

SOUTH CAROLINA ELECTRIC & GAS COMPANY

COLUMBIA, SOUTH CAROLINA

LAKE MURRAY WOOD STORK SURVEYS 2006 SUMMARY REPORT

MARCH 2007

Prepared by:

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Energy & Water Resource Consultants
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West Columbia, SC 29170

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**LAKE MURRAY WOOD STORK SURVEYS
2005 SUMMARY REPORT**

1.0 INTRODUCTION

The wood stork was federally-listed as endangered on February 28, 1984 (USFWS 1997). The only stork native to North America, wood storks occurred historically throughout the coastal plain of the southeastern U.S. and Texas. The current U.S. breeding population has declined from an estimated 20,000 pairs in the 1930's to between 5,500 and 9,500 in recent years, with declines attributed primarily to loss of suitable foraging and nesting habitat. Currently, nesting of the species in the U.S. is thought to be limited to the coastal plain of South Carolina, Georgia, and Florida (USFWS 1997). No critical habitat has been designated for this species.

Wood storks are highly colonial and typically nest in large rookeries and feed in flocks (USFWS 1997). Typical foraging habitats include narrow tidal creeks, flooded tidal pools, and freshwater marshes and wetlands. Like most other wading birds, storks feed primarily on small fish. Because wood storks feed by tactilocation, depressions where fish become concentrated during periods of falling water levels are particularly attractive for foraging (USFWS 1997). Storks typically use tall cypresses or other trees near water for colonial nest sites. Nests are usually located in the upper branches of large trees and several nests are typically located in each tree. Trees utilized for nesting and roosting typically provide easy access from the air and an abundance of lateral limbs (USFWS 1997).

Although they are primarily birds of freshwater and brackish wetlands along the coastal plain, wood storks were reported from several locations in the Lake Murray area in recent years. Specifically, a local resident reported observing wood storks feeding at several locations in the Bush River and Big Creek embayments of upper Lake Murray during the period from approximately 2001 through 2004(Appendix A, Attachment A, Figure 1). In addition, approximately 60 storks were observed feeding at various locations in the middle Saluda River and the upper portion of Lake Murray during an aerial survey for bald eagles performed by the South Carolina Department of Natural Resources (SCDNR) in early August 2004 (Appendix A,

Attachment A, Figure 2). In response to these sightings, SCE&G, in coordination with the USFWS and SCDNR, conducted an aerial reconnaissance survey in the upper portions of Lake Murray on August 27, 2004. During this survey, biologists from SCDNR and Kleinschmidt documented approximately 60 wood storks foraging within the Saluda Project Boundary, as well as two potential nesting sites along the floodplain of the middle Saluda River (See detailed study observations in Attachment A of Appendix A).

Under the current FERC operating license, SCE&G is required to submit 5 year updates to the Lake Murray Shoreline Management Plan (FERC Order ¶ 61,332, June 1, 1984). In an order approving and amending SCE&G's most recent update, which was submitted on February 1, 2000, the FERC requested that SCE&G designate the two identified wood stork "roosting and foraging habitats" near Bush River as "conservation areas" (FERC Order No. 20040623-3015)." Further, the order required that these areas, as well as all other wood stork roosting and foraging habitat identified within the project boundary, remain protected and undeveloped until new evidence is submitted to indicate that protection of these areas is not warranted. In response to the wood stork sightings on Lake Murray and the subsequent FERC order, SCE&G initiated consultation efforts with the SCDNR and USFWS and developed a study plan aimed at documenting where and under what conditions wood storks are utilizing habitats within the Saluda Hydro Project Boundary and in the project vicinity. A number of specific study objectives were also identified in consultation with the resource agencies and are outlined in the attached Lake Murray Wood Stork Study Plan (Appendix A).

2.0 METHODS

Suitable habitat in the Saluda Project vicinity was surveyed monthly using fixed-wing aircraft (typically a Cessna 172) from February through November 2006 for the presence of wood storks (Table 1). The February through April surveys were conducted by SCDNR personnel (Tom Murphy) in conjunction with Avian Vacuolar Myelinopathy (AVM) / bald eagle surveys, while the remainders were conducted by biologists from Kleinschmidt Associates. During a typical survey, the Saluda River arm of Lake Murray and the river upstream to approximately Silverstreet were investigated at low altitude (approximately 1000 ft), focusing particularly on the sites where storks have previously been observed and the potential nesting areas at Silverstreet and Tosity Creek (Appendix A, Attachment A, Figures 1 - 5). During flights to and from the sites in the upper lake, the main body of the lake was flown at moderate altitude (1500 – 2000 ft) and scanned for presence of wading birds. Birds suspected of being wood storks (i.e., white birds) were circled at lower altitude and airspeed, and examined with binoculars until a positive identification was made.

Table 1: Summary of 2006 Lake Murray Wood Stork Surveys

DATE	PERSONNEL	OBSERVATIONS
2/22/06	Tom Murphy - SCDNR	No wood storks. Nests identified during 2004 utilized by nesting blue herons.
3/20/06	Tom Murphy - SCDNR	No wood storks. Nests identified during 2004 occupied by incubating great blue herons.
4/28/06	Tom Murphy - SCDNR	No wood storks. Significant foraging habitat present along Saluda River above Lake Murray. Approx. 40 great blue heron nests at the Silverstreet and Tosity Creek nesting sites.
5/31/06	Shane Boring - Kleinschmidt	Wading birds observed in drying pools off Saluda main channel above Lake Murray; however, no wood storks.
6/30/06	Shane Boring - Kleinschmidt	Scattered foraging great blue herons and great egrets, but no wood storks.
8/04/06	Jennifer Summerlin - Kleinschmidt	No wood storks. Scattered great egrets.
8/26/06	Shane Boring - Kleinschmidt	Moderate wading bird activity. A single wood stork, likely a juvenile, observed soaring over Saluda River upstream of Lake Murray.
9/15/06	Shane Boring - Kleinschmidt	12-14 wood storks foraging in wetlands off of the Saluda mainstem upstream of Lake Murray: 6 foraging in a farm pond off of the Saluda mainstem just downstream of the Highway 121 bridge and 4-6 (4 confirmed, 2 suspected) soaring and feeding in wetlands adjacent to the wood chipping plant near Silverstreet.
10/26/06	Tom Murphy - SCDNR	No wood storks; many wetlands along Saluda above Lake Murray dry.
11/27/06	Tom Murphy - SCDNR	Habitat along Saluda, which were dry during 10/06 survey, refilled by rains, but no wood storks.

Table 2: Summary of 2005 Lake Murray Wood Stork Surveys

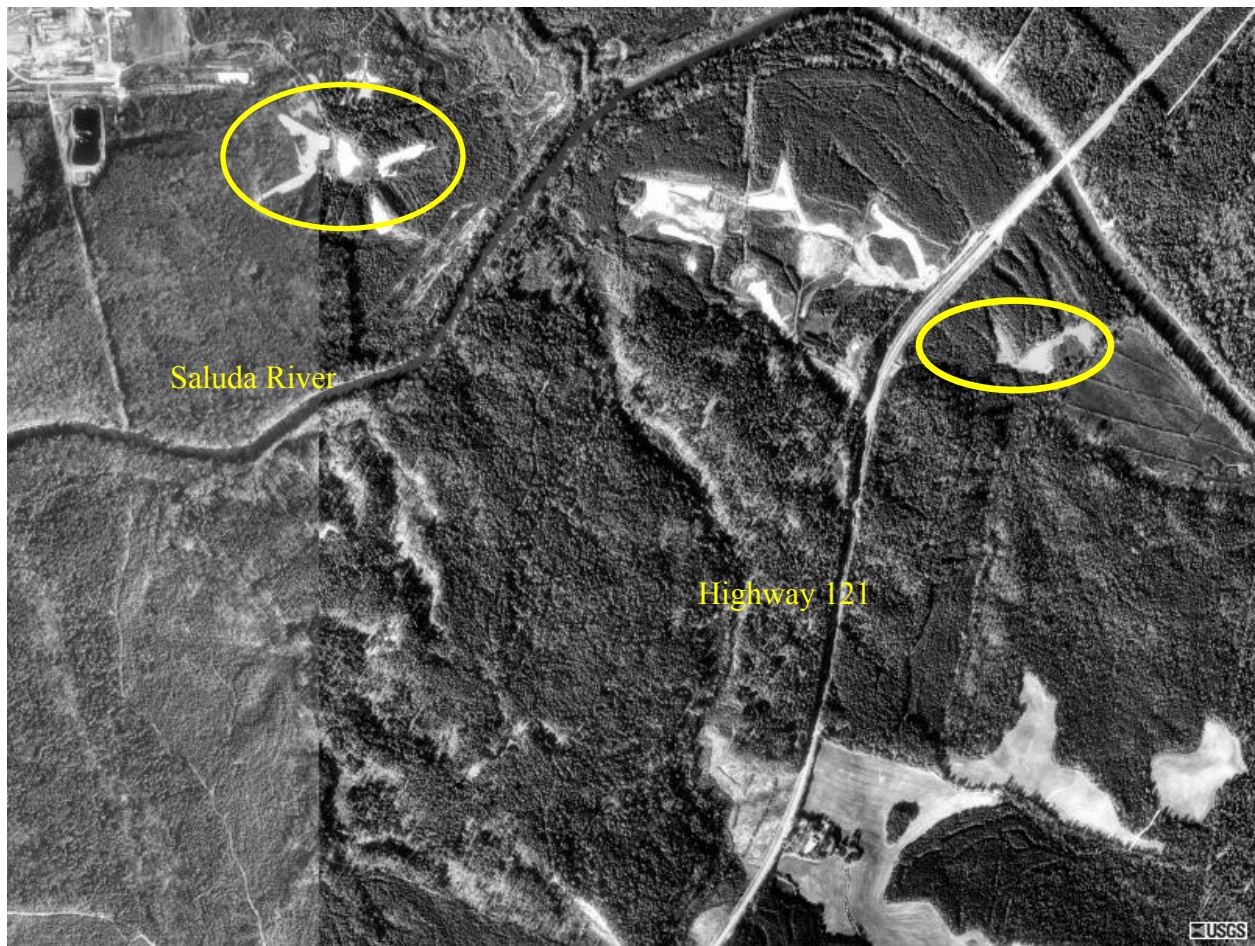
DATE	PERSONNEL	OBSERVATIONS
2/18/05	Tom Murphy, SCDNR	No wood storks. Approximately 1/3 of the approximately 22 nests identified during 2004 utilized by nesting blue herons.
3/29/05	Tom Murphy, SCDNR	No wood storks. Remainder of nest identified during 2004 occupied by incubating great blue herons.
5/4/05	Tom Murphy, SCDNR	No wood storks. 13 and 15 great blue heron nests respectively at the Silverstreet and Tosity Creek nesting sites.
6/7/05	Shane Boring, Kleinschmidt	No wood storks. Tosity Creek and Silverstreet nests occupied by pre-flight juvenile great blue herons.
6/30/05	Shane Boring, Kleinschmidt	No wood storks. All juvenile great blue herons at Tosity Creek and Silverstreet sites fledged and nests vacant.
7/27/05	Shane Boring, Kleinschmidt	No wood storks. Scattered great blue herons and great egrets.
8/26/05	Shane Boring, Kleinschmidt	No wood storks. Scattered great blue herons and great egrets.
9/30/05	Shane Boring, Kleinschmidt	No wood storks. Scattered great blue herons and great egrets.
10/28/05	Shane Boring, Kleinschmidt	No wood storks. Waders very active; numerous solitary great blue herons and flocked great egrets.
11/23/05	Shane Boring, Kleinschmidt	No wood storks. Wading birds very abundant; numerous flocks of foraging great egrets.

3.0 RESULTS

No wood storks were observed during more than 13 hours of aerial surveys performed over the 10 month period from February through November 2005 (Table 2). During the 2006 survey season, wood storks were observed during August and September (Table 1). Specifically, single juvenile wood stork was observed soaring above the Saluda River upstream of Lake Murray during the August survey, and an additional 12 – 14 were observed in the same general area during the September 15, 2006 survey - 6 foraging in a farm pond off of the Saluda mainstem just downstream of the Highway 121 bridge and 4 to 6 (4 confirmed, 2 suspected) soaring and feeding in wetlands adjacent to the wood chipping plant near Silverstreet (Figure 1).

No wood stork nesting was observed at the Tosity Creek or Silverstreet sites, which were identified as being potential wood stork nesting areas during the 2004 reconnaissance survey and associated agency consultation (see Meeting Notes, Appendix B). Surveys revealed these to be great blue heron nests, with both nesting adults and pre-flight juveniles observed during both 2005 and 2006 (Tables 1 & 2).

Figure 1: Aerial Photograph of Locations of Wood Stork Sightings During September 2006 Survey (Circles denote locations where wood storks were observed)



4.0 DISCUSSION

The lack of nesting in the study area is consistent with the known life-history of wood storks as a coastal nesting species (USFWS 1996). In South Carolina, all nesting colony sites currently known are located in the coastal plain, and primarily in the coastal counties (Murphy 2005).

Aerial survey observations suggested that wood storks likely did not utilize Lake Murray and the middle Saluda River upstream of the impoundment for nesting, foraging, roosting, or other activities during the 2005 survey period. In 2006, approximately 12 – 14 wood storks were observed in areas of the Saluda Basin upstream of Lake Murray on September 15, 2006. Timing of wood stork observations during 2006 (August and September), suggested that these were likely post-dispersal migrants from coastal nesting sites. During the late-summer/early-fall period, when chicks have fledged and adults are no longer tied to the nest site by chick rearing, adult and juvenile wood stork dispersing from nesting colonies often undertake extensive migrations to exploit ephemeral food resources prior to returning to coastal areas for the winter months. In South Carolina and Georgia, young-of-year storks typically fledge during July and August, but return to the nest for an additional 3 to 4 weeks to be fed before finally dispersing from the colony site in August and September (USFWS 1996). Storks dispersing post-breeding from southern US colonies (Florida, Georgia, and South Carolina) have been documented as far north as North Carolina and as far west as Mississippi and Alabama (USFWS Recovery Plan, 1997).

Limited wood stork occurrences observed during 2005 and 2006 suggest that the relatively large number of storks observed during 2004 may have been attributed to favorable feeding conditions created by the drawdown of the reservoir during construction of the Saluda Backup Dam. Good feeding conditions for wood storks have been characterized as relatively calm water, with water depths between 2 – 10 inches, and where the water column is not cluttered by dense aquatic vegetation (Coulter and Bryan 1993). Reduced overall pool elevation associated with the drawdown likely increased the potential for fish entrapment in shallow embayments during periods of falling water levels, which has been cited as an important factor in wood stork foraging sites (Kahl 1964, Kushlan et al. 1975). This was likely the case during the reconnaissance survey on August 27, 2004, when USFWS and Kleinschmidt biologists observed

approximately 60 wood storks foraging in a shallow embayment near the mouth of Beaverdam Creek in the Saluda River Arm of Lake Murray during falling water (Appendix A, Attachment A, Figure 3).

5.0 *MANAGEMENT IMPLICATIONS*

Wood storks in South Carolina readily change foraging sites in response to prevailing hydrology (Murphy 2005), as was demonstrated by the large number of storks utilizing upper portions of Saluda Project vicinity during the Lake Murray drawdown. Because they have potential to occur anywhere within the Project in response to hydrologic conditions, continued designation of the Bush River and Big Creek areas as wood stork research or conservation areas is not warranted and should be discontinued. Further, usage of the Saluda Project area appears limited to post-dispersal foraging migrations (i.e. no nesting). Because these types of migrations are typical of the species during the post-breeding season, continued surveys of the area are likely not warranted.

6.0 CONSULTATION HISTORY

SCE&G met with representatives from the USFWS and SCDNR via conference call on February 8, 2007, to discuss an earlier version this report and the status of wood stork monitoring on Lake Murray (See meeting notes, Appendix C). Both SCDNR and USFWS concurred with the findings of the draft report, and due to the limited nature of stork activities observed to date in the Project vicinity (See Sections 5.0 and 6.0 above), agreed with SCE&G's proposal to discontinue further wood stork surveys on Lake Murray. Agency staff urged SCE&G to maintain a mechanism for informally tracking wood stork usage on Lake Murray. As such, the following proposals were developed in consultation with the agencies:

- Development of a Rare, Threatened and Endangered Species Public Awareness Program, which will include wood storks and provide a means for the public to report wood stork sightings;
- Continued documentation of any wood stork observed during the Lake Murray waterfowl surveys, as well as the SCDNR's bad eagle surveys; and
- Re-initiation of consultation with SCDNR and USFWS if an increase in wood stork activity is observed on Lake Murray.

7.0 LITERATURE CITED

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- Kahl, M.P., Jr. 1964. Food ecology of the wood stork (*Mycteria Americana*) in Florida. Ecological Monographs 34:97-117.
- Kushlan, J.A. 1979. Prey choice by tactile foraging wading birds. Proceedings of the Colonial Waterbird Group 3:133-142.
- Murphy, T.M. 2005. Memo: South Carolina Wood Stork Survey Results (1981-2005). South Carolina Department of Natural Resources, August 29, 2005. 7 pp.
- U.S. Fish and Wildlife Service (USFWS). 1996. Revised Recovery Plan for the U.S. Breeding Population of the Wood Stork. U.S. Fish and Wildlife Service, Atlanta, Georgia. 41 pp.

APPENDIX A
SALUDA HYDROELECTRIC PROJECT
WOOD STORK STUDY PLAN

SALUDA HYDRO PROJECT (FERC NO. 516) STUDY PLAN

Study Plan Name: Wood Stork Monitoring Plan
Applicable Hydro Projects: Saluda Hydro FERC No. 516

I. Introduction

Contained in the Federal Energy Regulatory Commission's (Commission or FERC) Order issuing a New Operating License for Saluda Hydro (FERC Order ¶ 61,332, June 1, 1984), are conditions that require South Carolina Electric & Gas Company (SCE&G) to submit 5 year updates to the Project shoreline management plan. SCE&G submitted the most recent five-year update to the Commission on February 1, 2000. The Commission issued an order approving and modifying the updated shoreline management plan on June 1, 2004 (FERC Order No. 20040623-3015). Item H of the order requires that SCE&G, in consultation with the South Carolina Department of Natural Resources (SCDNR) and the U.S. Fish and Wildlife Service (USFWS), designate two identified wood stork "roosting and foraging habitats" near Bush River as "conservation areas." Further, the order requires that these areas, as well as all other wood stork roosting and foraging habitat identified within the project boundary, remain protected and undeveloped until new evidence is submitted to indicate that protection of these areas is not warranted.

In response, SCE&G initiated consultation efforts with the SCDNR and USFWS. Following an initial reconnaissance survey to confirm wood stork activity within the project area (See Survey Trip Report; Attachment A), a meeting was held on September 17, 2004, among SCE&G and the resource agencies to begin development of a framework for a long-term study plan (See meeting notes; Attachment B).

II. Summary of Existing Data

The wood stork was federally-listed as endangered on February 28, 1984 (USFWS 1996). The only stork native to North America, wood storks occurred historically throughout the coastal plain of the southeastern U.S. and Texas. The current U.S. breeding population has declined from an estimated 20,000 pairs in the 1930's to between 5,500 and 9,500 in recent years, with declines attributed primarily to loss of suitable foraging and nesting habitat. Currently, nesting of the species in the U.S. is thought to be limited to the coastal plain of South Carolina, Georgia, and Florida (USFWS 1996). No critical habitat has been designated for this species.

Wood storks are highly colonial and typically nest in large rookeries and feed in flocks (USFWS 1996). Typical foraging habitats include narrow tidal creeks, flooded tidal pools, and freshwater marshes and wetlands. Like most other wading birds, storks feed primarily on small fish. However, because wood storks feed by tactilocation, depressions where fish become concentrated during periods of falling water levels are particularly attractive sites (USFWS 1996). Storks typically use tall cypresses or other trees near water for colonial nest sites. Nests are usually located in the upper branches of large trees and several nests are typically located in each tree. Trees utilized for nesting and roosting typically provide easy access from the air and an abundance of lateral limbs (USFWS 1996).

As previously noted, wood storks are primarily birds of freshwater and brackish wetlands along the coastal plain. However, wood stork activity has been reported by local residents at several locations within the Lake Murray area in recent years (See Attachment A, Figure 1). In addition, on August 11, 2004, Tom Murphy of the SCDNR observed approximately 60 storks feeding at various locations in the middle Saluda River area and the upper portion of Lake Murray while conducting an aerial survey for bald eagles (See Attachment A, Figure 2). In response to these sightings, SCE&G, in coordination with the USFWS and SCDNR, conducted an aerial reconnaissance in the upper portions of Lake Murray on August 27, 2004 (See Survey Trip Report; Attachment A). During this reconnaissance survey, biologists from SCDNR and Kleinschmidt documented approximately 60 wood storks foraging within the Saluda Project Boundary, as well as two potential nesting sites along the floodplain of the middle Saluda River (See detailed study observations in Attachment A).

III. Study Objectives

The overall study objective is to document where and under what conditions wood storks are utilizing habitats within the Saluda Hydro Project Boundary and in the project vicinity. In consultation with the SCDNR and the USFWS, a number of specific objectives have been identified (See September 17, 2004, meeting notes; Attachment B), including the following:

- Examination of the potential influence of the Lake Murray drawdown on the presence of storks in the area (i.e. whether and/or to what degree storks will continue to utilize the project once the reservoir is returned to its usual operating range).
- Documentation of nesting (i.e., whether the nests observed during 2004 were in fact stork nests, and if so, if successful reproduction is taking place).
- Documentation of foraging habitat and roosting areas, in particular, documentation of important night roosts (if they exist).
- Examination of foraging conditions over multiple years and a range of water levels.
- Documentation of seasonal usage by various age classes (i.e., young-of-year, immature, adult).

The following tasks must be undertaken and completed in order to meet the above objectives:

- a) Review and compilation of all credible anecdotal accounts of wood stork occurrences within the Saluda Hydro Project Boundary and in the project vicinity.
- b) Completion of surveys to document current wood stork usage of areas within the Saluda Hydro Project Boundary and in the project vicinity.

IV. Geographic and Temporal Scope

The Saluda Hydro Project Boundary will be the focal point of the wood stork study. The study area will include the main body of Lake Murray and the Middle Saluda River, from the Saluda Dam upstream to the vicinity of Silverstreet and including all tributaries within the project boundary.

Surveys for wood storks will commence in mid-February 2005 and continue through the fall of 2009 (5 years of study). On an annual basis, surveys will begin in mid-February, when storks would be expected to arrive in South Carolina, and continue on a monthly basis through November or until it is determined, in consultation the resource agencies, that storks have left the area.

In consultation with the USFWS and SCDNR, SCE&G proposes to designate the two wood stork foraging and roosting habitats cited in the FERC's order, as well as all other areas within the project boundary where wood stork activity has been documented (See Figures 1 and 2; Appendix B), as temporary Environmental Research Areas. These Environmental Research Areas will remain protected and undeveloped throughout the execution of this study plan. Upon completion of the study, a determination will be made in consultation with the resource agencies, as to whether or not the areas should be granted permanent protected status. If further protection of these areas is deemed necessary, any parameters, conditions, and/or requirements of that protective status will also be determined at this time.

V. Methodology

- a) To the degree practicable, SCE&G and/or their consultant will coordinate with local residents to compile all credible occurrences of wood stork activity within the Saluda Hydro Project Boundary and in the project vicinity. Anecdotal occurrence will be considered credible only if they are from experienced observers (i.e., those who demonstrate the knowledge needed to identify wood storks). For all occurrences, information regarding the number of storks, where they were observed, the time of year when they were first and last observed, and the time of day when the birds arrived and departed on a daily basis will be obtained, if available. An attempt also will be made to acquire photo documentation of occurrences whenever possible. While anecdotal, such information has the potential to provide significant insight into the daily movements of storks utilizing the area, as well as annual temporal patterns (i.e., when they first arrive and depart from the region).
- b) Aerial surveys to document wood stork activity within the Saluda Hydro Project Boundary will be conducted on a monthly basis during the 2005 through 2009 nesting and post-breeding seasons (mid- February through approximately November; See Section IV – Geographic and Temporal Scope). Aerial surveys will be conducted from fixed-wing aircraft, by qualified SCDNR, SCE&G, and/or Kleinschmidt staff. Aerial surveys initially will focus on those locations where wood stork activity was observed during the 2004 wood stork reconnaissance and bald eagle surveys and where stork activity has been reported by local residents (See Trip Report from 8/27/04). At each location where storks are observed, the following data will be collected:
 - An estimate of the total number of storks present.
 - An estimate of the numbers of storks of various age classes present (i.e., adult, juvenile, young-of-year).
 - Evidence of nesting activity (i.e., evidence of egg-laying, nest construction and/or maintenance, presence of pre-flight juveniles).
 - Other activity observed (i.e., foraging, roosting, loafing).
 - General description of the habitat being utilized.
 - GPS coordinates of the location (Lat/Long).

Supplemental ground surveys will be conducted as deemed necessary based on aerial surveys (i.e., to confirm nesting, confirm the number of individuals of various age classes, determine the presence of a night roost, etc.). Appropriate ground survey methods will vary on a site-by-site basis and thus will be developed on an as-needed basis in consultation with the USFWS and SCDNR.

VI. Schedule and Required Conditions

- a) Compilation of all available anecdotal accounts of wood stork occurrences in the project vicinity will commence in November 2004 with the bulk of the information expected to be compiled by February 1, 2005. As will be discussed in greater detail below, an annual report will be issued upon completion of each field season. Results of the initial data gathering effort will be reviewed in consultation with the resource agencies and subsequently included in the 2005 annual report. As with any such effort, additional information will undoubtedly develop throughout the course of the study and will be duly incorporated into that year’s annual report.
- b) For the 2005 nesting season, aerial surveys for wood storks will commence in Mid- February of 2005 and continue through approximately November of 2005 (See Section IV – Geographic and Temporal Scope). Surveys will follow this schedule on an annual basis through October 2009 (5 years of study). A brief e-mail update will be distributed to the Wood Stork Work Group following each survey. In addition, an annual report will be issued upon completion of each field season and distributed to the Group to provide an update on the study’s progress. The Group will subsequently meet in person or via conference call to discuss the study findings and potential modifications to the study scope.

A more detailed report will be prepared following the second year of the study for inclusion in the SCE&G’s Application for New License, which is slated for submission to the FERC in 2008.

VII. Use of Study Results

Results of the wood stork study will be used as an information resource during discussion of relicensing issues with the SCNDR, USFWS, relicensing issue working groups and other relicensing stakeholders. Specifically, study results will be used to assess, in coordination with the resource agencies, whether permanent wood stork conservation measures are warranted and to help identify appropriate conservation measures.

VIII. Study Participants

	NAME	ORGANIZATION	PHONE	E-MAIL
Applicant Leads	Stephen E. Summer Shane Boring	SCANA Services, Inc. Kleinschmidt	(803)217-7357 (803)822-3177	ssummer@scana.com shane.boring@kleinschmidtusa.com
Agency Leads	Tom Murphy Ed Eudaly	SCDNR USFWS	(843)844-2473 (843)727-4707, Ext. 13	murphyt@dnr.sc.gov Ed_Eudaly@fws.gov
Additional Applicant Contacts	Randy Mahan Alan W. Stuart Bill Argentieri	SCANA Services, Inc. Kleinschmidt SCE&G	 (803)822-3177 (803)217-9162	rmahan@scana.com alan.stuart@kleinschmidtusa.com bargentieri@scana.com

IX. List of Attachments

ATTACHMENT A: August 27, 2004, Wood Stork Aerial Survey Trip Report

ATTACHMENT B: Meeting Minutes from September 17, 2004, conference call with SCDNR and USFWS

X. List of References

U.S. Fish and Wildlife Service (USFWS). 1996. Revised Recovery Plan for the U.S. Breeding Population of the Wood Stork. U.S. Fish and Wildlife Service, Atlanta, Georgia. 41 pp.

ATTACHMENT A

TRIP REPORT FROM AUGUST 27, 2004, WOOD STORK AERIAL SURVEY

Wood Stork Aerial Survey Trip Report

Lake Murray and Saluda River August 27, 2004

Survey Attendees

Shane Boring	Kleinschmidt
Tom Murphy	SCDNR Endangered Species Biologist
Bucky Harris	SCDNR Pilot

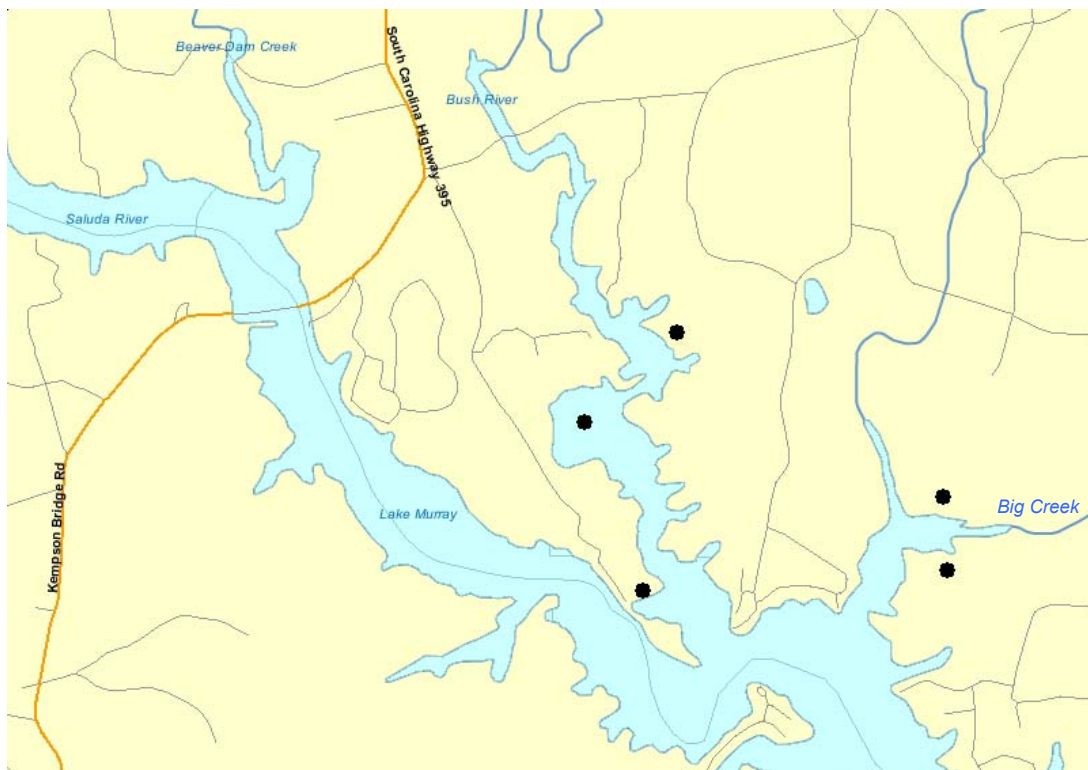
Aircraft: Fixed-Wing Cessna 210 **Survey Duration:** 1300 – 1415 hrs

Survey Observations

The survey crew departed the SC Avionics Facility at Columbia Metropolitan Airport at approximately 1300 hrs. The survey traversed the Lower Saluda River, from the confluence to the Saluda Hydro Dam, and the lower portion of Lake Murray, with the survey crew remarking on the lack of stork habitat in the vicinity. According to the USGS gauge (Lake Murray near Columbia, SC), the reservoir elevation at the time of the survey was 349.9 ft.

The survey crew also examined several sites along Bush River and Big Creek where foraging storks have been reported by a local resident for approximately the past three years (See Figure 1). However, no storks were observed at these sites.

Figure 1: Reported Wood Stork Sightings in Vicinity of Bush River and Big Creek

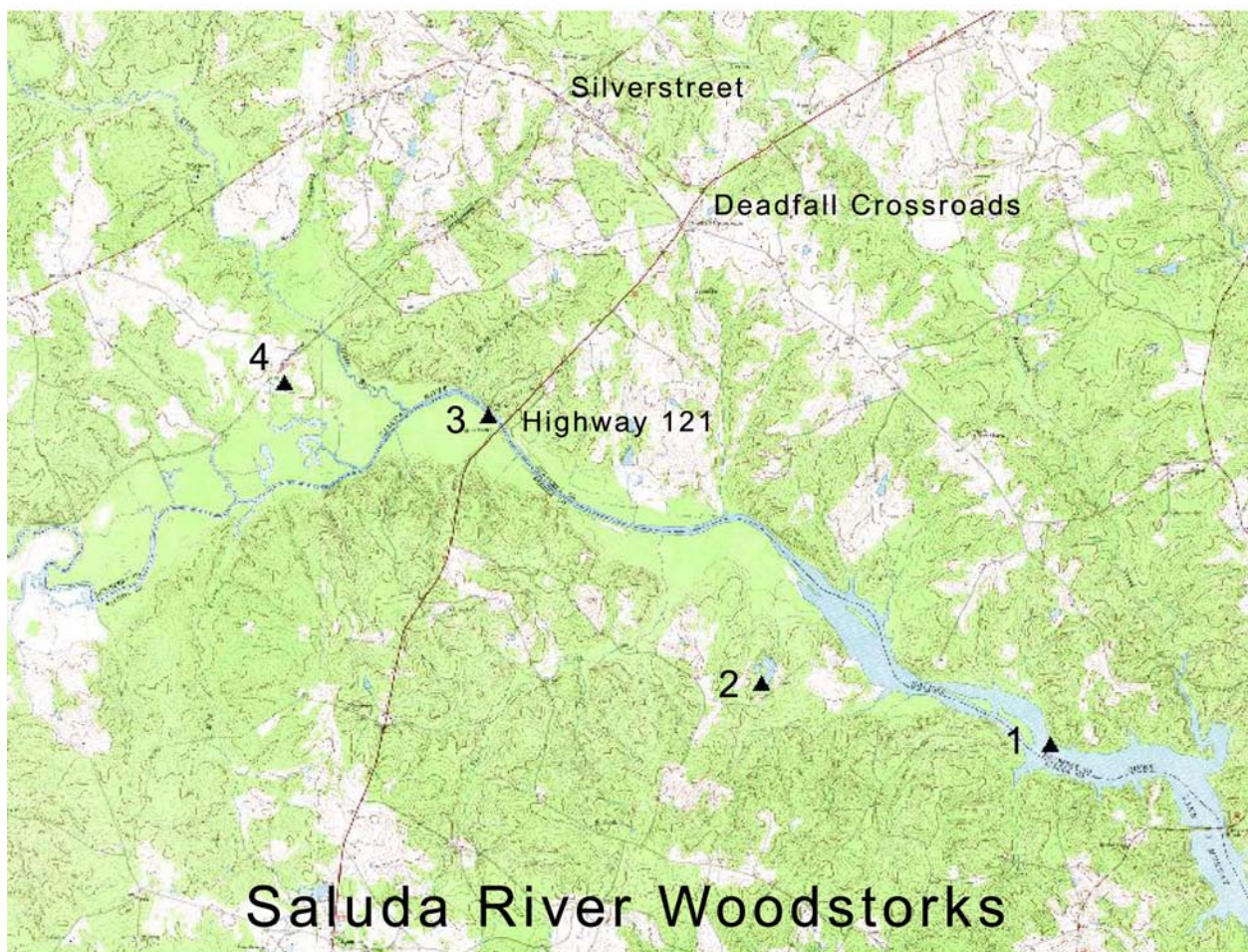


Wood Stork Aerial Survey Trip Report

Lake Murray and Saluda River August 27, 2004

The remainder of the survey focused on the extreme upper end of Lake Murray and upstream in the middle Saluda River. Four sites where foraging wood storks were previously observed by Tom Murphy on 8/4/04 were examined (See Figure 2). Approximately 60 wood storks were observed foraging on exposed mudflats within the project boundary upstream of Beaverdam Creek on the Saluda River (See Point 1 - Figure 2). Several passes were made to confirm that the birds were wood storks, photograph the birds (See Figure 3), and obtain a more accurate count of the number of birds.

Figure 2: Saluda River Wood Stork Locations Provided By Tom Murphy (SCDNR)



Wood Stork Aerial Survey Trip Report

Lake Murray and Saluda River August 27, 2004

Figure 3: Wood Stork Feeding Assemblage Observed Upstream of Beaverdam Creek



The potential nesting area (See Point 4 – Figure 2; also See Figure 4), originally identified by Tom Murphy on 8/4/04, was also examined as part of the survey. Approximately 12 nests were observed in a small forested wetland (old clay pit) located in the floodplain of the middle Saluda River, south of Silverstreet, and adjacent to International Paper’s wood chipping facility (See Figure 5). The nests appeared to be wood stork nests, but no storks were observed in the vicinity at the time of the survey. It should be noted that approximately 20 storks were observed standing on the nests and roosting in the vicinity of the nests when they were first located on 8/4/04; however, none appeared to be freshly-fledged juveniles.

The survey examined another potential nesting site in the Saluda River floodplain near the mouth of Tosity Creek, which was initially located by Bucky Harris (SCDNR Pilot) during a flight on approximately 8/25/04. Approximately 10 nests were observed in two adjacent forested wetlands (See Figure 4). The nests appeared to be wood storks nests; however, no storks were present at the site, and it was noted by Tom Murphy that they could potentially be great blue heron nests. GPS coordinates for the two potential nesting areas are provided in Table 1.

Table 1: Latitude and Longitude of Potential Wood Stork Nesting Locations

	Latitude (Deg. / Dec. Min.)	Longitude(Deg. / Dec. Min.)
Silverstreet Site	34 11.20	81 45.28
Tosity Creek Site	34 10.19	81 42.19

Wood Stork Aerial Survey Trip Report

Lake Murray and Saluda River
August 27, 2004

Figure 4: Potential Wood Stork Nesting Sites on the Middle Saluda River

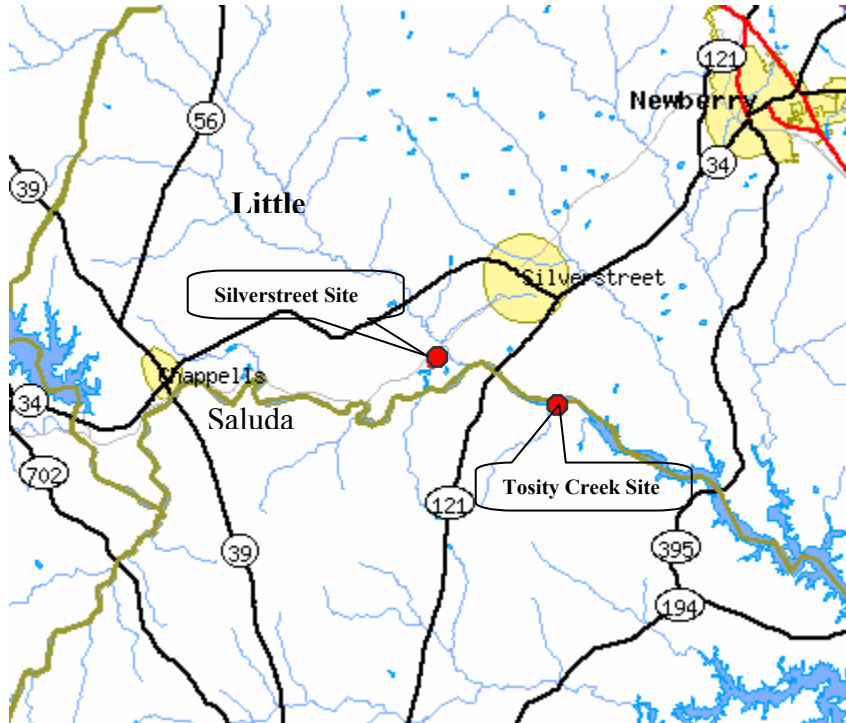


Figure 5: Aerial Photo of Potential Wood Stork Nesting Site Near Silverstreet, SC



Wood Stork Aerial Survey Trip Report

Lake Murray and Saluda River August 27, 2004

Summary

Approximately 60 wood storks were observed foraging on exposed mudflats within the Saluda Project Boundary upstream of Beaverdam Creek (See Point 1 - Figure 2). This observation, combined with other sightings of feeding assemblages throughout the middle Saluda Basin, suggests that wood storks are readily using a wide range of habitats in the basin for foraging. The storks observed feeding within the project boundary were feeding on mudflats exposed by the Lake Murray drawdown. It remains unclear at this time whether storks will utilize the lake as a foraging area once the lake has returned to full pool elevation. Tom suggested follow-up surveys next year to determine if storks are utilizing the lake for foraging after it is returned to full pool.

Two potential nesting sites were examined during the survey, one just south of Silverstreet and the other along the Saluda River near Tosity Creek (See Figure 4). At the Silverstreet site, approximately 12 nests resembling wood stork nests were observed; however, no storks were present at the time of the survey. When the nests were initially located on 8/4/04, several storks were observed standing in the nests and roosting nearby; however, none appeared to be newly-fledged juveniles. The Silverstreet Site is not located within the Saluda Project Boundary.

Approximately 10 nests were located at the Tosity Creek site. The size, structure, and location of the nests were typical of wood storks; however, no wood storks were observed in the vicinity and it was noted that they could potentially be great blue heron nests. Based on initial field observations, the Tosity Creek site appears to be located within the Saluda Project Boundary.

Some uncertainty remains as to whether the observed nests were wood stork nests, and if so, whether nesting was successful at the Silverstreet and Tosity Creek sites. In discussions with Tom Murphy, it was suggested that a similar survey be conducted during next year's nesting season to determine whether reproduction is taking place at these locations.

ATTACHMENT B

MEETING MINUTES FROM SEPTEMBER 17, 2004, CONFERENCE CALL WITH
SCDNR AND USFWS

**Saluda Hydro Project – Meeting RE August 27, 2004 Wood Stork Reconnaissance Survey
Via Conference Call – September 17, 2004**

Revision 09-30-04

Attendees

Ed Eudaly	USFWS	Tom Murphy	SCDNR
Randy Mahan	SCANA Services	Kristina Massey	SCE&G
Tom Eppink	SCANA Services	Tommy Boozer	SCE&G
Van Hoffman	SCE&G	Bill Argentieri	SCE&G
Shane Boring	Kleinschmidt	Alan Stuart	Kleinschmidt

Action Items

Due Date

- Incorporate comments from 9/17/04 conference call into report and distribute to group.
Shane Boring
October 12, 2004
- Draft study plan based on recommendations from 9/17/04 conference call and distribute to group for review and comment.
Shane Boring
October 13, 2004

Meeting Notes

These notes summarize the major items discussed during the meeting and are not intended to be a transcript or analysis of the meeting.

Shane opened the meeting at 10:00 AM and noted that the focus of the meeting would be to discuss: (1) the trip report from the 8/27/04 wood stork aerial reconnaissance survey, (2) future wood stork monitoring needs on Lake Murray, and (3) FERC's order to designate two areas in the Brushy Creek and Bush River areas as "conservation areas" for wood storks.

Comments on Reconnaissance Survey Trip Report

The group found the report generally acceptable. Ed Eudaly asked that the reservoir elevation be added to the Survey Observations portion of the report in order to provide as much pertinent background information as possible.

Shane asked Tom Murphy to clarify whether the storks reported feeding along Brushy Creek and Bush River (See Figure 1 of report) had been observed by SCDNR staff or had been reported by private individuals. Tom indicated that Mr. Joe Harris (a local resident) had observed and documented storks feeding at these locations intermittently over an approximately three-year-long period. Randy Mahan noted that SCE&G staff had a meeting scheduled with Mr. Harris on October 4 to discuss these observations.

Van Hoffman noted that the two locations where potential nests were observed (See Figure 4) were located in backwater areas approximately 500 -600 feet off the main river channel and that these areas are more influenced by operations at Lake Greenwood (Buzzard's Roost) than by the Lake Murray pool. He added that the location where storks were observed feeding during the survey (Point 1 on Figure 2) is in the vicinity of where the riverine habitat (influenced

**Saluda Hydro Project – Meeting RE August 27, 2004 Wood Stork Reconnaissance Survey
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by Buzzard's Roost) begins to give way to more lacustrine habitats influenced by the Lake Murray pool.

Future Monitoring Needs

Tom and Ed both noted the need for a longer-term study (possible 3-7 years) to document where and under what conditions storks are using Lake Murray. The group identified several objectives for the study including the following:

- Documentation of nesting (i.e., whether the nests observed during 2004 were in fact stork nests), and if so, if successful reproduction is taking place.
- Documentation of foraging habitat and roosting areas, in particular, documentation of important night roosts (if they exist in the area).
- Examination of foraging conditions over multiple years and a range of water levels.
- Documentation of usage by various age classes (i.e., young-of-year, immature, adult).
- Examination of the influence of the Lake Murray drawdown on the presence of storks in the area.

The group briefly discussed the possibility of additional surveys during 2004, but decided that it would be better to begin surveys in March 2005 (when the birds begin returning to SC for the nesting season) and focus the remainder of this year on putting together a solid study plan. The group agreed upon the following study plan components:

- Monthly aerial surveys beginning in late-March and continuing through October each year.
- Ground surveys as necessary based on aerial observations (i.e., to confirm nesting, presence of young-of-year or pre-flight juveniles, presence of night roosts, etc.)
- A defined geographic and temporal scale.

Shane Boring agreed to draft a proposed study plan as outlined above and distribute the group for review as soon as is practicable.

Kristina Massey suggested, and the group agreed, that the preliminary result of the first two years of the study should be compiled in a report for inclusion with the Saluda Hydro FERC license application. The group also agreed that a brief annual report should be issued, followed by a conference call with the agencies to discuss the progress of the study and need for potential modifications to the scope. Shane and Tom agreed that a brief e-mail update could be issued following each survey flight.

**Saluda Hydro Project – Meeting RE August 27, 2004 Wood Stork Reconnaissance Survey
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*Potential Designations of Conservation Areas in response to the Shoreline Management Plan
FERC Order*

Randy Mahan provided a brief explanation of FERC's Shoreline Management Plan order (dated 06/24/04), specifically, Item H dealing with consultation with the agencies regarding wood storks. Randy explained that Item H required SCE&G to consult with the agencies and to develop a plan to provide protection for areas where wood stork foraging and roosting has been documented. Randy indicated that consultation efforts are underway and that SCE&G proposes to temporarily designate these areas as Environmental Research Areas. Randy indicated that, under SCE&G's proposal, consultation efforts and protection of the areas would continue through the duration of the long-term study outlined above. He added that this would allow for evaluation of the influence of the Lake Murray drawdown on usage of the project area by storks (i.e., whether they will be present in significant numbers at normal reservoir elevation) and an appropriate long-term designation. Alan queried Tom Murphy and Ed as to whether this approach seemed logical and whether their agencies would support SCE&G's efforts in this regard. Ed and Tom were both of the opinion that SCE&G's proposal sounded like a reasonable approach and one that their respective agencies could support.

APPENDIX B

FEBRUARY 9, 2007 WOOD STORK CONFERENCE CALL MEETING MINUTES

MEETING NOTES

**SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
Wood Stork Discussions**

***Via Conference Call
February 9, 2007***

Final ACG 3-7-07

ATTENDEES:

Alison Guth, Kleinschmidt Associates
Alan Stuart, Kleinschmidt Associates
Dick Christie, SCDNR
Ed Eudaly, USFWS

Bill Argentieri, SCE&G
Shane Boring, Kleinschmidt Associates
Randy Mahan, SCANA Services

HOMEWORK:

- Shane Boring– To revise the 2006 Wood Stork Survey Report based on what the group agreed to.

MEETING NOTES:

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The group began the meeting by discussing the 2006 Wood Stork Survey Summary Report. Alan asked if the group had any questions on the report itself. The group indicated that they were satisfied with the information it entailed. Alan then noted that the next important point of discussion would be how they should proceed with the surveys at this point, and whether there is a need to continue the surveys. Randy Mahan noted that SCE&G is interested in discontinuing the surveys if the agencies feel that there is no real benefit to the information being gleaned from the surveys from this point forward.

Ed Eudaly noted that, based on the results of the surveys, they did not see any regular or extensive use of the Project area by the wood storks. He explained that they have observed sporadic use upstream of Lake Murray. Ed noted that based on this, he did not see much of a need to continue with the surveys. Dick Christie noted that he concurred with Ed that there was not a need to continue with the surveys. Dick further added that since the wood storks were documented in the Project area, even though their use appears to be sporadic and infrequent, it may be beneficial to give the birds some recognition in the relicensing. He explained that this could be accomplished by drafting a brief management plan, or by observing these species through informal surveys. Dick further noted that it may be best to be prepared to address some management needs if they arise in the future. Ed agreed that the group should address the wood storks in some manner during relicensing.

To follow up on the strategies that Dick had just discussed, Shane noted that any wood storks observed during the Waterfowl Surveys will be documented. Shane explained that this may give them the means to track wood storks around the project without performing formal wood stork surveys. Shane further explained to the group that their observations of wood storks have so far been limited to foraging and there has been no nesting behavior observed. Dick noted that if there is ever any evidence of nesting that they may want to consider establishing some protected areas.

Bill then explained that SCE&G had originally begun these studies based on a 2004 order from the FERC. He further explained that this order noted that SCE&G needed to be in consultation with the USFWS and SCDNR on evaluating these areas. Bill explained that the order also stated that SCE&G should refrain from selling or developing these areas until further information is obtained. Bill asked the group for advice on how to word the response to FERC now that SCE&G and the agencies have agreed that the surveys could be discontinued. Ed noted that it would probably be best to tailor the language in the letter to note that the land restrictions are no longer warranted due to wood storks. Ed further reiterated that he believed that the wood storks were seen at the Project due to the prolonged drawdowns. Dick agreed. Bill noted that he would draft a letter to FERC and send it to the agencies for review.

Bill then asked how SCE&G should best address the agencies recommendation of recognition of the wood stork in relicensing. Dick noted that, as discussed above, the waterfowl surveys will continue to document wood stork observations. Shane noted that Tom Murphy may be able to keep watch for the wood storks during his eagle surveys. Dick continued to explain that the wood stork could be addressed during the RT&E component of relicensing through the 2006 Survey Report and the recommendations to follow. The group discussed the possibility of developing an RT&E species awareness program/brochure that highlighted those unique species that one was most likely to see at Lake Murray. This could include the Bald Eagle, the purple martin and the wood stork. Ed also suggested that it would be beneficial to have some mechanism for tracking reports on wood stork sightings. The group noted that there could be a means for tracking reports through the brochure the group discussed and through SCE&G's website.

The group concluded their meeting and Shane noted that he would revise the report and reference what the group agreed to. Group adjourned.