PROGRESS ENERGY
YADKIN-PEE DEE RIVER PROJECT
WATER RESOURCES WORKING GROUP
ISSUES EVALUATION TEMPLATE
January 2004

Issue No. 2: Describe current reservoir aquatic resources of Project area.

1. Description of Issue

There needs to be an adequate description of the existing aquatic resources in Lake Tillery and Blewett Falls Lake. Aquatic resources include resident fish species and benthic macroinvertebrates, including mussel fauna. Terrestrial wildlife that use the reservoirs for habitat and/or feeding and shoreline and related wetlands habitats will be addressed under the Terrestrial Resource Work Group (Terrestrial RWG Issue Nos. 4, 6, and 9) and the Water RWG Issue No. 13. Key attributes of the aquatic resources in each lake include relative abundance, distribution, relative biological productivity, community trophic function, and inter-relationships with other trophic levels. The status of rare, threatened, or endangered aquatic species (i.e., robust redhorse, Carolina redhorse, highfin carpsucker) also needs to be addressed relative to species' life history/habitat needs and Project effects. Finally, there needs to be an adequate description of the existing recreational fishery resources and a review of state and federal fishery management plans and goals for the two reservoirs. Incorporation of fishery management goals into relicensing studies will ensure that any recommended protection, mitigation, or enhancement (PME) measures are consistent with these plans.

2. Project Effects

Both Blewett Falls Lake and Lake Tillery support healthy, warmwater fisheries, given the biological trophic status of each lake. Lake Tillery supports a healthy fishery for largemouth bass, crappie, striped bass, white perch, sunfish, and catfish species. Blewett Falls Lake supports a reasonable fishery for largemouth bass and black crappie, although shad and nonnative species (i.e., smallmouth buffalo, and blue catfish) dominate the fish community in this shallow eutrophic lake.

Lake Tillery has a daily fluctuation of less than 1.5 feet during the majority of the year. Progress Energy also has an informal agreement with NCWRC to hold lake level elevation in Lake Tillery as constant as practicable during the largemouth bass spawning period (April 15 – May 15). Therefore, additional efforts are made by Progress Energy to keep the reservoir fluctuations during this period within one foot. As stated above, the lake currently supports a healthy warmwater fishery[1].

Blewett Falls Lake, due to its shallow nature, intervening watershed area, and lower plant hydraulic capacity, usually has a normal daily fluctuation of approximately 2 to 4 feet when river flows are less than plant capacity of 9,200 cfs (about 75 percent of the time). When river flows exceed 9,200 cfs, Blewett Falls becomes a run-of- the- river facility. The lake maintains a reasonable sport fishery, particularly for crappie and largemouth bass[1]. The trophic structure of the reservoir aquatic community is predominantly influenced by watershed-related water quality effects-nutrient enrichment and sedimentation-which are beyond the control of Project operations. The presence of the large and significant wetland areas, particularly in the upper impoundment, are known as the Grassy Islands, indicates the current operating regime has not been detrimental to the formation or maintenance of these areas.

3. Applicable Existing Information

Several relevant sources of existing information are available to describe the current aquatic resources in the two reservoirs. Most significantly, Progress Energy has conducted contemporary surveys of the aquatic resources in each reservoir during the period of 1999-2002. These studies included quarterly or seasonal surveys of fish and macroinvertebrates and annual cove rotenone surveys of the fish community. Each reservoir was studied for a two-year period. Additionally, an intensive spring survey of the largemouth bass, sunfish, and redhorse populations was conducted in Blewett Falls Lake during April 2002.

Progress Energy has summarized and described these aquatic resource data in its Initial Consultation Document[1] published in February 2003 (see Section 4 and Appendices D through G). The 2002 aquatic resources survey data collected for Lake Tillery were not included in the ICD due to the publication deadline. These data will be summarized and compared to previously collected data. Community structure and trophic relationships of each reservoir can be assessed using previously collected data.

The North Carolina Wildlife Resources Commission (NCWRC) has also recently conducted assessments of the crappie populations in both reservoirs during 2002 and of the Tillery largemouth bass population during 2003 (personal communication with Mr. Lawrence Dorsey, NCWRC). Results of these assessments will be published in 2003 and available for use in further describing the status of these species in the reservoirs.

Historical fisheries data for each reservoir was collected by Progress Energy during 1987, 1992, and 1993[2,3,4] and the NCWRC[5,6]. APGI has collected comparable contemporary fishery data during 2001[7] for its reservoirs (High Rock, Tuckertown, Narrows, and Falls reservoirs), using the same sampling methodology employed by Progress Energy. These data can be used for regional comparative purposes to evaluate the status of fisheries resources in Tillery and Blewett Falls lakes.

The life history, distribution, and genetic makeup of the Carolina redhorse in the Pee Dee River and associated tributaries (Little and Uwharrie rivers), including both reservoirs, is currently being studied by the North Carolina State Museum of Natural Science (NCMNS) under a Progress Energy research grant. This information will be useful in determining the population status of this undescribed species in the river basin and in developing management strategies. Results of this research will be made available to RWG participants after publication by the NCMNS, which is anticipated during early 2004.

The NCWRC is currently drafting a fishery management plan for the Yadkin-Pee Dee River Basin, including the APGI and Progress Energy reservoirs. This plan is expected to available during 2003 (personal communication with Mr. Lawrence Dorsey, NCWRC).

The U.S. Fish and Wildlife Service, in cooperation with the NCWRC, South Carolina Department of Natural Resources, and National Marine Fisheries, will be developing a diadromous fish restoration plan for the Yadkin-Pee Dee River Basin, which will be available during late 2004 or early 2005 (See Water RWG Issue No. 4, "Support development of resource agency diadromous fish restoration plan for the Yadkin-Pee Dee River Basin."). This plan will be reviewed for relevance to and compatibility with reservoir fishery management objectives.

4. Study Needs

No further field studies are necessary to address this issue. Existing data collected by Progress Energy, coupled with recent NCWRC fishery assessments and its anticipated fishery management plan for the river basin, will be sufficient to address the current status of aquatic resources of each reservoir and evaluate Project effects.

Resource Working Group Overlap (check if applicable)

X Water Resources Issue # 13
___ Land Use and Recreation Issue # ___
X Terrestrial Resources Issues # 4, 6, and 9

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[1] Progress Energy. 2003. Initial consultation document. Yadkin-Pee Dee River Project. FERC No. 2206. February 2003. Submitted by Progress Energy, Raleigh, North Carolina.

[2] CP&L. 1987. Environmental surveys of Lake Tillery and Blewett Falls Lake during 1986. Carolina Power & Light Company, New Hill, NC.

[3] CP&L. 1993. Tillery Hydroelectric Plant. 1992 environmental monitoring report. Carolina Power & Light Company, New Hill, NC.

[4] CP&L. 1995. Blewett Hydroelectric Plant. 1993 environmental monitoring report. Carolina Power & Light Company, New Hill, NC.

[5] NCWRC. 1966. Blewett Falls Reservoir. North Carolina Wildlife Resources Commission, Raleigh, NC.

[6] Tatum, B. L. 1960. Yadkin and lower Catawba River reservoirs. Inventory of fish populations in lentic waters. Job Completion Report. Federal Aid in Fish Restoration Project F5R & F6R No. 1. North Carolina Wildlife Resources Commission, Raleigh, NC.

[7] APGI. 2002. Yadkin River Hydroelectric Project FERC No. 2197 NC. Project Relicensing Initial Consultation Document. September 2002. Alcoa Power Generating, Inc., Yadkin Division, Badin, NC.

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