FINAL RARE, THREATENED, AND ENDANGERED SPECIES SURVEYS STUDY PLAN

HOLT HYDROELECTRIC PROJECT
FERC No. 2203

PREPARED BY:

ALABAMA POWER
A SOUTHERN COMPANY

AUGUST 2011
1.0 GOALS AND OBJECTIVES OF STUDY

The U.S. Fish and Wildlife Service (USFWS) and the Alabama Department of Conservation and Natural Resources (ADCNR) (agencies) are concerned about the presence of any Federal and/or State Rare, Threatened, and Endangered (RTE) species and native species that currently reside within the Holt Project (Project) Boundary and in the downstream tailrace and tailwater areas down to the toe of the Holt navigation lock.

Alabama Power Company’s (Alabama Power) goal for this study is to identify the location and abundance of any RTE species within the Project Boundary and determine if Project operation potentially impacts any species present. If there are Project related impacts, Alabama Power would like to determine ways to limit those impacts.

2.0 RELEVANT RESOURCE MANAGEMENT GOALS

The USFWS has mandatory federal authority under Section 7 of the Federal Power Act to identify and limit the impacts of hydropower projects on any federally protected Threatened or Endangered species within the Project Boundary. The ADCNR has developed a policy to enhance RTE species through protection of habitat, supplemental stocking, and/or reintroduction of species to historic habitats. Protection and or enhancement of any populations of RTE species within the Project Boundary would be a positive action for sustaining any RTE species identified.

3.0 BACKGROUND AND EXISTING INFORMATION

The Holt Preliminary Application Document (PAD) identified fourteen federally Threatened, Endangered, and Candidate Species in Tuscaloosa County that may be present in the Project.
Boundary (Table 1). Previous surveys have been performed in the limited Project Boundary, but no RTE species were detected during these surveys. Alabama Power has agreed to perform additional surveys of aquatic and terrestrial habitats as outlined in Section 6 of this Study Plan.

**TABLE 1  **FEDERALLY THREATENED, ENDANGERED, AND CANDIDATE SPECIES IN TUSCALOOSA COUNTY
(Source: U.S. Fish and Wildlife Service, 2010)

<table>
<thead>
<tr>
<th>SCIENTIFIC NAME</th>
<th>COMMON NAME</th>
<th>FEDERAL STATUS¹</th>
<th>CRITICAL HABITAT IN COUNTY</th>
<th>LIKELY TO OCCUR² IN PROJECT AREA (Y/N)</th>
<th>JUSTIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Picoides borealis</em></td>
<td>Red-Cockaded Woodpecker</td>
<td><em>E</em></td>
<td></td>
<td>No – requires contiguous stands of old growth longleaf pine forest, which do not occur in the limited terrestrial Project Area.</td>
<td></td>
</tr>
<tr>
<td><em>Haliaeetus leucocephalus</em></td>
<td>Bald Eagle</td>
<td>BGEPA</td>
<td></td>
<td>Yes – transient eagles likely pass through Project Area during foraging or migration; no nests are known within the project area.</td>
<td></td>
</tr>
<tr>
<td><em>Mycteria americana</em></td>
<td>Wood stork</td>
<td><em>E</em></td>
<td></td>
<td>No – Coastal Plain species.</td>
<td></td>
</tr>
<tr>
<td><em>Sternotherus depressus</em></td>
<td>Flattened musk turtle</td>
<td><em>T</em></td>
<td></td>
<td>No – Occurrence limited to areas upstream of Bankhead Lake on Warrior River.</td>
<td></td>
</tr>
<tr>
<td><em>Pleurobema decisum</em></td>
<td>Southern clubshell mussel</td>
<td><em>E</em></td>
<td><em>Y</em></td>
<td>No – Limited to areas upstream of Bankhead Lock and Dam.</td>
<td></td>
</tr>
<tr>
<td><em>Pleurobema perovatum</em></td>
<td>Owate clubshell mussel</td>
<td><em>E</em></td>
<td><em>Y</em></td>
<td>No – Limited to areas upstream of Bankhead Lock and Dam.</td>
<td></td>
</tr>
<tr>
<td><em>Pleurobema furvum (=rubellum)</em></td>
<td>Warrior pigtoe mussel</td>
<td><em>E</em></td>
<td><em>Y</em></td>
<td>No – Limited to areas upstream of Bankhead Lock and Dam and well downstream of Holt Dam (Sipsey Fork and tributaries Clear Creek, North River and tributary, Black Warrior mainstem downstream of confluence with North River).</td>
<td></td>
</tr>
<tr>
<td><em>Hamiota (=Lampsilis) altilis</em></td>
<td>Fine-lined Pocketbook Mussel</td>
<td><em>T</em></td>
<td></td>
<td>No – No current populations known from Black Warrior Basin.</td>
<td></td>
</tr>
<tr>
<td><strong>Scientific Name</strong></td>
<td><strong>Common Name</strong></td>
<td><strong>Federal Status</strong></td>
<td><strong>Critical Habitat in County</strong></td>
<td><strong>Likely to Occur in Project Area (Y/N)</strong></td>
<td><strong>Justification</strong></td>
</tr>
<tr>
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</tr>
<tr>
<td>Medionidus acutissimus</td>
<td>Alabama moccasinshell mussel</td>
<td>T</td>
<td>Y</td>
<td>Yes – Documented in Black Warrior in vicinity of Fall Line.</td>
<td></td>
</tr>
<tr>
<td>Hamiota (=Lampsilis) perovalis</td>
<td>Orange-nacre mucket mussel</td>
<td>T</td>
<td>Y</td>
<td>Yes – Documented near mouth of Yellow Creek, downstream of Holt Dam.</td>
<td></td>
</tr>
<tr>
<td>Potamilus inflatus</td>
<td>Inflated heelsplitter mussel</td>
<td>T</td>
<td>Y</td>
<td>Yes – Documented downstream of Holt Dam, beginning near mouth of Yellow Creek.</td>
<td></td>
</tr>
<tr>
<td>Neonympha mitchelli mitchelli</td>
<td>Mitchell's satyr butterfly</td>
<td>E</td>
<td></td>
<td>No – Typically occurs only in calcareous wetlands (fens) (Black and Vaughan, 2005)</td>
<td></td>
</tr>
<tr>
<td>Necturus alabamensis</td>
<td>Black Warrior waterdog</td>
<td>C</td>
<td></td>
<td>No – Currently known only from Yellow Creek and North River in Tuscaloosa County (Amphibiaweb, 2010; Mirarchi, 2004).</td>
<td></td>
</tr>
<tr>
<td>Platanthera integrilabia</td>
<td>White fringeless orchid</td>
<td>C</td>
<td></td>
<td>No – Generally found in wet, flat, boggy areas at the head of streams or seepage slopes. (NatureServe, 2009).</td>
<td></td>
</tr>
</tbody>
</table>

1 E = federally listed as Endangered, T = federally listed as Threatened, C = candidate for federal listing, BGEPA = not federally listed, but protected under Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act.
2 Refers to occurrence in the Black Warrior Basin; mussel occurrences are as summarized in Williams et al., (2008), unless otherwise cited.
3 USFWS noted that the status of this species is likely to change soon.

### 4.0 PROJECT NEXUS

The study would determine if there are existing populations of RTE species within the Project Boundary (transmission line, tailrace immediately downstream of turbine outfall, and the parking and scenic overlook area).

### 5.0 STUDY AREA AND STUDY SITES

Alabama Power has identified the entire Project Boundary as the area for all surveys. This includes 2.48 miles of transmission lines, footprint of the Project (powerhouse and parking and scenic overlook area), and the immediate tailrace downstream of the turbine outfall.
6.0 PROPOSED METHODOLOGY

The overall purpose of this study is to gather additional data for determination of the presence and location of RTE species within the Project boundary and to determine if Project operations affect these populations.

6.1 AQUATIC SPECIES

Consultation with the USFWS and ADCNR has identified specific areas (Table 2) and specific species of interest for the survey. Field surveys will be performed by qualified investigators in the areas of interest. These surveys will determine the presence or absence of RTE species within the Project Boundary.

<table>
<thead>
<tr>
<th>TABLE 2 RARE, THREATENED, AND ENDANGERED SPECIES SAMPLE SITES FOR 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SITE NAME</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Holt Tailrace</td>
</tr>
<tr>
<td>Holt Transmission Line</td>
</tr>
</tbody>
</table>

Qualitative mussel and snail surveys will be conducted at the location listed in Table 2 between May and October 2011. Sampling will include up to 1-hour of timed qualitative searches performed by a diver (using a surface-supplied air dive system equipped with a hardwire communication system) in deep stream sections or by wading/snorkeling in shallow stream sections. Most searches will be 10 minutes in duration, but may extend longer when varying substrates are encountered. The surveyor will place all mussels and snails found during a search into a mesh bag and bring them to the surface for identification. Mussels will be identified and returned to the river bottom. Snails will be preserved for later identification. If a search encounters abundant snails and/or Asiatic clams (*Corbicula*), a representative sub-sample will be collected and sorted at the surface. All field data such as geographic positioning coordinates (GPS), water depth, visibility, substrate type, dive times, and mussel/snails collected will be documented at each search location.
6.2 Terrestrial Species

Alabama Power originally performed surveys of the transmission lines before they were constructed. No threatened or endangered species were observed at that time. The bald eagle is the only terrestrial wildlife species of concern that could possibly be present in this area (Table 1). Alabama Power will perform a survey of the Project Area to detect the presence of any active bald eagle nests.

To assess the current presence of any RTE plant species within the Project Boundary, Alabama Power will perform a survey of the Project Area to determine the presence or absence of these species. The surveyed areas will be documented on a survey data sheet (i.e. date, location, habitat type, species present, etc.). Alabama Natural Heritage Program sighting forms will be completed for each rare plant population located. Sighting forms document each population and include detailed information, such as size of area occupied, habitat description, and associated plant species. Locations of populations will be mapped with the aid of a GPS unit and depicted on physical and electronic maps. Rare plant species will be photographed (close-ups of individual plants and more general habitat shots).

6.3 Data Analysis

The collected data will be summarized into a list of species collected at each site surveyed. Any threatened or endangered species observed and their habitat “requirements” will be included in the study report. GIS overlays of results will also be provided to the agencies and incorporated into other studies as necessary. Ultimately all RTE data collected will be used by Alabama Power to develop a Biological Assessment in cooperation with USFWS as part of the required Section 7 Consultation needs.

7.0 Consistency With Generally Accepted Scientific Practice

This study employs generally accepted practices for evaluating RTE distributions at hydroelectric projects. The study methodology provided here has been previously recommended by the USFWS and the ADCNR and is consistent with generally accepted sampling principles.
and practices for mollusk communities. Standard field surveys for terrestrial species consistent with accepted sampling practices will also be used.

8.0 PRODUCTS

This study will produce a report of RTE locations, including maps (both electronic and hard copy)\(^1\), within and immediately adjacent to the Project Boundary. This information will also be used to prepare a Biological Assessment for threatened and endangered species.

Data and analyses from this study will be included in a draft report to USFWS, ADCNR, and interested stakeholders. Draft reports will be distributed for review and comment upon completion of the product. Final reports will be provided for each product as part of the draft license application and will contain all necessary data in tabular and graphic form to depict RTE abundance and/or distribution within the Project.

9.0 SCHEDULE

This draft schedule generally corresponds to Alabama Power’s Process Plan and Schedule filed with FERC as part of the PAD on August 27, 2010.

- Agency Study Plan Review ................................................................. April 2011
- Comments on Study Plan .................................................................. May 2011
- Conduct Field Surveys ................................................................. June – October 2011
- Draft Report ................................................................................ January 2012
- Biological Assessment ................................................................. June 2012
- Final Report ................................................................................ January 2013

10.0 AGENCY COMMENTS

Alabama Power distributed the Holt Rare Threatened and Endangered Species Surveys Study Plan to the ADCNR, USFWS, Alabama Department of Environmental Management (ADEM), and Nelson Brooke (Black Warrior Riverkeeper) for review on May 3, 2011. Alabama Power received comments from USFWS and ADCNR Fisheries Section. Some of their comments were incorporated into the Study Plan. Other comments not accepted are described below.

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\(^1\) RTE location information is viewed as sensitive information and will not be distributed beyond state and federal agencies.
The USFWS suggested that the study scope be expanded to include the “operational zone” of the Project to encompass the impacts of altered flows on native species in addition to the RTE species. They also requested that Alabama Power conduct two aquatic species surveys (one in spring/summer and one in late fall/winter). Also, they recommended using at least one-hour of qualitative sampling for mussels and snails in suitable habitat and qualitative searches of less than one hour in poor habitat.

Alabama Power notes that the U.S. Army Corps of Engineers (USACE) constructed, owns, and operates the Holt Lock and Dam Facility. Alabama Power operates its one hydroelectric turbine within the Holt powerhouse based on the restrictions of the USACE. The Project influence should be limited to the immediate tailrace and tailwater areas downstream of the Project to the toe of the Holt Lock (approximately 300 ft). Alabama Power provided a list of aquatic species in the Holt Preliminary Application Document based on information provided by the USFWS and ADCNR. Alabama Power plans to spend one day of sampling for RTE mussel and snail species in the tailrace vicinity during July of 2011. We will incorporate the USFWS comment regarding the length of time for qualitative searches in both suitable and poor habitat. Alabama Power held a conference call with Jeff Powell (USFWS) on July 11, 2011; and a second conference call with Lynn Sisk (ADEM) and Chris Greene (ADCNR) on July 21, 2011 to discuss the changes.

11.0 REFERENCES


