Yadkin Project Relicensing (FERC No. 2197)
Wetlands, Wildlife, and Botanical IAG Meeting
March 2, 2005

Alcoa Conference Center
Badin, North Carolina

Final Meeting Summary

Meeting Agenda

See Attachment 1.

Meeting Attendees

See Attachment 2.

Introductions, Review Agenda

Wendy Bley, Long View Associates, opened the meeting with a review of the agenda and introductions. She explained that the draft study reports to be discussed at the meeting were distributed to the Wetlands, Wildlife, and Botanical Issue Advisory Group (IAG) in advance of the meeting. She asked for any comments on the draft reports to be submitted within 30 days or April 1, 2005. Wendy introduced Sarah Allen, Normandeau Associates, who proceeded to review the study reports.

Wetlands and Riparian Habitat Assessment Draft Report

Sarah reviewed the study objectives and study methodologies for the Wetlands and Riparian Habitat Assessment. Upon explaining that Normandeau mapped wetlands and riparian habitats within 200-ft of the Project reservoirs, Chris Goudreau, North Carolina Wildlife Resources Commission, asked if any of the wetland types extended beyond this 200-ft boundary. Sarah responded yes and explained that there are wetlands in the upper Yadkin that Normandeau did consider within the influence of the reservoir (e.g. near I-85 where the river begins to widen) and did map. She commented that for the most part, the topography dictates that most wetlands are within 200-ft of the reservoirs. Sarah indicated that the only other exception, with forested wetlands, is that they are influenced by the reservoir and other factors, such as groundwater. If the reservoir was the dominant influence, Normandeau did extend the boundary and map the wetlands beyond 200-ft.

Continuing, Sarah discussed the presence of water willow on Narrows Reservoir. Specifically, she reviewed the results of analysis that looked at the impacts of piers on water willow. Thirty-four piers with water willow were studied (18 new - since 1997 and 16 old – pre-1997). There was an average of 48 percent cover. The presence of water willow appeared to be less related to age or to pier structure. There were piers with water willow present beneath the piers, so light did

not appear to be as much of a limiting factor as they had originally thought. Shoreline use appeared to be the primary influence on water willow.

Sarah explained that in accordance with the study plan Normandeau had completed a qualitative assessment of wetland functions (e.g. flood control, sediment trapping, nutrient removal, fish and wildlife habitat, and social values). She explained that the existing wetlands at the Yadkin Project offered very little flood control value, with the exception of upper High Rock Reservoir, where riverine floodplains are still present in some relatively broad areas. As far as sediment trapping and nutrient removal, the reservoirs themselves served these functions more so than the marginal wetlands (there simply is not much opportunity for the water to get into the wetlands). She noted that the exception to this was again upper High Rock Reservoir below I-85 (described as the "delta" area), where black willow dominated wetlands are present.

Continuing, Sarah explained that more than 90 percent of the wetlands in High Rock occur in the delta which begins just downstream of the I-85 bridge. This area provides important fish habitat, especially for piscivorous (fish-eating) species. She noted that emergent wetlands in the other reservoirs are also important for fish habitat. For fish, the functional attribute of the wetlands is cover (a large number of stems). Sarah noted that the wetlands also have recreational and social values for hunting, fishing, and aesthetics. However, she noted that adjacent landowners frequently clear the wetlands to provide a view of the reservoir(s).

Sarah reviewed the impact of current Project operations on each of the reservoirs. She explained that in High Rock Reservoir, there are riverine and lacustrine (reservoir) influences. The vast majority of wetlands on High Rock are forested and scrub-shrub wetlands located on the sediment bars in the upper portion of the reservoir. Sarah explained that black willow is the one species that can tolerate both a drawdown and flooding, so it dominates in many areas.

Sarah described the wetlands on Tuckertown Reservoir as well-developed, with a diverse emergent fringe. She explained that reservoir fluctuations are frequent on the weekends, but fluctuations are sufficiently low (three feet or less) to allow development of emergent beds. Sarah added that water willow is dominant at Narrows Reservoir. She noted that water willow can colonize rip-rapped areas quite well. She said that at Falls Reservoir there are few wetlands, with little potential for them because the topography is not conducive to wetlands development.

Sarah discussed the impact of watershed development on the Project reservoirs. She noted that there is a tremendous sediment load coming from upstream sources, outside of the influence of the reservoirs. She noted that there are also local, shoreline developmental impacts to the reservoirs, such as physical structures, piers, bulkheads, beaches, disturbance and removal of vegetation, wave scour from boats and jet skis, and land management.

Sarah reviewed the evaluation of alternative reservoir operations at High Rock, Tuckertown, and Narrows reservoirs (Falls was not addressed because it is a small run-of-river reservoir). She noted that the alternatives evaluated do not reflect any particular proposal for future operations but were selected to represent a range of potential future operating conditions. At High Rock, Normandeau evaluated near full, year round; extended near-full season; and lower average reservoir elevations, with a deeper drawdown alternatives. At Tuckertown, Normandeau

evaluated greater short-term evaluations and at Narrows they examined an increase in the frequency and magnitude of a drawdown.

Sarah explained that under a near full, year round scenario at High Rock there would be an increase in shoreline emergent vegetation but there would also be an expected loss of black willow in the delta area, due to wetter conditions and an increase in shoreline emergents. Larry Jones, High Rock Lake Association, asked Sarah about her statement that only narrow emergent bands would develop at High Rock under the near full year round scenario. She acknowledged that in some coves, the topography would allow for development of some wider emergent bands and more extensive wetlands. However, she explained that the lack of light penetration (due to both turbidity and algal blooms) at the reservoirs also limits growth potential. Larry followed up with a question to Sarah if water clarity would improve with a change in Project operations to maintain a more constant water level. She said that she felt that unfortunately the continued input of sediments and nutrients (which lead to algal blooms) from the tributaries would maintain the existing conditions. She noted that Tuckertown Reservoir has a fairly stable water level, yet there is not much light penetration.

Under the extended near full scenario at High Rock, Sarah explained that NAI would anticipate a decline in black willow, and more shoreline vegetation, with less diversity (mostly water willow).

Under a lower average pond level, with a deeper drawdown at High Rock Reservoir scenario, Sarah predicted a loss of vegetation in the delta area. She noted that black willow would expand in most years, but there could be heavy black willow mortality in wet years. She predicted no increase in emergent wetlands under this scenario.

At Tuckertown, under an increase in short-term fluctuations, Sarah said that there could be a reduction in diversity and extent of emergents and aquatic beds, which could in turn cause a loss of wildlife diversity. Water willow would then become the dominant species.

Sarah explained that a winter drawdown at Narrows Reservoir could desiccate and freeze water willow. Greater drawdowns/fluctuations in the summer may not impact the water willow, so long as frequent refill occurred. Sarah suggested that a combination of the two could exceed the tolerance of the water willow and cause a substantial decline.

At the conclusion of her presentation, Sarah entertained questions on the draft study report. Larry Jones indicated that he was very concerned that the report failed to consider the gains [in wetland vegetation] that would be made at High Rock under the near full year round reservoir management regime. Larry stated that the draft report, as written, strongly suggests that there would be a net loss in wetlands under that scenarios and suggested that the report needed to put more emphasis on the discussion of how emergent wetlands would likely increase in many of the shallow water areas. Larry asked if the predicted increase in emergent wetlands at High Rock under a near-full year round water level scenario could be quantified in some way. Sarah responded that quantification would be difficult to do. Larry suggested that there is information available (e.g. topography and substrate information) to help quantify the gains. Sarah asked Larry if he was suggesting that more emphasis should be given to emergent wetlands. If so, she

agreed that emergents would move into High Rock under a different water level regime. She said that if the reservoir was at full pond, there would be extensive wetland development. She noted that the draft report explained this, but agreed that perhaps that portion of the discussion could be expanded.

Wilson Laney, US Fish and Wildlife Service, suggested that the report be modified to include a table showing the projected changes in vegetation, under various operating scenarios. Chris Goudreau noted that the tradeoffs in value should also be assessed, from a functional perspective, at least qualitatively.

Andy Abramson asked when the GIS data layers from the assessment would be available to the IAG. Wendy Bley said that the data layers would be available when the study work was complete and final. However, before the GIS data layers were made available to participants, Wendy noted that there was a need to discuss what format the data would be provided in, and for what purpose it would be used. Wendy said that she would talk with Gene Ellis, APGI, about the distribution of the GIS data. Sarah Allen noted that some of the data layers include sensitive information (e.g., RTE species locations). Sarah said that Normandeau could produce maps that contain most of the information that people are looking for.

Transmission Line and Project Facility Habitat Assessment Draft Report

Sarah reviewed the study objectives and study methodologies of the Transmission Line and Project Facility Habitat Assessment. Chris Goudreau asked about the habitats along the transmission line corridors. Sarah answered that the habitats are a mixture of grassland and shrub land. Sarah summarized the results of the assessment. She said that at the dam facilities, vegetation is managed in the substation and the immediate surrounds of the facilities. The wildlife habitat in these areas is of relatively low quality; invasive species are abundant.

Sarah said that along the Falls transmission line corridor Normandeau found a timber rattlesnake and three listed plant species. No rare species were found on the Narrows transmission line. The dominant vegetation in the corridors is shrub-grassland mix. Normandeau identified 12 invasive species in the corridors. Generally, the transmission lines support important open habitat. The timber rattlesnake found was gravid and racerunners were also found in the corridor. She noted that two wetlands occur on the Falls corridor, and one of them contains a vernal pool that may support amphibian species such as the mole salamander.

Next, Sarah reviewed APGI's current management practices on the corridors. She said that APGI maintains the transmission line corridors by mowing, cutting, and herbicide application. Sarah said that there are some short-term impacts, such as logging to widen the corridors (in response to a 2003 outage), to rare species. She noted that there are long-term benefits for common wildlife. Sarah noted that eastern box turtles were extremely abundant in the power line cuts.

In conclusion, Sarah suggested that there be a periodic review of clearing practices along the transmission line corridors to minimize impacts and modifications to routine maintenance to protect known habitats. Todd Ewing, NCWRC, asked that a discussion be added about the

feasibility of managing for the bobwhite quail. Sarah explained that Normandeau made no specific management recommendations for any one particular species.

RTE Species Inventory Draft Report

Sarah reviewed the study objectives and study methodologies of the RTE Species Inventory. She said that 68 species of terrestrial vascular plants, mammals, amphibians, reptiles, and terrestrial insects (including odonates) were reviewed. She noted that RTE fish, aquatic invertebrates, and birds were included in separate studies. Of the 68 species reviewed, 14 were priority species, 17 were secondary species, 5 were transmission line species, and 32 species were excluded (as agreed to by the IAG in the Final Study Plan).

Normandeau worked with a local botanical expert and a local herpetologist to conduct field surveys during the 2004 growing season. Nine plant species were found (7 on the reservoirs and 2 on the Falls transmission line). Most of the species were found in terrestrial settings, which are not impacted by reservoir hydrology. Sarah indicated that the transmission line species may ultimately benefit from the corridor widening. She noted that fire suppression and mature forests do not favor many woodland rarities. She also noted that in one location there were some invasive plants encroaching on a habitat occupied by several rare species (Falls scour zone).

Sarah explained that the Yadkin River goldenrod, and other species in the scour zone, are species that could be influenced by reservoir operations. These species appear to require the occasional scour that occurs during high releases from Narrows Dam. Sarah noted that there was a vernal pool that was checked for RTE species in this area. Chris asked Sarah if this was the only vernal pool found at the Project. She confirmed that it was. She noted that one important feature of a vernal pool is that they are usually fishless, which is important for species that breed in such habitats.

Larry Jones noted that the RTE species map did not show anything around High Rock Reservoir. Sarah said that there was one species there, the Amorpha. Larry asked if the absence of RTE species around High Rock reservoir would tend to suggest that there might be an impact of the water level fluctuations on the presence of rare species. Sarah noted that High Rock simply does not have the proper habitats to support some of these species, such as the scour zones below Narrows. She added that there were some species sought at High Rock, but none were found. In any event, Sarah noted that with few exceptions, the RTE species found throughout the Project were terrestrial species, not impacted by reservoir operations or hydrology.

IEPP Species Draft Report

Sarah reviewed the study objectives and study methodologies for the IEPP Species Inventory. She said that a list of 32 species was developed for search purposes (7 aquatic priority species, and a secondary list of 7 aquatic species and 18 terrestrial species). Sarah indicated that three invasive aquatic species were found: hydrilla (in one small location on Tuckertown), Uruguay waterprimose, and water lettuce (Tuckertown and Badin, a few scattered specimens). Many more terrestrial species were found in various locations including transmission lines and forested wetlands.

Sarah said that based on earlier reports, she had anticipated finding Brazilian elodea and Nais minor, but neither was found. She speculated that the drawdown in 2002 may have eliminated them from High Rock. Larry Jones asked how areas of invasive aquatic plants were established. Sarah explained that often invasives look for exposed shorelines and coves. Chris Goudreau asked if it was possible that some of the species not found were just missed because of the excessive turbidity. Sarah agreed that it was possible. Chris thought this possibility should be reflected in the report. Sarah indicated that they found several look-alike native species, which resemble exotics, so the previous reports could be based on mis-identifications.

Sarah showed a map from the report that highlighted reservoir areas that NAI felt were vulnerable to future invasion by aquatic IEPPs. Larry Jones asked why there were potential areas for [IEPP] colonization on High Rock, but not on Tuckertown. Sarah noted that some of the areas mapped on Tuckertown were viewed as an occurrence zone, rather than a potential area.

Sarah concluded that current Project operations do not appear to be enhancing aquatic invasive populations. She suggested that alternative operating scenarios could enhance the presence of aquatic invasives because they like stable water levels and high nutrient inputs. With respect to terrestrial invasives, she said that on the transmission lines and around the dams, invasives were most abundant in areas of intensive vegetation management. Most of these species were low-density, widespread, and well-integrated into wetland and upland forests and therefore, eradication would be difficult. Sarah recommended spot removal in cases where the species are impacting native rare species.

Wrap-up and Next Steps

Wendy asked that any additional comments on the draft study reports be submitted no later than April 1, 2005.

The meeting adjourned at about 11:30 a.m.

Attachment 1 - Meeting Agenda

Yadkin Project
(FERC No. 2197)
Communications Enhanced Three-Stage Relicensing Process

Wetlands, Wildlife and Botanical Issue Advisory Group Meeting

Wednesday, March 2, 2005
Alcoa Conference Center
Badin, North Carolina

9:00 AM – Noon

Preliminary Agenda

1. Introductions, Review Agenda
2. Review and Discuss RTE Species Draft Report
3. Review and Discuss Wetlands and Riparian Habitat Draft Report
4. Review and Discuss Transmission Line and Project Facility Habitat Assessment Draft Report
5. Review and Discuss IEPP Species Draft Report
6. Wrap-up and Next Steps

Attachment 2 - Meeting Attendees

Name	Agency/Organization
Andy Abramson	Land Trust
Chris Goudreau	NC Wildlife Resources Commission
Donley Hill	US Forest Service
Gene Ellis	APGI
Larry Jones	High Rock Lake Association
Robert Petree	SaveHighRockLake.org
Sarah Allen	Normandeau Associates
Steve Reed	NC Division of Water Resources
Wendy Bley	Long View Associates
Wilson Laney	US Fish and Wildlife Service