draft Downstream Aquatic Habitat Report, in addition to mean, minimum and maximum numbers provided, provide the median (°C) for each site and standard deviation of the means.

- On page 25, section 3.3 Wetted Perimeter of Draft Downstream Aquatic Habitat Report, median is used to evaluate seasonal analysis of wetted perimeter. Provide mean wetted perimeter in addition to median.

- On page 32, section 4.0 Discussion and Conclusions of Draft Downstream Aquatic Habitat Report, it states "*Results indicate that, on average, the largest daily water level fluctuations occur in the first seven miles below Harris Dam.*" Provide the metric value you are using to separate out the first seven miles of sites from the other sites downstream to make this statement. There are average daily water level changes over 3.0 ft occurring at river mile 15 and over 2.0 ft at river mile 28.2. A metric should be selected, utilized and stated for comparisons. Ideally this metric should be a point equivalent to the historical mean or median daily water level change of the unregulated natural flow regime for that stretch of river being analyzed.

- On page 32, section 4.0 Discussion and Conclusions of Draft Downstream Aquatic Habitat Report, it states "*Results indicate that the largest daily water temperature fluctuations occur in the first seven miles below Harris Dam.*" Provide the metric value you are using to separate out the first seven miles of sites from the other sites downstream to make this statement. There are hourly water temperatures changes over 4°C occurring at river mile 19.5. A metric should be selected, utilized and stated for comparisons. Ideally this metric should be for a maximum hourly change in addition to percent of time this maximum is exceeded (See ADCNR section 3.2.4 Water Temperature comments, discuss sites with separation metric points of 2°C and 4°C maximum temperature change per hour).

- On page 32, section 4.0 Discussion and Conclusions of Draft Downstream Aquatic Habitat Report, it states "*It is also worth noting that river flows during August and September of 2019, typically the warmest months of the year, were well below normal which could have resulted in greater daily and hourly temperature fluctuations than normal*." This statement as presented does not seem accurate. Explain how a warm water unregulated river, without a dam, would decrease in temperature as it moves downstream. In many instances rainwater (runoff) in the summer will warm streams and tributaries, thus warm runoff increases temperatures in the creeks in some instances, particularly during afternoon storms when ambient air temperatures have peaked for the day. Additionally, since the Harris dam discharge is below the surface water at 30-40 feet deep, changes to the stratification of the reservoir, would be more pronounced in higher flow, than lower flow years. Reservoir stratification is affected more by higher inflows, than low inflows, especially when discharge occurs from the metalimnion or hypolimnion. Downstream temperature changes should not be significantly different if a thermocline is present, which occurs annually at Harris Reservoir, and persists into September. The statement above requires additional explanation including mechanisms that would cause greater hourly temperature fluctuations than normal during low flow. Provide a reference to a Figure in document illustrating river flows during this time period and provide a specific instance that supports this statement. Clarify whether this statement

is referring to tailrace flows or tributary inflows to the tailrace. Significant differences between large tributaries and tailrace temperatures even during atypical river flow scenarios in warmer months may be indications that the regulated reach is significantly altered compared to the natural temperature regime of the river system. Under a new FERC license agreement, R.L. Harris Hydroelectric Project will operate under various weather conditions throughout the issuance period of the license. We maintain our request that when evaluating impacts on downstream water quality (including water temperature) due to project operations, that methods to mitigate the unnatural water temperature variability be fully assessed to minimize impacts to the aquatic resources.

- On page 3, Task 2 – Water Level, Channel Profile and Discharge Data Collection and Analysis of the Downstream Aquatic Habitat Study Plan, it specifies using Acoustic Doppler Current Profilers (ADCP) to collect bed elevation and flow data. The data from the ADCP's is not mentioned in the study report. If data from these profilers will be used, include in the report. If data from these profilers will not be used, include an explanation for the deviation from the Study Plan.

Thank you for the opportunity to comment on the R.L. Harris Hydroelectric Project relicensing filed Harris Project Initial Study Report (ISR) Draft Downstream Aquatic Habitat Report. We look forward to continuing our cooperative efforts with the Federal Energy Regulatory Commission, Alabama Power, and other stakeholders during this process.

If you have any questions regarding these comments, please contact me at (334-353-7484) or Todd.Fobian@dcnr.alabama.gov.

Sincerely,

Todd Fobian

Environmental Affairs Supervisor

References:

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Alabama Rivers Alliance
Water Is Life

July 30, 2020

VIA EMAIL

Ms. Angie Anderegg
Harris Relicensing Project Manager
Alabama Power Company
600 North 18th Street
Birmingham, AL 35203

RE: Comments on Draft Downstream Aquatic Habitat Study Report for R.L. Harris Hydroelectric Project (P-2628-065)

Dear Ms. Anderegg:

Below are the preliminary comments of Alabama Rivers Alliance on the Draft Downstream Aquatic Habitat Study Report filed by Alabama Power.[1] The draft Aquatic Resources Study Report was filed earlier this week, and we will be commenting upon that study as well. Since the two studies are particularly related, we may include additional comments on the draft Aquatic Habitat study report in our comments to the Aquatic Resources study report. Thank you for including these comments in the FERC correspondence record.

I. Description of Fish Population Response to Green Plan

The Draft Downstream Aquatic Habitat Study Report describes the voluntary management efforts of the Green Plan as beneficial to the fish population below Harris: "Monitoring conducted since initiation of the Green Plan has indicated a positive fish community response due to increased shoal habitat availability." This statement mischaracterizes the monitoring results from 2005-2010 reported in Irwin et al. 2011[2] (which it cites for this proposition) and ignores the most recent published research on the topic. Instead, Licensee conflates increased habitat availability with actual fish population response.

In fact, the post-Green Plan monitoring from 2005-2010 reported by Irwin et al. 2011 and cited by Licensee in the draft study report flatly refuses to link the amount of increased habitat created by the Green Plan with fish population response:

[1] Draft Downstream Aquatic Habitat Study Report (Jun. 2020), Accession No. 20200630-5200.
[2] Elise R. Irwin et al., *Adaptive Management and Monitoring for Restoration and Faunal Recolonization of Tallapoosa River Shoal Habitats* (2011), Alabama Cooperative Fish and Wildlife Research Unit Report 2011-1.

> "Analysis of differences in hydrology that provide critical habitat for shoal dwelling species during pre- and post-management periods indicate significant increases in the amount of time quality habitat conditions were met (average gain of 30 d/season). *However, linking vital rates of fish populations to habitat variability will require more specific habitat measurement and modeling in relation to managed flow features*."[3]

Irwin et al. 2011 does report the Green Plan tentatively has been successful for the reestablishment of one species (the Alabama shiner),[4] but it details steep declines in occupancy for other species, such as the Tallapoosa sculpin, black redhorse, and blacktail redhorse.[5]

Moreover, the most recent relevant scientific literature from last year that incorporates longer-term biological monitoring also refutes Licensee's statement about positive fish response contained in the draft study report. The USGS Open-File Report 2019-1026, *Adaptive Management of Flows from R.L. Harris Dam (Tallapoosa River, Alabama)—Stakeholder Process and Use of Biological Monitoring Data for Decision Making*, assesses persistence and colonization for 38 fish species over a 12-year period.[6] In contrast to Licensee's draft report, the 2019 Open-File Report finds that quite the opposite is true—that the Green Plan has *not* resulted in a positive fish response.

Chapter B of the 2019 Open-File Report focuses on the long-term occupancy of fishes above and below Harris. It clearly states that any increase in shoal habitat provided by the Green Plan has not translated into population benefits: "Irwin and others (2011) reported an increase in shoal habitat persistence associated with the Green Plan; *however, positive population responses have not ensued*."[7] Rather, the long-term data in the 2019 Open-File Report "provide evidence that suggests broadscale negative influences of the dam on species persistence and colonization parameters. Specifically, generation frequency and cool thermal regimes negatively affected fish persistence and colonization, respectively."[8]

In assessing the relationship between aquatic habitat, fish population health, and downstream release alternatives (the Green Plan, alternative pulsing regimes, various minimum flows), Licensee, FERC, and stakeholders should not start from the misleading conclusion that the Green Plan generally benefitted fish populations downstream of Harris. This statement should be struck from the draft report and an accurate description of post-Green Plan monitoring that takes into account the most recent published scientific materials inserted in its place.

II. Use of Wetted Perimeter Metric to Gauge Aquatic Health

The Draft Downstream Aquatic Habitat Study Report uses "wetted perimeter" (the portion of the riverbed and banks in contact with the water in the channel) as a fundamental metric in comparing

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[3] *Id*. at 3 (emphasis added).
[4] *Id*. at 20-21.
[5] *Id*. at 14-15.
[6] Elise R. Irwin, *Adaptive Management of Flows from R.L. Harris Dam (Tallapoosa River, Alabama)—Stakeholder Process and Use of Biological Monitoring Data for Decision Making*, U.S. Geological Survey Open-File Report 2019-1026.
[7] *Id.* at 48 (emphasis added).
[8] *Id*.

habitat availability among release scenarios. Licensee's HEC-RAS model outputs wetted perimeter values for simulations of the different flow scenarios, the preliminary conclusions being that the Green Plan created some gains in wetted perimeter over pre-Green Plan management, and that a 150cfs continuous minimum flow would result in further increases of wetted perimeter.[9]

We caution against using wetted perimeter as a guide-star metric to measure aquatic health. Certainly, wetted perimeter and habitat duration should be evaluated and considered as part of this habitat study, but as described in the section above, over a decade of monitoring since implementation of the Green Plan has shown that an increase in quality habitat availability (made possible by increased wetted perimeter) has not led to a positive population response from fishes below the dam. Other variables, including stability of flows, thermal regime, and the availability of spawning windows must be considered along with habitat availability.

The independent science simply does not connect increased habitat availability or wetted perimeter in the Tallapoosa River below Harris with increases in colonization, persistence, or recruitment of fishes, and when managing for conservation and restoration of fish species, FERC, Licensee, and stakeholders would do well not to believe one will necessarily lead to the other. The draft report should fully acknowledge what the science reveals and seek to understand through the other studies what additional factors may be contributing to the lack of fish species recovery.

Sincerely,

Jack K. West

Jack K. West, Esq.

Alabama Rivers Alliance
Policy and Advocacy Director
2014 6th Avenue North
Suite 200
Birmingham, AL 35203

[9] Draft Downstream Aquatic Habitat Study Report (Jun. 2020), Accession No. 20200630-5200, at 24.

STATE OF ALABAMA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
WILDLIFE AND FRESHWATER FISHERIES DIVISION

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

August 28, 2020

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

RE: Comments on the Harris Project Initial Study Report (ISR) Draft Aquatic Resources Report for the R. L. Harris Hydroelectric Project (FERC No. 2628).

Dear Ms. Bose:

The Alabama Department of Natural Resources (ADCNR) Division of Wildlife and Freshwater Fisheries (WFF), has reviewed the Federal Energy Regulatory Commission (FERC) filed Harris Project Initial Study Report (ISR) Draft Aquatic Resources Report in regards to the relicensing of R.L. Harris Hydroelectric Project No. 2628 and submits the following comments and recommendations for your consideration:

Draft Aquatic Resources Report

- On page 2, section 1.1 Study Background of the Draft Aquatic Resources Report, it states "*Alabama Power prepared this draft report to support the relicensing process and to fulfill the requirements of the FERC-approved Aquatic Resources Study Plan. The draft report is comprised of two components: 1) results of the desktop assessment used to compile the possible effects of dam operations and 2) progress and results to date of Auburn University's research on the literature requirements of target species located in the Tallapoosa River below Harris Dam, an analysis of existing temperature data below Harris Dam, fish community sampling and evaluation, and respirometry tests and bioenergetics modeling of fish.*" With some of the requirements from the FERC approved Aquatic Resources Study Plan completed and nearly half of the requirements remaining incomplete, it would be beneficial to provide a summary table or paragraph indicating which requirement components from the Study Plan are completed and which requirements will be provided in the Final Aquatic Resources Report. If modifications to any FERC approved Aquatic Resources Study Plan requirements were made, provide a notification and explanation in the report for the modifications. If any of the requirements are provided in one of the other Study Reports, provide a reference to the material or add to the appendix of the report. The Study Plan indicates that the bioenergetics model requirement would be released April 2021 following the Draft Report and are excluded from the following list. Remaining FERC approved Aquatic Resources Study Plan requirements ADCNR identified include:

  - Identify aquatic species and populations whose presence and/or sustainability within the Study Area may have been affected by the Harris Project. Describe the factors affecting their presence and sustainability.
  - Comparison of Temperature Data in Unregulated Portions of the Study Area (i.e., Newell and Heflin).
  - Results of the temperature data analysis will be compared to the temperature requirements of target species (see Section 4.2.1) to determine how those species may be affected by baseline operations.
  - Auburn University and Alabama Power will perform field sampling to characterize the current fishery in shallow water habitats in the Study Area. Wadable, shallow water habitats will be sampled using a standardized protocol known as the 30+2 method (O'Neil et al. 2006). Data from ADEM's 2018 fish surveys in the Tallapoosa River may be used to supplement collections by Auburn University and Alabama Power. (If supplementing this data for shallow water sampling include data in the report or in an appendix and discuss results).
  - Deep and shallow fish survey sampling should include common metrics such as abundance, diversity, evenness, etc. and calculated for each study reach (Recommend a similar basin calibrated IBI calculation for comparison to previous studies (Bowen *et al.* 1996; O'Neil *et al.* 2006; Irwin 2019)).

- Throughout the Draft Aquatic Resources Report, utilize one term to represent Harris Reservoir for consistency purposes (For example, different terms identified were, Harris Reservoir, Harris Lake, Lake Harris). In addition, when discussing unregulated sites make sure to specify if they are upstream or downstream of Harris Reservoir to assist with site orientation within the Tallapoosa River system.
- On page 1, section 1.1 Study Background of the Draft Aquatic Resources Report, it states "*Monitoring conducted since initiation of the Green Plan has indicated a positive fish community response and increased shoal habitat availability (Irwin et al.* 2011); *however, little information exists characterizing the extent that the Green Plan has enhanced the aquatic habitat from Harris Dam downstream through Horseshoe Bend.*" Recent reporting of fish community monitoring indicates that fish densities in the regulated river downstream of Harris Dam have been depressed when compared to unregulated sites (Irwin et al. 2019).
- On page 5, section 2.3.1 Tallapoosa River Basin of the Draft Aquatic Resources Report, it states, "*Three of these, Gulf Sturgeon (Acipenser oxyrinchus desotoi), Alabama Sturgeon (Scaphiryhnchus suttkusi), and Alabama Shad (Alosa alabamae) are considered extirpated from the TRB.*" Change to "Three of these, Gulf Sturgeon (*Acipenser oxyrinchus desotoi*), Alabama Sturgeon (*Scaphiryhnchus suttkusi*), and Alabama Shad (*Alosa alabamae*) are hypothesized to be extirpated from the TRB due to dams on the Alabama River main stem restricting upstream migration and movement for spawning (Freeman *et al.* 2005). Ongoing studies by ADCNR are utilizing traditional collection methods in addition to environmental DNA detection to determine species status in the Mobile Basin. This research will assist in determining the extent and potential for sturgeon and shad to pass through navigational locks." For Alabama Sturgeon, USFWS concluded at the time of listing (74 FR 26488 26510; June 2, 2009) that the lower Coosa and Tallapoosa Rivers were not occupied at the time of listing. Results of recent collections of environmental DNA (eDNA) from water samples have detected the species in the Alabama River from below Robert F. Henry. Although most eDNA detections were from areas below the first passage barrier on the Alabama River (Claiborne lock and dam), there were eDNA detections past two passage barriers (Pfleger *et al.* 2016). The last specimen was collected from the Alabama River on April 3, 2007 (Rider *et al.* 2011). Another specimen was observed below Robert F. Henry Lock and Dam on April 23, 2009; however, ADCNR biologists were unable to net the fish (Rider *et al.* 2010). Gulf Sturgeon at Claiborne Lock and Dam were detected both by eDNA and by sonic tag (Rider et al. 2016) and by eDNA below Robert F. Henry (Pfleger *et al.* 2016). Only two individuals of Alabama Shad have been caught in the Alabama River since impoundment, one in 1993 below Claiborne lock and dam

and one in 1995 below Miller's Ferry lock and dam. The last specimen of Alabama Shad to be captured from the Coosa River was in 1966 (Boschung, 1992), and no Alabama Shad have been caught in the Tallapoosa River in the last decade (Freeman et al., 2001). Since 2010, the US Army Corps of Engineers in cooperation with ADCNR has been conducting voluntary conservation locking measures to provide potential fish passage during the spring spawning season at Claiborne and Millers Ferry lock and dam. The detection of Alabama and Gulf sturgeon eDNA above these hydro projects could indicate the potential for fish to pass through these navigation locks. If fish passage occurred at Robert F. Henry dam similarly to other lower lock and dams, sturgeon and shad could potentially gain access to the Lower TRB. However, further study is needed to determine the correct path of passage and to what extent.

- On page 5, section 2.3.1 Tallapoosa River Basin of the Draft Aquatic Resources Report, it states "*An estimated 15 mussel species occur or have occurred within the TRB (Table 2-2).*" Johnson *et al.* (2002) results state, "Twenty unionid mussel species and one species of corbiculid clam, *Corbicula fluminea*, were collected within the Tallapoosa River drainage during this survey (Table 1). This, combined with an additional 12 species that have been documented historically (Table 1) yields a total of 33 bivalve species." Williams *et al*. (2008), reports 36 total mussel taxa from the Tallapoosa River system (page 46, Table 4.2 of Williams *et al.* 2008). In addition to these reports, The University of Michigan Museum online records database contain an Alabama Hickorynut (*Obovaria unicolor*) specimen (UMMZ 107539) record from the Tallapoosa River, Randolph County, B. Walker Collection, that is not included in Johnson *et al.* 1997 or Williams *et al.* 2008 historical species list and should be added, pending current museum verification inquiry. Update the historical mussel species list, basin occurrence, and state/federal conservation status, accordingly in this summary section and Table 2-2. In addition to State Species of Greatest Conservation Need (GCN) status, provide if any species are state protected in Alabama Regulations 2019-2020 Invertebrate Species Regulation 220_2_.98 handbook or are currently under review for federal listing by United States Fish and Wildlife Service (USFWS) with substantial 90 day findings. ADCNR has records of 40 mussel species based on current and historical records from the Tallapoosa River system (includes separating Alabama Orb (*Cyclonaias asperata*) and Tallapoosa Orb (*Cyclonaias archeri*) and adding *O. unicolor*) (Gangloff and Feminella 2007; Gangloff *et al.* 2009; Johnson 1997, Johnson *et al.* 2002; Singer and Gangloff 2011; Storey *et al.* 2003; Williams *et al.* 2008). Change title to Freshwater Mussel Species of the Tallapoosa River Basin or add aquatic gastropods to Table 2-2 with no title change. If any mollusk surveys have been completed for the Threatened and Endangered Species Harris relicensing project, include and discuss results in the Final Aquatic Resources Report. Tributaries and mainstem river sections surveyed for the project should indicate any mollusk reduction or loss of species presence and abundance observed compared to Johnson (1997) or other notable mollusk survey studies. ADCNR Natural Heritage Database includes records of Alabama Spike (*Elliptio arca*) from Sandy Creek an eastern tributary to the Middle Tallapoosa in 2002 (Singer and Gangloff 2011). This record should be included in the Final Aquatic Resources Report.
- On page 5, section 2.3.1 Tallapoosa River Basin of the Draft Aquatic Resources Report it states, "*One species, the Georgia Pigtoe (Pleurobema hanleyianum), is considered extirpated from the TRB.*" This information appears to be inaccurate, Johnson 1997; Johnson *et al.* 2002; Williams *et al.* 2008 and November 11, 2010 USFWS Georgia Pigtoe (*Pleurobema hanleyianum*) federal register listing (75 FR 67512 67550) do not include the Tallapoosa River as a known historical river system for Georgia Pigtoe. Two Pleurobema species with historical records in the Tallapoosa River system include Southern Clubshell (*Pleurobema decisum*) and Ovate Clubshell (*Pleurobema perovatum*). Provide a correction or information supporting historical records of Georgia Pigtoe (*Pleurobema hanleyianum*) in the Tallapoosa River system.
- On page 5, section 2.3.1 Tallapoosa River Basin of the Draft Aquatic Resources Report, provide paragraph discussing aquatic gastropod species within the Tallapoosa River System. In addition, provide a similar table to Table 2-2 for aquatic gastropods or add aquatic gastropods to Table 2-2.

Utilizing Johnson (1997) and ADCNR Natural Heritage Database records for this list in addition to any other recent studies or collections is recommended.

- On page 5, section 2.3.1 Tallapoosa River Basin of the Draft Aquatic Resources Report it states, "*An estimated nine crustacean species in the Upper and Middle TRB have been reported in ADCNR's Natural Heritage Database (Table 2-3).*" Eleven species are reported in Johnson (1997). Include this study information and provide explanations for any discrepancies between the different numbers and species lists (basin location may account for variations). Update species lists accordingly to reflect findings. In addition to State GCN status, provide if any species are state protected in Alabama Regulations 2019-2020 Invertebrate Species Regulation 220_2_.98 handbook.
- On page 7, Table 2-1 of the Draft Aquatic Resources Report add a sub basin occurrence column similar to the invertebrate species Tables 2-2 through 2-4 for consistency and further examination. For example, ADCNR is only aware of Lepisosteidae records in the lower Tallapoosa basin of the system. This information would be useful in a table format when evaluating Harris studies. In addition, separating conservation status columns into federal conservation status (including currently under review for federal listing by USFWS with substantial 90-day findings), state GCN status and state protected in Alabama Regulations 2019-2020 Protected Nongame Species Regulation 220_2_.92 (a).
- On page 7, Table 2-1 of the Draft Aquatic Resources Report add new species identified in the Auburn University fish sampling list from Appendix B page 7 Results Section. These additions include, Blueback Herring (*Alosa aestivalis*) and Snail Bullhead (*Ameiurus brunneus*).
- On page 18, section 2.3.2, of the Draft Aquatic Resources Report, remove, "*Unfortunately, widespread negative attitudes toward the…*" and replace with "Evidence of anglers not harvesting small bass under 13 inches reduced the effect of the imposed limit"
- On page 18, section 2.3.2, of the Draft Aquatic Resources Report, it states, "*Black Crappie were found in large numbers in the Harris Reservoir and exhibited much better growth and size structure than crappie (Pomoxis spp.) in the river, which was attributed to more abundant habitat and forage availability in the reservoir (Hartline et al. 2018).*" Provide where "in the river" is referring to.
- On page 18, section 2.3.2, of the Draft Aquatic Resources Report, include a statement specifying that ADCNR standardized sampling includes only a few popular game species at Harris Reservoir. It is important to note that other popular fisheries exist in Harris Reservoir, such as Flathead Catfish (*Pylodictis olivaris*), Blue Catfish (*Ictalurus furcatus*), Channel Catfish (*Ictalurus punctatus*), Redear Sunfish (*Lepomis microlophus*), Bluegill Sunfish (*Lepomis macrochirus*), and White Bass (*Morone chrysops*).
- On page 19, section 2.3.2, of the Draft Aquatic Resources Report, change *"…stable or a slightly rising elevation for a period of 14 days to increase the spawning success of these species.*" to "…stable or a slightly rising elevation for a period of 14 days to provide improved conditions for spawning and hatching success."
- On page 19, section 2.3.3, of the Draft Aquatic Resources Report, it states, "*The following is a chronologically ordered synopsis of available information pertaining to aquatic resources in the Tallapoosa River downstream of Harris Dam.*" This statement needs to be reworded to state, "The following is a chronologically ordered synopsis based on Alabama Power Company's (APC) interpretation of selected relevant and historic information pertaining to aquatic resources in the Tallapoosa River System. Since the APC synopsis provided has not been through a scientific journal peer review process, there is a potential for bias or misinterpretation of the author(s) specific findings or conclusions." ADCNR has significant issues regarding how some of the studies were represented. In addition to an APC synopsis provided, if a peer-reviewed technical journal, master's thesis, doctoral dissertation or unpublished report discussed in this section include abstracts, include in an appendix of the Final Aquatic Resources Report, similar to page 20 of section 4.0 Publications in Appendix E, Volume 1 of the June 2018 R.L. Harris Hydroelectric Project Pre-Application Document or within the report prior to the APC synopsis. We reserve the right to continue providing comments on the included synopses and provide additional sources of

information to include for consideration during the continued Final Aquatic Resources Report commenting and adaptive management plan process.

- On page 21, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Travnicheck and Maceina (1994) APC synopsis, provide a few statements regarding details of which specific species of catostomid (suckers) decreased in relative abundance.
- On page 21, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Johnson (1997) APC synopsis, add that in the Upper Tallapoosa tributaries Alabama Spike (*Elliptio arca*) was collected.
- On page 22, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Johnson (1997) overview summary, "Southern Rainbow (*Villosa iris*)" should be changed to "Southern Rainbow (*Villosa vibex*)".
- On page 22, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Johnson (1997) APC synopsis, there are several aquatic gastropod species missing from this summary that are listed in the paper. Update missing species provided in Johnson (1997). ADCNR has records of eight species of aquatic gastropods historically present in the TRB, minus *Physella sp*. species. Physella taxonomy is currently undetermined. There could be one species or up to three species of Physella present in the TRB, pending further investigation. Rock Fossaria (*Fossaria modicella*) is now *Galba modicella*. Any Fossaria that were found in Johnson (1997) are recognized as *G. modicella*. Pointed Campeloma (*Campeloma decisum*) does not occur in the Mobile Basin. Any Campeloma that were found in Johnson (1997) are recognized as Cylinder Campeloma (*Campeloma regulare*). Including specific tributary names of collections is recommended.
- On page 23, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Freeman *et al.* (2001) APC synopsis, provide the ten species investigated in this study. Include in the overview summary, that during summer, lower and more stable flows occurred at the regulated site which favored later spawning fish. Five of six species that spawn in the spring were less abundant at flow regulated sites compared to the upper unregulated sites.
- On page 23, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Irwin and Belcher (1999) APC synopsis, include how many Flathead Catfish were tagged and stocked and additional potential causes for why no tagged Flathead Catfish were reported.
- On page 24, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Sakaris (2006) APC synopsis, remove "surprisingly".
- On page 25, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Irwin *et al.* (2011) APC synopsis, provide IBI score overviews similar to Bowen *et al.* (1996) summary section. Remove one of the "be" after "Lipstick Darter may be be maintaining" and add Green Plan prior to "flow regulation" in this sentence.
- On page 26, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Irwin *et al.* (2011) APC synopsis, reword, "…but Tallapoosa Darter seemed to be reproducing and faring well downstream of the dam." excluding "seemed to be" and "faring well".
- On page 27, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Earley (2012) APC synopsis, it states, "Cortisol had no substantial effect of growth…" It is important to remember that no substantial effect does not correlate to no effect. Physiological stressors for both species showed altered stress response at the regulated site on the Tallapoosa River compared to the reference site. This difference was possibly due to the non-natural flow regime measured at the regulated site.
- On page 27, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Goar (2013) APC synopsis, rewrite overview to state, "Age-0 Redbreast Sunfish (*Lepomis auratus*) were collected at two regulated flow sites on the Tallapoosa River downstream of R.L. Harris Dam, at one unregulated flow site above Harris Reservoir, and an unregulated tributary stream of the Tallapoosa River downstream of R.L. Harris Dam. Overall daily growth rate and incremental growth rate varied among years and was higher at regulated sites than unregulated sites, although overall model fit was modest. Hatch frequency was higher and occurred earlier in unregulated sites

compared to hatching in regulated sections. In laboratory experiments, results suggested that simulated high flows and decreased water temperatures similar to those measured on the regulated portion of the Tallapoosa River negatively affect daily growth rates and survival of Channel Catfish (*Ictalurus punctatus*) and Alabama Bass (*Micropterus henshalli*). Mortality was highest and daily growth lower in treatments with decreased water temperatures. Older fish displayed higher daily growth rates and decreased mortality and were not as susceptible to the negative effects of simulated high flows and lower temperatures. These data suggest that growth and survival may be impacted more by fluctuations in temperature than flow."

- On page 28, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Sammons *et al.* (2013) APC synopsis, include statement that the short lifespan of Tallapoosa Bass "may have hindered the ability of residual analysis to identify relationships between hydrology and recruitment of this species."
- On page 28, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Sammons *et al*. (2013) APC synopsis, regarding rainfall and flows, Sammons et al. (2013) stated based on observations during sampling "that catch rates of age-0 fish of all three species was higher in the lower and upper reaches than in the middle reach, indicating that recruitment at the population-level is likely impacted in the middle reach."
- On page 29, Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Gerken (2015) APC synopsis, provide the ten species investigated in this study. Include in the overview summary, that HPUE was positively correlated to water temperature and negatively correlated to discharge for eight species of fish. Add that surveyed anglers targeted catfishes and black basses and reported catch rates of 2.0 fish per hour.
- On page 30, Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Kennedy (2015) APC synopsis, include that a total of 50 fish species were collected over the 22 sites sampled. Of these 50 species, 13 species were collected with a high enough frequency that permitted further analyses.
- On page 32, section 2.3.3 Tallapoosa River and Tributaries of the Draft Aquatic Resources Report, Irwin (2019) APC synopsis, provide IBI score overviews similar to Bowen *et al.* (1996) summary section. Note differences in metrics between studies.
- On page 33, Table 2-5 Summary of Findings from Studies in the Tallapoosa River Below Harris Dam, it should be noted that the findings are based on the interpretation of APC. Including the individual abstracts of the actual research reports would eliminate any potential bias and the possibility of misinterpreting the study results.
- On page 33, Table 2-5 of the Draft Aquatic Resources Report, delete or rewrite table summary with major revisions. The majority of the brief summaries provided are either insufficient, incomplete and/or are not all inclusive of the research results or conclusions. Findings should point the reader to the actual research abstracts, which should also be included in this report.
- On page 35, 2.4 Summary section of the Draft Aquatic Resources Report, rewrite the first paragraph, accordingly, based on new species numbers and analysis after implementing ADCNR comments above. We recommend providing a more detailed summary of which specific aquatic species and populations (faunal shift changes) whose presence and/or sustainability within the Study Area have increased, decreased or remained stable since operation of the Harris Project and voluntary Green Plan implementation.
- On page 35, 2.4 Summary section of the Draft Aquatic Resources Report, it states, " *In the spring, Alabama Power coordinates with ADCNR to maintain Harris Reservoir at a stable or slightly rise in elevation for a two-week period to increase spawning success of sport fish species, including Largemouth Bass, Alabama Bass, and Black Crappie.*" Add "in the Harris Reservoir" after "Crappie". ADCNR appreciates this voluntary coordinated effort with APC to improve spawning success of sport fish species in the reservoir. It is great example of how stable spawning periods can be crucial to sport fish management and how cooperation among stakeholders can contribute to targeted natural resource positive outcomes.

- On page 37, section 3.2.1 of the Draft Aquatic Resources Report, it states, "*There is little existing temperature data on the recently described Tallapoosa Bass and Alabama Bass species. Spotted Bass data are being gathered as a surrogate to Alabama Bass data since the two species are very closely related.*" If no specific data is obtained regarding temperature data for the Tallapoosa Bass, in addition to the information obtained on Alabama Bass, ADCNR recommends including as supplement, available temperature requirements of Redeye Bass (*Micropterus coosae*) and Shoal Bass (*Micropterus cataractae*). Auburn University has the perfect opportunity to study, and publish temperature requirements for Tallapoosa Bass, if there is nothing in the literature to use. Trying to use "similar" species may not be accurate for the bioenergetics modeling trials.
- On page 38, section 3.2.2 of the Draft Aquatic Resources Report, it states, "*Daily fluctuations of 10 °C were rare during both Pre-Green Plan and Green Plan operations. Overall, releases from Harris Dam could cause temperature decreases of 4 °C in the summer and 1-2 °C in the fall (see June 2, 2020 HAT 3 meeting summary in Attachment 2)*." Specify what percentage of time yearly, monthly, daily and hourly, 2, 4, 6, 8 and 10 °C, changes occurred. Provide the time frame temperature changes described, are referring to in the text. For water temperature data, maximum and minimum values, and how long those values persist (hours) would better explain the fluctuation in temperature changes occurring in a regulated and unregulated river reaches. Providing detailed reporting of minimum and maximum values at hourly intervals especially when water temperatures reach critical spawning ranges (15-25°C) in the spring, is important to fully understand what is occurring to aquatic resources (See July 31, 2020, ADCNR page 18, section 3.2.4 Water Temperature of Draft Downstream Aquatic Habitat Report comments on temperature change). Provide mean, median, minimum and maximum hourly water temperature fluctuations in this section. A comparison of hourly changes between unregulated and regulated reaches will be critical in evaluating temperature impacts to natural resources.
- On page 38, section 3.2.2 of the Draft Aquatic Resources Report, it states, "*A direct comparison of temperatures between unregulated and regulated reaches will be included in the Final Aquatic Resources Study Report in April 2021*". Explain why the unregulated temperature evaluation was not included in the Draft Aquatic Resources Report. In addition, this section indicates that temperature is less variable in the tailrace than at Wadley. The tailrace should theoretically receive the coldest and largest amount of discharge. Provide verification of this result and include an explanation of potential causes for this variation as you proceed further downstream of the discharge.
- On page 38, section 3.2.3 of the Draft Aquatic Resources Report, it is unclear if this fish population includes shallow water habitat or only deep-water habitat analysis. The methods describe deep water sampling methods only. Specify which sites are shallow water and which are deep water. If any of ADEM's 2018 fish surveys in the Tallapoosa River will be used to supplement collections by Auburn University and Alabama Power, include data in the report or in an appendix and discuss results. Provide deep and shallow fish survey sampling metrics such as numbers of each species collected, abundance, diversity, evenness, etc. and calculate for each study reach (Recommend a similar basin calibrated IBI calculation for comparison to previous studies (Bowen *et al.* 1996; O'Neil *et al.* 2006; Irwin 2019)). If selected monitoring sites were modified or changed, provide details on habitat and fish sampling differences observed between sites.
- On page 3, section 2.1 in Appendix B of the Draft Aquatic Resources Report, since data relevant to effect of temperature requirements for Tallapoosa Bass do not currently exist, ADCNR recommends including additional available temperature requirements of Redeye Bass (*Micropterus coosae*) and Shoal Bass (*Micropterus cataractae*).
- On page 4, section 2.2 in Appendix B of the Draft Aquatic Resources Report, include an explanation or supporting sources for why extreme fluctuations in temperature in daily temperatures were defined as a 10 °C shift for this study. In addition to yearly, monthly and daily temperature shifts included, specify what percentage of time during hourly analysis, 2, 4, 6, 8 and 10 °C, changes occurred. For water temperature data, maximum and minimum values, and how long those values persist (hours) would better explain the fluctuation in temperature changes

occurring in a regulated and unregulated river reaches. Providing detailed reporting of minimum and maximum values at hourly intervals especially when water temperatures reach critical spawning ranges (15-25°C) in the spring. This information is needed to fully understand what is occurring to aquatic resources (See July 31, 2020, ADCNR page 18, section 3.2.4 Water Temperature of Draft Downstream Aquatic Habitat Report comments on temperature change). Provide mean, median, minimum and maximum hourly water temperature fluctuations in this section. Provide more details on the noted periods of relatively higher variation during both pre- and post- Green Plan periods including how many times they occurred for each site. If temperature data is unavailable for a specific site, during a time period when other sites indicate high temperature variation, provide a caveat recognizing these specific key data range gaps with an explanation for the absence. For example, Tailrace 2000 Temp Range is unavailable for 10-12-month data, but Malone and Wadley both indicate high variation during this same time period. Unavailable temperature data gaps, during key high temperature variation events, has the potential to significantly reduce analyses of temperature changes and impacts occurring in the regulated reach. A comparison of yearly, monthly, daily and hourly changes between unregulated and regulated reaches will be critical in evaluating temperature impacts and providing details for Modified Green Plan flow scenario recommendations. Explain why the unregulated temperature evaluation was not included in the Draft Aquatic Resources Report and include this analysis in the Final Aquatic Resources Report.

- On pages 5-7, section 2.3 in Appendix B of the Draft Aquatic Resources Report, deep and shallow fish survey sampling should include common metrics such as abundance, diversity, evenness, etc. and calculated for each study reach (Recommend a similar basin calibrated IBI calculation for comparison to previous studies (Bowen *et al.* 1996; O'Neil *et al.* 2006; Irwin 2019)). Data from ADEM's 2018 fish surveys in the Tallapoosa River may be used to supplement collections by Auburn University and Alabama Power (If supplementing this data for shallow water sampling, include data in the report or in an appendix and discuss results). If selected monitoring sites were modified or changed, provide details on habitat and fish sampling differences observed between sites.
- On page 6, section 2.3 Sampling Methods in Appendix B of the Draft Aquatic Resources Report, include an explanation for why pulses were set at 25/sec (25 pps) for electrofishing sampling. Typically pulse rates of at least 60/s are used to collect scaled fishes, and 30 and below are used for non-scaled fishes such as catfish.
- On page 7, section 2.4 in Appendix B of the Draft Aquatic Resources Report, specify in the bioenergetics methods if data from individuals collected from all four sites will be pooled and/or analyzed for differences among fish species groups for each site.
- On page 10, section 3.3 in Appendix B of the Draft Aquatic Resources Report, ADCNR agrees with the assessment that an alternative site is necessary for the current upstream control site due to its closely linked dam operation characteristics. ADCNR requests input on site selection alternatives.
- On page 10, section 3.3 in Appendix B of the Draft Aquatic Resources Report, provide methods for the electromyogram (EMG) telemetry data portion on page 5, section 2.3 section of the report.
- On page 15, Table 1. in Appendix B of the Draft Aquatic Resources Report, ADCNR recommends including additional available temperature requirements of Redeye Bass (*Micropterus coosae*) and Shoal Bass (*Micropterus cataractae*). Including details on spawning substrate preference, age at sexual maturity and maximum life expectancy of each species in this table would be beneficial.
- On page 17, Table 3. in Appendix B of the Draft Aquatic Resources Report, provide common names column, and family column similar to page 7, Table 2-1 of the Draft Aquatic Resources Report, for consistency purposes. Include number collected for each species, instead of presence only. Include common metrics such as abundance, diversity, evenness, etc. and calculated for each study reach (For etc. ADCNR recommends including a similar basin calibrated IBI calculation for comparison to previous studies (Bowen *et al.* 1996; O'Neil *et al.* 2006; Irwin 2019)). Include a row indicating how many sampling trips the column data represents.

- On pages 22-30, Figures 2A-2C in Appendix B of the Draft Aquatic Resources Report, if temperature data is unavailable for a specific site, during a time period when other sites indicate high temperature variation, provide a caveat (blue shaded box with asterisks recognizing these specific key data range gaps) with an explanation for the absence. For example, Tailrace 2000 Temp Range is missing 10-12-month data, but Malone and Wadley show high variation during this period. An additional notable missing data gap was observed in Figure 2B Malone 2003, months 3-5 data. Determining when, how often and how far downstream tailrace high variation temperatures were detected will be important information to have when evaluating temperature effects on aquatic resources.
- On page 36, Figure 6 in Appendix B of the Draft Aquatic Resources Report, label sites accordingly to site descriptions in the text (For example, label Upper Tallapoosa point as Lee's Bridge. Indicate which locations were substituted and provide alternative location on map.

Thank you for the opportunity to comment on the R.L. Harris Hydroelectric Project relicensing filed Harris Project Initial Study Report (ISR) Draft Aquatic Resources Report. We look forward to continuing our cooperative efforts with the Federal Energy Regulatory Commission, Alabama Power, and other stakeholders during this process.

If you have any questions regarding these comments, please contact me at (334-353-7484) or Todd.Fobian@dcnr.alabama.gov.

Sincerely,

Todd Fobian

Environmental Affairs Supervisor

References:

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Alabama Rivers Alliance
Water Is Life

August 28, 2020

VIA EMAIL

Ms. Angie Anderegg
Harris Relicensing Project Manager
Alabama Power Company
600 North 18th Street
Birmingham, AL 35203

RE: Comments on Draft Aquatic Resources Study Report for R.L. Harris Hydroelectric Project (P-2628-065)

Dear Ms. Anderegg:

Please see below for the comments of Alabama Rivers Alliance on the Draft Aquatic Resources Study Report (the "Draft Report") submitted by Alabama Power Company ("Licensee") for the relicensing of R.L. Harris Dam (P-2628-065). Thank you for the opportunity to comment and for including these comments in the FERC correspondence record. If you have any questions or concerns, please contact me at jwest@alabamarivers.org or by phone at (205)- 322-6395.

I. Downstream Fish Population Study

As part of the Downstream Fish Population Study described in Appendix B to the Draft Study (Auburn University's Progress Report), an assessment of the entire fish population below Harris is being conducted, and a subset of four target species are being studied more intensively.[1] For the non-target species, it is unclear exactly what the assessment entail. Will more information on non-target species be reported other than the presence/absence data contained in Table 3 of the Progress Report? We encourage Licensee to provide the "comprehensive characterization of aquatic resources" described in the approved Aquatic Resources Study Plan with careful attention paid to both target and non-target species.[2]

Particularly because scant temperature data exists for two of the four target species (Tallapoosa Bass and Alabama Bass[3]) and a wide range in thermal minima and preferred temperatures has been

[1] Draft Aquatic Resources Study Report (Jul. 2020), Accession No. 20200728-5120, at 37.
[2] Final Aquatic Resources Study Plan (May 2019), Accession No. 20190513-5093, at 3.
[3] Due to the limited existing temperature data on Alabama Bass, a related species (Spotted Bass) is being used as a surrogate. However, Table 1 of Auburn's Progress Report currently only contains one source reporting temperature

reported in the literature for another target species (Channel Catfish[4]), we recommend a literature review of similar temperature data for at least some of the non-target species, including species the science indicates are most affected by Harris, such as Stippled Studfish, Blackspotted Topminnow, Black Redhorse, Blacktail Redhorse, Riffle Minnow, and Bullhead Minnow.[5]

Of the 38 fish species studied from 25 sites over a 12-year period and reported on in the U.S. Geological Survey's Open-File Report from 2019 ("USGS Report"), the four target species selected for the Downstream Fish Population Study are relatively more tolerant of flows from Harris, though still clearly impacted. Figures B6 and B7 of the USGS Report show the estimated flow regulation effects on species-specific persistence and colonization, and it is clear that the target species are all in at least the top 50 percent of species that can withstand the current flow regime.[6] For example, the following Figure B6 of the USGS Report shows flow regulation effects on persistence for 38 species with the four target species highlighted.

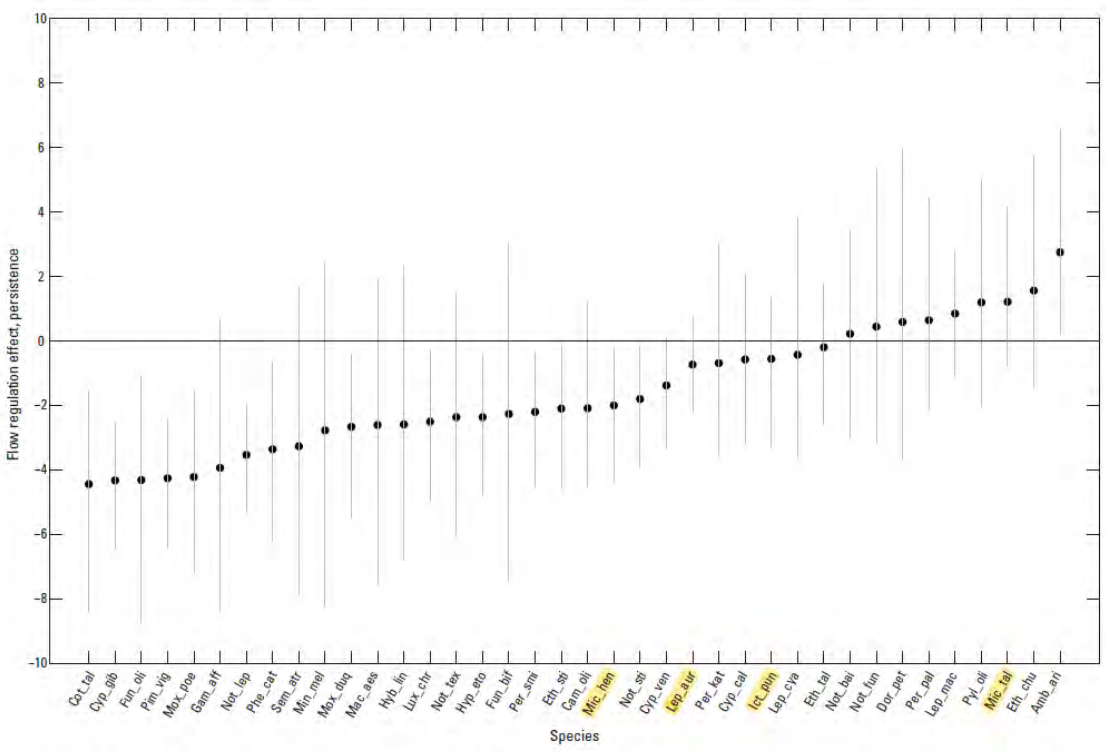

Figure B6. Estimated effects of location in the flow-regulated reach on species-specific persistence modeled using dynamic, multitaxa occupancy models applied to data for 25 sites in the Tallapoosa River system, 2005–16. Values are plotted on the logit scale and show 95-percent credible intervals. The horizontal line at 0 marks no effect; negative values indicate lower persistence in the flow-regulated reach compared to unregulated sites.

data on that surrogate species. More temperature may be uncovered as the study progresses, but for now, even the surrogate species does not have considerable data available.

[4] The temperature requirements data reported from two sources on Table 1 of Auburn's Progress Report show a very wide range in thermal minima (6.5 - 18°C) for Channel Catfish.

[5] Elise R. Irwin, *Adaptive Management of Flows from R.L. Harris Dam (Tallapoosa River, Alabama)—Stakeholder Process and Use of Biological Monitoring Data for Decision Making*, U.S. Geological Survey Open-File Report 2019-1026, Table B1 (at 31), Figure B6 (at 37), and Figure B7 (at 38).

[6] *Id*.

Certainly, the target species are game fish of particular interest to fishermen and recreationists on the Tallapoosa; however, they do not accurately represent the full spectrum of impacts suffered by fishes below Harris. As noted in the Aquatic Resources Study Plan, the goal of many stakeholders in this relicensing is to "protect and enhance the health of populations of game and non-game species of fish and other aquatic fauna."[7] To more comprehensively assess temperature and flow impacts on both game and non-game fishes, we recommend at least a literature review of temperature data for some of the more impacted species mentioned above.

II. Bioenergetics Modeling

A. *Sites of Fishes Used in Modeling*

Table 4 of Auburn University's Progress Report shows the number of each target species that have been run in static and swimming respirometry at either 10°C or 21°C, but it does not show which sites the fishes tested were collected from (regulated vs. unregulated sites). For instance, which sites were the five Channel Catfish shown as tested in the swimming respirometer in Table 4B collected from? To fully understand the effects of a Harris-sized release that combines increased flow with decreasing temperature, fishes from unregulated reaches that are not acclimated to the effects of Harris should be subjected to simulated conditions.

Just as the published bioenergetics model for a lentic population of Channel Catfish mentioned in Auburn's Progress Report may not be applicable to a model of the same species in a lotic environment, a bioenergetics model of Tallapoosa Bass from the Malone site, which experiences large fluctuations in daily flows, may be different than the model of Tallapoosa Bass in an unregulated reach that sees natural flows. To fully understand the energy-balance simulations provided by the bioenergetics model, it would be helpful to know if fishes from regulated or unregulated reaches were used to create the model.

B. *Temperatures Used for Static Respirometry*

As part of the intermittent flow static respirometry portion of the bioenergetics modeling, target fish species are being tested at two temperatures, 10°C and 21°C.[8] We seek to understand why those particular temperature values are being used for the static respirometry. The value of 10°C aligns with the lowest thermal minima of any target species on Table 1 of the Progress Report. The value of 21°C lines up with ideal spawning temps for two of the target species on Table 1.

The temperature range data provided by Licensee for 2000-2018 in Figure 2B regularly shows temperatures reaching 10°C in most every year. However, since this data is only for March through October of each year, with winter water temperatures not available, it is likely that lower water temperatures are present below Harris. The need for winter temperature data was noted by the Auburn research team as a take-home point during its June 2020 presentation to HAT-3.[9] Records

[7] Final Aquatic Resources Study Plan (May 2019), Accession No. 20190513-5093, at 3.
[8] Appendix B (Auburn University Progress Report) of Aquatic Resources Study Report (Jul. 2020), Accession No. 20200728-5120, at 8 [hereinafter "Auburn Progress Report"].
[9] *See* Attachment 2 (Consultation Record) to the Draft Aquatic Resources Study Report (Jul. 2020), Accession No. 20200728-5120, at 206 of full .pdf.

from the USGS gages at Wadley and Heflin shows winter water temperatures significantly below 10°C.[10] Additional winter temperature data may need to be taken into account as part of the static respirometry portion of the bioenergetics modeling. At a minimum, rationale for the temperature values chosen for the static respirometry would be helpful to stakeholders and should be included in the final report.

III. Alternative "Control" Sites for Fish Community Sampling

In Section 3.3 of the Auburn University Progress Report, the authors discuss the possibility of adding an alternative "control" site, either another site upstream of the Harris reservoir or an unregulated tributary. The current control site at Lee's Bridge "appears to be more closely linked to dam operations than previously thought," and that particular site is not yielding the requisite number of one of the target species, Tallapoosa Bass, to have a sufficient dataset. [11]

We fully support establishing one or more alternative control sites further upstream of Harris or, ideally, in the unregulated tributaries that are the least influenced by dam operations. An unaffected control site is necessary for the study, and if the Lee's Bridge site is not an appropriate control site, another should be identified and established.

IV. Addressing Thermal Pollution Problems

Based on extensive studies surveying a wide variety of fishes and macroinvertebrates below Harris, and based on the preliminary findings contained in the Draft Report, we believe enough evidence exists of the temperature impacts created by the hypolimnetic releases from Harris to justify beginning discussion of the options available to remedy the current thermal regime. The following is a brief summarization of some of the research pointing to ecological problems caused by low water temperatures:

- Nesting success for Redbreast Sunfish was negatively related to both peaking power generation and depressed water temperatures (Andress 2002).[12]
- Strongly fluctuating flows and decreased water temperatures negatively affect survival and early growth of age-0 Channel Catfish and Alabama Bass. Mortality was highest in treatments with decreased water temperatures, indicating that variation of the thermal regime could have significant impacts on survival of juvenile Channel Catfish and Alabama Bass. Daily growth rates were also lower in treatments with decreased water

[10] For instance, USGS data for the Heflin gage for November 2018 – March 2019 show water temperatures reaching below 6°C, and data from the USGS Wadley gage for that same period show water temperatures below 8°C.
[11] Auburn Progress Report, at 10.
[12] Andress, R. O., *Nest Survival of* Lepomis *Species in Regulated and Unregulated Rivers*, Master's Thesis, Auburn University (2002).

temperatures. Data also suggest that growth and survival may be impacted more by fluctuations in temperature versus flow variation (Goar 2013).[13]

- Improving flow and temperature criteria from Harris could enhance growth and hatch success of sport fishes (Irwin and Goar 2015).[14]
- Flow and temperature remain in a non-natural state in regulated reaches downstream of Harris, and the macroinvertebrate community in regulated reaches shows many dissimilarities to communities from unregulated river reaches (Irwin 2019).[15]

Most recently, Chapter B of the USGS Report specifically links cold temperatures to ecological impact: "Although it has long been recognized that temperatures are altered below R.L. Harris Dam, specific inference regarding the influence on biotic processes has been lacking until this study, which clearly related colonization rates (that is, recruitment of a species to a site) to increased thermal energy in the river."[16]

Thermal regimes and flows are intrinsically related, but at Harris, adjusting water temperatures may require a different set of infrastructure improvements than modifying flows due to the configuration of the intake structure. Licensee has stated it will examine options for temperature mitigation technologies once it has been determined that water temperature is a problem.[17] It will take time to analyze the cost-effectiveness of temperature control technologies such as floating intakes, multi-level intake structures, and different reservoir destratification approaches. We believe that delaying this discussion and assessment can only prolong the relicensing, and we encourage FERC and Licensee to turn to this topic while the Aquatic Resources Study progresses.

As the USGS Report notes, "changes in dam management have successfully mitigated for thermal effects,"[18] and thermal controls coupled with operational changes guided by adaptive management can bring about successful mitigation and ecological restoration on the Tallapoosa below Harris.

Sincerely,

Jack K. West

Jack K. West, Esq.
Alabama Rivers Alliance
Policy and Advocacy Director
2014 6th Avenue North
Suite 200
Birmingham, AL 3520

[13] Goar, T.P., *Effects of Hydrologic Variation and Water Temperatures on Early Growth and Survival of Selected Age-0 Fishes in the Tallapoosa River, Alabama*, Doctoral Dissertation (2013).
[14] Irwin, E.R. and T.P. Goar, *Spatial and Temporal Variation in Recruitment and Growth of Channel Catfish, Alabama Bass and Tallapoosa Bass in the Tallapoosa River and Associated Tributaries* (2015), U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS -116, Washington, D.C.
[15] Irwin, *supra* note 5,
[16] Irwin, *supra* note 5, at 47.
[17] Initial Study Report Meeting Summary (May 12, 2020), Accession No. 20200512-5083, at 26.
[18] Irwin, *supra* note 5, at 47.

HAT 1 - Final Operating Curve Change Feasibility Analysis Phase 1 Report

APC Harris Relicensing <g2apchr@southernco.com>

Mon 8/31/2020 8:08 PM

To: APC Harris Relicensing <harrisrelicensing@southernco.com>
Bcc: damon.abernethy@dcnr.alabama.gov <damon.abernethy@dcnr.alabama.gov>; robert.a.allen@usace.army.mil <robert.a.allen@usace.army.mil>; lgallen@balch.com <lgallen@balch.com>; arsegars@southernco.com <arsegars@southernco.com>; dkanders@southernco.com <dkanders@southernco.com>; wtanders@southernco.com <wtanders@southernco.com>; brian.atkins@adeca.alabama.gov <brian.atkins@adeca.alabama.gov>; nathan.aycock@dcnr.alabama.gov <nathan.aycock@dcnr.alabama.gov>; jefbaker@southernco.com <jefbaker@southernco.com>; dbronson@charter.net <dbronson@charter.net>; steve.bryant@dcnr.alabama.gov <steve.bryant@dcnr.alabama.gov>; nancyburnes@centurylink.net <nancyburnes@centurylink.net>; richardburnes3@gmail.com <richardburnes3@gmail.com>; wmcampbell218@gmail.com <wmcampbell218@gmail.com>; jcarlee@southernco.com <jcarlee@southernco.com>; kechandl@southernco.com <kechandl@southernco.com>; kmo0025@auburn.edu <kmo0025@auburn.edu>; mcoker@southernco.com <mcoker@southernco.com>; kate.cosnahan@kleinschmidtgroup.com <kate.cosnahan@kleinschmidtgroup.com>; allan.creamer@ferc.gov <allan.creamer@ferc.gov>

HAT 1,

Today, Alabama Power filed the Final Operating Curve Change Feasibility Analysis Phase 1 Report with FERC. This final report can be found on the Harris relicensing website in the HAT 1 folder and on FERC elibrary.

Thanks,

Angie Anderegg
Hydro Services
(205)257-2251
arsegars@southernco.com

APC Harris Relicensing

From: David Smith <inspector_003@yahoo.com>
Sent: Monday, August 31, 2020 3:28 PM
To: APC Harris Relicensing
Subject: Re: HAT 1 - Final Operating Curve Change Feasibility Analysis Phase 1 Report

Received, thank you.

Sent from Yahoo Mail for iPhone [overview.mail.yahoo.com]

On Monday, August 31, 2020, 3:09 PM, APC Harris Relicensing <g2apchr@southernco.com> wrote:

> HAT 1,
>
> Today, Alabama Power filed the Final Operating Curve Change Feasibility Analysis Phase 1 Report with FERC. This final report can be found on the Harris relicensing website in the HAT 1 [harrisrelicensing.com] folder and on FERC elibrary [elibrary.ferc.gov].
>
> Thanks,
>
> **Angie Anderegg**
>
> Hydro Services
>
> (205)257-2251
>
> arsegars@southernco.com

APC Harris Relicensing

From: Donna Matthews <donnamatthews2014@gmail.com>
Sent: Monday, August 31, 2020 4:12 PM
To: APC Harris Relicensing
Subject: Fwd: Aquatic Life Studies

---------- Forwarded message ---------
From: **Donna Matthews** <donnamatthews2014@gmail.com>
Date: Sat, Aug 29, 2020 at 12:01 AM
Subject: Aquatic Life Studies
To: <arsegars@southercompany.com>

28 Aug 2020
re : P-2628
Aquatic Resources Study

Dear Angie,
Below are my comments on the proposed Aquatic/Bioenergetic studies.

This is a huge and complex area of study, far beyond my scope.
However, I have one major concern:

Given the wide array of study data already available, it seems prudent to design studies built upon previously gleaned knowledge and understanding. This river has been studied for decades. It is known that regulation of rivers including erratic flows and induced temperature variations are detrimental to downstream aquatic life. I saw no mention of previous 'Wisconsin" Bioenergetic Studies in the literature review. If creation of a model adaped for this study is breaking new ground, how is it superior to previous methodologies of *in situ* fish and critter counts at various points along the river? What does it aspire to contribute to the knowledge of the aquatic life, in all its totality, of the Tallapoosa River? What information will it (Bioeneretic Model) provide that other study methods do not? What information is not collected from a bioenergetic study which might be present in biological monitoring studies?

My understanding was the 20 or so level loggers set out last year were to record temp and flow data every 15 minutes. Are the level logger locations being used to collect fish samples for any of the studies? Since the locations of the level loggers are known, they become reference points from which to gather and study species of concern.

Since the data comparing regulated/unregulated temperatures is retrospective sec (3.2.2) are there plans to collect temp and flow data at the study/collection sites? Looking for species of concern at these specific locations will provide clear baseline data available for future scientists.

Constructing a new bioenergetics model to assess aquatic life seems excessive. Adding data to protocols for established aquatic biological monitoring would appear to be the better use of resources and allow better comparison of data from years past going forward.

Sincerely,