# YADKIN-PEE DEE RIVER HYDROELECTRIC PROJECT
# FERC NO. 2206

## ISSUE EVALUATION TEMPLATE – FINAL STUDY PLAN
## TERRESTRIAL RESOURCES WORKING GROUP
## ISSUE NO. 8
## WILDLIFE INVENTORIES

**JANUARY 2004**

**PROGRESS ENERGY**

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**YADKIN-PEE DEE RIVER PROJECT**
**TERRESTRIAL RESOURCES WORKING GROUP**
**ISSUES EVALUATION TEMPLATE**

**Issue No. 8: Wildlife Inventories**

## 1. Description of Issue

Concern that thorough and complete field wildlife inventories, including neotropical migratory birds, have not been conducted.

## 2. Project Effects

The extent and diversity of habitat types within the Project boundaries and the diverse assemblage of fauna that has been observed or expected to be present in those habitats is evidence that the community within the Project boundary is healthy.

## 3. Applicable Existing Information

Progress Energy reviewed current records of the North Carolina Natural Heritage Program, South Carolina Heritage Trust Program, the USFWS, and lists from numerous organizations within the Pee Dee River study area. This data provides an extensive characterization of the existing resources associated within the four-county Project area in North Carolina and a three-county area in South Carolina. In addition to these tabletop resources, the following reports provide results from field surveys and information from other sources.

- Initial Consultation Document (Progress Energy 2003), Section 4.6, Wildlife Resources, Rare, Threatened, and Endangered Species - these sections provide information on plant and wildlife species, RTE, and significant communities found or documented to be located within/directly adjacent to the Project boundary.

- Botanical and Terrestrial Wildlife Resources Study for Blewett Hydroelectric Plant (EA Engineering, Science, and Technology 2000), Sections 3.1-3.3 - these sections provide information on animal species found in the Project area, or that were identified during surveys.

- Terrestrial Resources Report Associated with the Survey of Smith Lake Oxbow Swamp and the Adjacent Bottomland Wetlands (Framatome ANP DE&S 2002) - this report provides information regarding bottomland wetlands associated with the Smith Lake Oxbow Swamp (Black Gum Swamp) community and detailed information regarding the Black Gum Swamp area including incidental sightings of animals.

- Survey of Wading Bird Use and Great Blue Heron Nesting Activity in the Tailwater Area of the Tillery Hydroelectric Plant (CP&L 2002) - this report provides information regarding wading bird use at the tailwaters of the Tillery Hydroelectric Plant. In addition, information pertaining to bald eagle and other bird use of this area is presented.

- An Assessment of the Bald Eagle Breeding Population along Lake Tillery and Blewett Falls Lake in North Carolina: 2002 Breeding Season (Watts and Bradshaw 2002) - this report includes areal survey results from both 2001 and 2002 breeding seasons.

## 4. Study Needs

Based on the current characterization of the wildlife population that can be determined from surveys already conducted, incidental sightings, and information obtained from literature, Progress Energy proposes to conduct specific wildlife inventories in selected, high value habitat areas.

## 5. Final Study Plan

### 5.1 Purpose

The purpose of this field survey is to document existing terrestrial wildlife species populations in high value habitat areas within the Project boundary and zone of influence. Documenting the existing populations will provide the basis for evaluating potential Project operational effects on these resources, which will be provided in Exhibit E of the License application.

### 5.2 Objectives

The objectives of this field survey are to: (1) identify and map the high value wildlife habitat areas within the FERC Project boundaries and zone of operational influence; (2) characterize existing wildlife populations; (3) qualify the relationship of existing wildlife population distribution under the current operating regime and assess the effects of current and reasonable future Project-related hydropower operations (e.g., fluctuations and drawdowns) on these wildlife communities; and (4) provide information to assist in developing any potential protection, mitigation, and enhancement (PM&E) measures.

This study will also provide information needed to support several other relicensing studies including:

- Operational Effects on Waterfowl Habitats and Wetlands (Terrestrial Issue No. 4); and
- Monitoring of Existing RTE Populations (Terrestrial Issue No. 1).

### 5.3 Methodology

Existing conditions associated with the wildlife communities have been well documented in the Project area through several recent studies by Progress Energy and others. Initial determinations of high value habitat areas were based on information from these surveys and are indicated on

the maps in the ICD. These habitat areas include sites such as the great blue heron rookery, Gold Mine Branch longleaf pine forest, grassy islands/oxbow site, and the gabbro slopes. This study will be subdivided into four tasks.

Task 1 – Identify High Value Habitat Areas

Areas within the Project boundary and in the zones of influence immediately below the Blewett Dam (areas downstream of the Project are addressed in Terrestrial Issues No. 2 and 7) will be reviewed to identify as "high value wildlife habitat" based on existing information. These selected areas will be evaluated from existing information on plant community type, unique features, recent field studies, and observations. The agency biologists and local experts will be contacted for information on additional habitats of importance.

Task 2 – Compile Existing Information

Based on existing literature such as the North Carolina Natural Heritage Program database, county species lists, agency databases, other information such as Breeding Bird Counts and discussions with area biologists, a list of the wildlife species known or potentially occurring in or near the study area will be prepared. This list will be used in developing the inventory plan.

Task 3 – Characterize the Wildlife Populations

The characterization of the existing resources will involve several subtasks:

***Birds***

Surveys for avian resources will be conducted through use of point counts along established transects (Cooperrider et. al. 1986; Ralph et al. 1993; Ralph et. al. 1995). Point counts for avian species will involve a qualified observer surveying at established sample points and recording all the birds seen and heard over a ten minute period. The point counts for migratory species will begin at sunrise and continue through the day in an effort to capture both passerine and non-passerine species. Breeding bird surveys will focus on the time period from sunrise through approximately 10:30 a.m. to coincide with the territorial males' peak singing time. The order in which the points will be surveyed will change from survey to survey to reduce temporal bias. The approximate location of each bird detected will be recorded on a field map along with notes on activity. This will reduce the probability of recording the same individual more than once and will be used to estimate the number of birds present at each point (i.e., relative abundance). Strip census or meander surveys will also be conducted in the area of the point count surveys to bolster the probability of species occurrence. A strip census involves walking a line established through an area and recording individuals observed along the line.

The point count stations will be located in representative habitat areas within the entire Project area. Waterfowl and other waterbird survey points will be located in or adjacent to wetland, riparian, or shoreline areas in an effort to more accurately document these species. Additional significant areas such as the known great blue heron rookery will also be documented. The

number of point count stations will be based on the availability of representative habitat within or immediately adjacent to the Project boundary.

Each station will be visited at least twice during the spring migration period (early March through late May); twice during the breeding period (early June through late June); and four times during the fall migration period (mid August through mid December). The migration surveys during the spring and fall will coincide with the passage of weather fronts (i.e., warm fronts in the spring and cold fronts in the fall) (Lincoln 1989). Surveys will not be conducted when rain or wind interfere with the audibility of bird sounds, or when fog or rain interferes with bird identification. Species richness (total number of species) will be determined.

***Reptiles and Amphibians***

Surveys for the aquatic species (frogs, salamander, and turtles) will consist of direct searches for egg masses and larval forms in any pool areas, searching shallow water zones for amphibians, and turning over rocks, debris, and litter to find both adults and larval amphibians. At least two, 2- to 3-hour nocturnal surveys will be conducted in the study area to document breeding amphibian use in the early spring. Limited dip-net and funnel trap sampling will also be conducted in the aquatic areas and any vernal pool areas.

Terrestrial species such as lizards, snakes, and certain salamanders will be surveyed through use of visual encounter surveys along designated transects established during the survey. The visual encounter surveys will be augmented through cover-object surveys (e.g., turning over rocks, logs and other debris).

Surveys for both aquatic and terrestrial species will be conducted through the appropriate breeding periods which can include early spring (i.e., late March) for the vernal pool breeding species such as most mole salamanders and between June and September for the aquatic and terrestrial species. Survey forms will be developed for the study and will include information on species numbers, life stages, habitat conditions, and survey conditions. Species richness (total number of species) will be determined.

***Mammals***

Surveys for mammals will be conducted through use of visual encounter surveys along designated transects established during the survey. The visual encounter surveys will be augmented through incidental observations and observations of sign such as tracks, scat, and den areas. All powerhouses and other associated structures will be surveyed for bat species.

***General Wildlife Resources***

The characterization of the existing wildlife community will involve the techniques described above. This task will be used to provide necessary information and help identify the representative wildlife species and habitats found in these areas of the Project boundary.

Task 4 – Determination of Project Effects

The objective of this task is to evaluate and provide an understanding of the effects of Project operations, both the current and any reasonable future water flow regimes, on the wildlife resources within the study area. Current condition of the existing wildlife community will be assessed through species composition, distribution within the study area, evidence of disturbance, and presence of representative or indicator wildlife species. These factors will be related to the existing and any future water regime to assess potential Project effects. A GIS overlay will also be incorporated into an overall habitat or cover type map detailing all the habitat areas found in the project area or influenced by the project. This overall habitat map will incorporate wildlife information gathered from the resource studies including attribute list data on representative and indicator wildlife species for each habitat type, habitat preference, and related wildlife guild (groups of species using the same habitats). An impact analysis will include a summary of existing literature, a matrix of each habitat/wildlife guild (e.g., emergent wetland wildlife guild), and a discussion on the seasonal effects of the project on each guild.

## 5.4 Location and Duration

This study will focus on only the high value habitats identified within the Project area or within the zone of influence near Project boundary. The schedule, timeline and required conditions for this Project area as follows:

- Task 1 - Identify High Value Habitat Areas ..... Early Spring 2004
- Task 2 - Compile Existing Information ..... Early Spring 2004
- Task 3 - Characterize the Wildlife Populations ..... Spring, Summer, and Fall 2004
- Task 4 - Determination of Project Effects ..... Winter 2004/2005

## 5.5 Data Analysis and Reporting

Survey forms will be developed for the survey and will include information on survey conditions (time, weather, etc.), species, species location (GPS readings for RTE species), habitat conditions, taxonomist, etc. Survey areas, transects, grid patterns, and point count locations will be indicated on map(s). A wildlife inventory report will be prepared summarizing the survey results. Project effects will be determined as discussed in Task 4.

# 6.0 References

Cooperrider, A.Y., R.J. Boyd, H.R. Stuart (eds.). 1986. Inventory and Monitoring of Wildlife Habitat. U.S. Dept. Inter., Bur. Land Manage. Denver, CO. 858 pp.

Crump, M.L. and N. J. Scott, Jr. 1994. Visual Encounter Surveys. Pp. 84-92 in Measuring and Monitoring Biological Diversity: Standard methods for Amphibians (Heyer ed.). Smithsonian Institution Press, Washington D.C.

EA Engineering, Science, and Technology. 2000. Botanical and Terrestrial Wildlife Resources Study for Blewett Hydroelectric Plant.

Martin, W.H., S.G. Boyce, and A.C. Echternacht (eds.). 1993. Biodiversity of the Southeastern United States: Lowland Terrestrial Communities. John Wiley and Sons. New York, New York. 502 pp.

Platts, W.S., W. F. Megahan, and G.W. Minshall. 1983. Methods for evaluating stream, riparian, and biotic conditions. USDA- Intermountain For. and Range Exp. Station. General Technical Report INT-138. Ogden UT. 70 pp.

Progress Energy. 2003. Initial Consultation Document. Section 4.6, Wildlife Resources, Rare, Threatened, and Endangered Species

Ralph, C.J., G.R. Geupel, P. Pyle, T.E. Martin, and D.F. DeSante. 1993. Handbook of Field Methods for Monitoring Landbirds. Gen. Tech. Rep. PSW-GTR-144. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. 41 pp.

Ralph, C.J., J.R. Sauer, and S. Droege, Technical Editors. 1995. Monitoring Bird Populations by Point Counts. Gen. Tech. Rep. PSW-GTR-149. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. 187 pp.

South Carolina Breeding Bird Atlas. http://water.dnr.state.sc.us/wild/bbatlas/bba.html

**Resource Working Group Overlap (check if applicable)**

**___ Water Resources Issue # ___**
**___ Land Use and Recreation Issue # ___**
**_X_ Terrestrial Resources Issue # 1 and 4**

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