MARTIN DAM RELICENSING

ALABAMA POWER COMPANY

BIRMINGHAM, ALABAMA

MARTIN HYDROELECTRIC PROJECT

FERC NO. 349

STUDY PLAN 1 – MIGRATORY FISH
TALLAPOOSA BASIN LITERATURE REVIEW

MARCH 2009

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STUDY PLAN 1 – MIGRATORY FISH
TALLAPOOSA BASIN LITERATURE REVIEW

1.0 GOALS AND OBJECTIVES OF STUDY

The U.S. Fish and Wildlife Service (USFWS) is interested in understanding and documenting the migratory species that currently or historically utilized the Tallapoosa River through a literature-based review. Of those species, American eel is of particular concern as this catadromous species has been collected in the Tallapoosa River downstream of the Thurlow Project, and passage of this species through the multiple dams on the Tallapoosa and Alabama Rivers is a concern for completion of its lifecycle.

USFWS is also interested in what other southeast hydroelectric power projects are doing in regard to managing American eels and would like to see a review and summary of other American eel management plans and any recovery plans for diadromous fish species in the Tallapoosa Basin.

2.0 RELEVANT RESOURCE MANAGEMENT GOALS

Impacts to migratory rare, threatened, endangered or commercial fish species (including the American eel) are of concern to the NOAA National Marine Fisheries Service and the USFWS as part of their Section 18 authority provided in the Federal Power Act. The USFWS has expressed a particular interest in southeast management goals for the American eel, and how the operation and relicensing of the Martin Project fits into those goals.

3.0 BACKGROUND AND EXISTING INFORMATION

There is extensive information available on migratory fish species including American eel. Many of these species are rare, threatened, endangered or of commercial value and have been studied on the Atlantic and Gulf coasts. A review of some of the information available is provided at the following internet sites:

- http://www.fws.gov/southeast/gulfcoast/
- http://www.fws.gov/daphne/sturgeon/sturgeon.html
- http://www.nefsc.noaa.gov/sos/spsyn/op/eel/
- http://www.nefsc.noaa.gov/sos/spsyn/op/eel/archives/28_AmericanEel_2006.pdf
- http://www.fws.gov/northeast/ameel/american_eel questions_and_answers.pdf
- http://www.fws.gov/southeast/fisheries/sefishpassage/se%20fish%20and%20aquatic%20species%20barrier%20assessment%20workshop%20day%202%20questions.pdf
- http://nia.ecsu.edu/noaa/0506/noaa_coastal_conference/coastal_agenda_draft.pdf

Additional citations that are available are:

ASMFC. 2006a. Terms of Reference and Advisory Report to the American Eel stock assessment peer review. ASMFC Stock Assessment Report 06-01. 23 p.

ASMFC. 2006b. 2006 review of the Atlantic States Marine Fisheries Commission Fishery Management Plan for American Eel (Anguilla rostrata). http://www.asmfc.org/.

Collette, B.B. and G. Klein-MacPhee (ed.). 2002. Bigelow and Schroeder's Fishes of the Gulf of Maine. 3rd edition. Smithsonian Inst. Press. Washington, D.C. 748 p.

Mettee, M. F., P. E. O'Neil, and J. M. Pierson. 1996. Fishes of Alabama and the Mobile basin. Oxmoor House, Birmingham, AL.

United States Fish and Wildlife Service (USFWS) and Gulf States Marine Fisheries Commission (GSMFC). 1995. Gulf sturgeon recovery plan. U. S. Fish and Wildlife Service, Atlanta, GA.

United States Fish and Wildlife Service (USFWS). 2000. Conservation agreement and strategy for the Alabama sturgeon. U. S. Fish and Wildlife Service, Atlanta, GA.

As seen in this sampling of information available, information for the Atlantic and Gulf coasts are readily available. Therefore, there should be adequate information available for a literature-review based study for migratory species including American eel.

4.0 PROJECT NEXUS

Because migratory species use rivers as migratory routes between spawning areas in freshwater and saltwater, hydroelectric dams can serve as obstacles to migration. The Martin Project serves as a potential barrier for fish passage on the Tallapoosa River. However the Yates and Thurlow dams are located downstream of the Martin dam and serve as the first fish barriers on the Tallapoosa River. There are no fish passage facilities at these two projects.

There are also additional Army Corps of Engineer dams downstream on the Alabama River – R.F. Henry Lock & Dam/Woodruff Lake, Millers Ferry Lock & Dam/Dannelly Lake, Claiborne Lock & Dam/Claiborne Lake. There are currently no fish passage facilities at these three sites other than the Lock portion at each project.

5.0 STUDY AREA AND STUDY SITES

This study would focus on the Tallapoosa River with emphasis on the Martin Project and will include the Tallapoosa River downstream of the Yates and Thurlow Projects not to exceed the mouth of the Tallapoosa (i.e., RM 0). It will also include, to some extent, some literature review of the Alabama River.

6.0 PROPOSED METHODOLOGY

The proposed method for implementing this study would be a literature search and review and summary of the information gathered.

1) Alabama Power will solicit comments from the USFWS and National Marine Fisheries Service (NMFS) regarding the proposed study plan and request any documents they would like included in this literature search.

2) Alabama Power will review and summarize the historic range of migratory (anadromous, catadromous, and diadromous) fish species with emphasis on those species that are listed as rare, threatened or endangered on the USFWS and/or NOAA list of commercial species. The intent is to perform a thorough review of relevant literature (peer reviewed and "gray" literature).

3) Alabama Power will develop a bibliography of all documents (PDF copies of papers/reports/relevant documents and documentation of personal communications conducted) to be transmitted with the Draft Study Report. In addition, Alabama Power will develop a written summary for each relevant document reviewed as well as all relevant information gained through correspondence with researchers and others. Summaries for each relevant document should highlight the species, its life cycle and its historic range in the study area.

4) Alabama Power will use the "fish passage information document" for the Martin fish passage study (see Attachment A).

5) For the American eel, Alabama Power will review other existing recovery plans for information on how other hydroelectric power projects are addressing passage of American eels.

6) Include information on abandoned tributary dams that may be candidate for removal.

7) Alabama Power will discuss how releases from Martin may potentially affect migratory fish below the Thurlow development.

7.0 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE

This study employs generally accepted practices for conducting literature searches. As noted above, the USFWS and NMFS will have opportunity to comment and edit this plan to include documents that should be reviewed and summarized as part of this study report.

8.0 PRODUCTS

A draft report summarizing the applicable literature of species associated with the Tallapoosa River Basin, specifically the Martin Project, will be distributed to MIG 1 for review

and comment within 4 months of the completion of the literature gathering and review. A final report will be provided as part of the draft license application that will include PDF copies of the literature used for the report.

9.0 SCHEDULE

This schedule corresponds to Alabama Power's Process Plan and Schedule filed with FERC on February 16, 2009. Actual consultation meeting dates will be determined with MIG 1 members upon FERC approval of the study plan.

Alabama Power files Final Study Plan with FERC .....March 2009
FERC approval.....April 2009
MIG 1 Consultation ..... July 2009 – December 2010
Literature Review.....June – September 2009
Initial Study Report.....November 2009
Initial Study Report Meeting .....December 2009
Draft Report .....January 2010
Final Report ..... May 2010
FERC Updated Study Report..... September 2010
Updated Study Report Meeting ..... September 2010

10.0 LEVEL OF EFFORT AND COST

Alabama Power estimates the cost of consulting on study plan development, conducting a thorough literature review, developing a study report, and discussing the results with all stakeholders is approximately $60,000.

11.0 REFERENCES

Many references are provided in the previous document sections.

ATTACHMENT A

ALABAMA POWER COMPANY
BIRMINGHAM, ALABAMA

MARTIN RELICENSING PROJECT
FERC NO. 364

TALLAPOOSA RIVER FISH PASSAGE INFORMATION DOCUMENT

MARCH 2009

Prepared by:

Alabama Power Company
United States Fish & Wildlife Service

MARTIN RELICENSING PROJECT

TALLAPOOSA RIVER FISH PASSAGE INFORMATION DOCUMENT

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BIRMINGHAM, ALABAMA

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1.0 INTRODUCTION

The Alabama Power Company (Alabama Power) is currently relicensing the Martin hydroelectric projects on the Tallapoosa River. The relicensing process includes a multi-year cooperative effort between Alabama Power and interested stakeholders to address operational, recreational, and ecological concerns associated with hydroelectric project operations. During the initial (scoping) phase of the relicensing process, Alabama Power consulted a wide variety of stakeholders, including state and federal resource agencies, non-governmental organizations, and concerned citizens seeking their input on important relicensing issues. Stakeholders identified several issues to be addressed during this relicensing process, including fish passage related to the Tallapoosa and Alabama River basins.

As part of the relicensing process, Alabama Power held several meetings with the U.S. Fish and Wildlife Service (USFWS) and other stakeholders to further refine the fish passage issue. As part of these discussions, the USFWS identified preparation of a Fish Passage Information Document to describe the fish passage issue and identify opportunities to enhance anadromous, catadromous, and diadromous species limited fish passage on the Tallapoosa River. The primary purpose of this document is to present the framework for addressing fish passage in the relicensing process. Specifically, it is the Tallapoosa River Fish Passage Information Document that outlines the information needed to address the fish passage issue:

- What are the identified biological objectives?
- What information do we currently have?
- What information do we need?
- What is a reasonable initial approach to address fish passage?

2.0 BIOLOGICAL OBJECTIVES IDENTIFIED

The biological objectives should address three main areas:

- Which species are targets for fish passage?
- What are the fish passage goals for the selected species?
- What are the long-term restoration goals for the selected species?

In Table 2-1, a list of species from the Section 1135 Preliminary Restoration Plan for the Alabama River that the U.S. Army Corp of Engineers (USACE) conducted in response to a request from the World Wildlife Fund (WWF). The plan states that there are 144 species of fish in the Alabama River (Mettee et al. 1996), but the species in the table represent the migratory species that would benefit from fish passage at Claiborne Lock & Dam. Species of special concern are the Gulf sturgeon, Alabama sturgeon, paddlefish, and the Alabama shad. There are currently no fish passage facilities at the Claiborne Dam other that the boat lock facility.

Table 2-1: Anadromous, Catadromous, and Diadromous Fish Species Collected in the Alabama River

SPECIES	SPECIES OF SPECIAL CONCERN	MOVEMENT CHARACTERISTICS
Gulf sturgeon (Acipenser oxyrinchus desotoi)	x	Anadromous
Alabama sturgeon (Scaphirhynchus suttkusi)	x	Diadromous
mooneye (Hiodon tergesis)		Diadromous
paddlefish (Polyodon spathula)	x	Diadromous
alligator gar (Lepisosteus spatula)		Diadromous
American eel (Anguilla rostrata)		Catadromous
Alabama shad (Alosa alabamae)	x	Anadromous
skipjack herring (Alosa chrysochloris)		Diadromous
gizzard shad (Dorosoma cepedianum)		Diadromous
threadfin shad (Dorosoma petenense)		Diadromous
blue sucker (Cycleptus elongatus)		Diadromous
Alabama hog sucker (Hypentelium etowanum)		Diadromous
smallmouth buffalo (Ictiobus bubalus)		Diadromous
quillback (Carpiodes cyprinus)		Diadromous
highfin carpsucker (Carpiodes velifer)		Diadromous
spotted sucker (Minytrema melanops)		Diadromous
river redhorse (Moxostoma carinatum)		Diadromous
black redhorse (Moxostoma duquesnei)		Diadromous
golden redhorse (Moxostoma erythrurum)		Diadromous
blacktail redhorse (Moxostoma poecilurum)		Diadromous
channel catfish (Ictalurus punctatus)		Diadromous
blue catfish (Ictalurus furcatus)		Diadromous
flathead catfish (Pylodictis olivaris)		Diadromous
Atlantic needlefish (Strongylura marina)		Diadromous
white bass (Morone chrysops)		Diadromous
striped bass (Morone saxatilis)		Anadromous
spotted bass (Micropterus punctulatus)		Diadromous
largemouth bass (Micropterus salmoides)		Diadromous
southern walleye (Stizostedion vitreum vitreum)		Diadromous
freshwater drum (Aplodinotus grunniens)		Diadromous
hogchoker (Trinectes maculatus)		Diadromous
striped mullet (Mugil cephalus)		Diadromous

Additional efforts have been made to collect fishes on the Tallapoosa River downstream of the Thurlow Project as part of a minimum flow evaluation plan for that project. These fish are presented in Table 2-2.

Table 2-2: Anadromous, Catadromous, and Diadromous Fish Species Collected or Believed to be Present Downstream of Thurlow Dam in the Tallapoosa River

COMMON NAME	SCIENTIFIC NAME	MOVEMENT CHARACTERISTICS
Alabama sturgeon	*Scaphirhynchus suttkusi*	Diadromous
paddlefish	*Polyodon spathula*	Diadromous
American eel	*Anguilla rostrara*	Catadromous
mooneye	*Hiodon tergisus*	Diadromous
Alabama shad	*Alosa alabamae*	Anadromous
skipjack herring	*Alosa chrysolchloris*	Diadromous
"shoal chub"	*Machrybopsis sp. cf. M. aestivalis "A"*	
"shoal chub"	*Machrybopsis sp. cf. M. aestivalis "B"*	
southeastern blue sucker	*Cycleptus meridionalis*	Diadromous
river redhorse	*Moxostoma carinatum*	Diadromous
shadow bass	*Ambloplites ariommus*	Diadromous
redspotted sunfish	*Lepomis miniatus*	
redeye bass	*Micropterus coosae*	Diadromous
stippled studfish	*Fundulus bifax*	
crystal darter	*Crystallaria asprella*	
lipstick darter	*Etheostomoa chuckwachatte*	
freckled darter	*Percina lenticula*	
muscadine bridled darter	*Percina smithvanizi*	
walleye	*Stizostedion vitreum*	Diadromous

Other federally listed species in the Tallapoosa and lower Alabama River include:

Alabama red-bellied turtle (Pseudemys alabamensis), southern clubshell (Pleurobema decisum), heavy pigtoe (Pleurobema taitianum), inflated heelsplitter (Potamilus inflatus), and fine-lined pocketbook (Lampsilis altilis).

Restoration goals should follow approved fishery management plans if they are in place (FERC 2003). These will include USFWS any conservation agreements for the Alabama sturgeon (USFWS 2000) and future restoration plans for the Alabama shad.

3.0 SCIENTIFIC BACKGROUND

The purpose of this section is to investigate resources and define the existing information on the fisheries community and their need for migration.

4.0 SCIENTIFIC UNKNOWNS

There are several scientific unknowns that will need to be addressed as part of this document.

- What information do we need to know about fish biology and fish passage needs (lifts, locks, or ladders) in addition to our current base knowledge?
- Which developments need fish passage facilities?
- What type of effectiveness studies would be needed?

Most of the current research regarding fish passage has been focused on Claiborne Lock & Dam.

Additionally, the FERC (2003) recommends including the following two items if a fish passage plan is developed:

1) an effectiveness monitoring plan should be included in the license articles that evaluates upstream or downstream fish passage; and
2) defining the duration of monitoring (typically 2-4 years depending on flow conditions).

5.0 RECOMMENDATIONS

This section of the report will provide general recommendations for the USFWS and the MIG 1 to consider in developing a preliminary license proposal.

6.0 INFORMATION SOURCES/LITERATURE CITED

Federal Energy Regulatory Commission (FERC). 2003. Evaluation of mitigation effectiveness at hydropower projects: Fish passage, draft report. Federal Energy Regulatory Commission, Washington, D. C.

Mettee, M. F., P. E. O'Neil, and J. M. Pierson. 1996. Fishes of Alabama and the Mobile basin. Oxmoor House, Birmingham, AL.

United States Fish and Wildlife Service (USFWS) and Gulf States Marine Fisheries Commission (GSMFC). 1995. Gulf sturgeon recovery plan. U. S. Fish and Wildlife Service, Atlanta, GA.

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