Threatened and Endangered Species Assessment
for the
Rock-Berkeley Site
Berkeley County, South Carolina
August 2006

1.0 INTRODUCTION:

The following report details methodology and an assessment of survey results for a threatened and endangered species survey completed in August 2006 on a 400.35 acre tract of land near the end of Drop Off Drive, a frontage road to Interstate 26, approximately 9600 feet east of the intersection of Interstate 26, Jedburg Road, and Drop Off Drive, Berkeley County, South Carolina (See Figure 1). The threatened and endangered species survey was conducted to determine the occurrence of, or potential for, animal and plant species federally listed as endangered or threatened to exist within the referenced site. Completion of this survey was directed by and complies with current state and federal regulations [Federal Endangered Species Act of 1973 (16 USC 1531-1543) and the South Carolina Non-Game and Endangered Species Conservation Act of 1974 (58-2384)].

2.0 METHODOLOGY:

The following threatened and endangered species are listed by the US Fish & Wildlife Service as occurring in or potentially occurring in Berkeley County, South Carolina:

Common Name	Scientific Name	Federal Status
Animals		
West Indian manatee *	*Trichechus manatus*	Federally Endangered
Loggerhead sea turtle *	*Caretta caretta*	Federally Threatened
Shortnose sturgeon *	*Acipenser brevirostrum*	Federally Endangered
Red-cockaded woodpecker	*Picoides borealis*	Federally Endangered
Wood stork	*Mycteria americana*	Federally Endangered
Flatwoods salamander	*Ambystoma cingulatum*	Federally Threatened
Bald Eagle	*Haliaeetus leucocephalus*	Federally Threatened
Plants		
Canby's dropwort	*Oxypolis canbyi*	Federally Endangered
Pondberry	*Lindera melissifolia*	Federally Endangered
American chaffseed	*Schwalbea Americana*	Federally Endangered

Existing data from the South Carolina Department of Natural Resources (DNR) was reviewed to locate recorded occurrences of threatened and endangered species within or near the subject site. At the time of this report, there is no documentation of any rare, threatened or endangered species within or immediately adjacent to the referenced tract. As noted by DNR, their records are not assumed to be complete and they should not be assumed to be comprehensive; therefore, field surveys should be conducted for thorough evaluations. Several of the species listed as potentially occurring in the site were eliminated from the survey based upon broad habitat requirements; these species have been indicated with an asterisk. The remaining species were included in the assessment.

As noted, field surveys to identify suitable habitat were initially conducted in the late summer of 2006. During the field surveys, plant communities and habitats were observed and noted to determine if they match habitat types where the listed species have the potential to occur. If potential habitat was identified at the site, all species observed were, at a minimum, identified to the genus taxonomic level.

A survey for Red-Cockaded Woodpecker was conducted using the "Guidelines for the Preparation of Biological Assessments and Evaluation for the Red-Cockaded Woodpecker", V. Gary Henry. These guidelines include methods for identifying areas to survey as well as actual survey methods for determining the presence of the Red-Cockaded Woodpecker. The guidelines state that timber stands exhibiting any of the following criteria should be surveyed when making a determination for the occurrence of Red-Cockaded Woodpeckers. The criteria are:

* mixed pine hardwood stands over 60 years of age

* mixed pine and hardwood stands under 60 years of age that contain clumps of pine trees over 60 years of age

* stands containing pine saw timber, including stands thought to be less than 60 years of age but containing scattered or clumped trees over 60 years of age

* hardwood-pine over 60 years of age adjacent to pine and pine-hardwood over 30 years in age

3.0 HABITAT CLASSIFICATIONS:

The following is a description and classification of major habitat/community types identified within the site. Also noted is an assessment of suitability for federally listed threatened and endangered species.

3.1 Loblolly Pine Plantation

The majority of the property has been extensively managed for timber production. Therefore, the upland portions of the tract as well as wetland portions suitable for planting are planted in loblolly pine. Due to the ongoing timber management, sections of the property contain planted loblolly pine *(Pinus taeda)* of various ages. These pines are interspersed with sweet gum *(Liquidambar styraciflua)*, red maple *(Acer rubrum)* and red bay *(Persea borbonia)*. In most of these pine stands, the understory is overgrown especially in areas classified as wetlands where fetter-bush *(Lyonia lucida)* dominates the dense understory. This community does not provide suitable habitat for any of the listed species.

3.2 Public Utilities

A major power line right-of-way runs through the northeast corner of the property. The vegetation is dominated by herbaceous species due to frequent mowing. These species include Bermuda grass (*Cynodon dactylon*), dog fennel (*Eupatorium capillifolium*), and black berry (*Rubus spp.*) in the upland areas. The wetland areas are dominated by maiden cane (*Panicum hemitomon*) and Virginia chain fern (*Woodwardia virginica*). Due to the frequent mowing this community

does not provide suitable habitat for any of the listed species.

3.3 Mixed Pine/Hardwood Wetlands

This wetland community is located near the center of the site. The dominant plant species that occur in this area consist of sweet bay (*Magnolia virginiana*), red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*), red bay (*Persea borbonia*), black gum *(Nyssa biflora)*, loblolly bay *(Gordonia lasianthus)* and fetter bush (*Lyonia lucida*). This is the only contiguous wetland area on-site that has not been disturbed by timber harvesting or production. This community does not provide suitable habitat for any of the listed species.

3.4 Isolated Wetlands

There are numerous isolated wetlands throughout the site. These wetlands for the most part are circular in shape and are dominated by black gum (*Nyssa biflora*), fetter bush (*Lyonia lucida*), Virginia chain fern (*Woodwardia virginica*), and red maple (*Acer rubrum*). Most of these wetland areas have not been impacted by the ongoing silviculture activities, however they do not provided suitable habitat for any of the listed species.

4.0 LISTED SPECIES AND ACKNOWLEDGED HABITATS:

The following is a brief description of each listed species included in the survey, its recognized habitat and comments regarding survey results for that species.

4.1 The **Bald Eagle** is a very large raptor with wingspread of nearly seven (7) feet. This bird is normally associated with coasts, rivers and lakes with adjacent suitable nesting habitat and is known to forage over the adjacent rivers and marshes. Comprehensive tree-by-tree surveys for eagle nests were not conducted during this survey, however, based upon DNR records that are annually updated and well maintained, no eagles are known to nest within this property or within 1500 feet of this property at the time of this survey.

4.2 The **Wood Stork** is a large wading bird characterized by its featherless head and black and white markings. This species nest in colonies known as rookeries and

roosts and feeds in flocks, often in association with other species of long-legged water birds. Wood storks utilize freshwater and estuarine wetlands for feeding, nesting and roosting. These sites area utilized for many years and are characterized by woody vegetation, primary cypress or swamp hummocks over open water (USFWS Ogden).

Only a few nesting sites (rookeries) are known in South Carolina, none of which are within or near the site. However, because this species covers vast areas during active foraging, it may occur over a broad region. Wood storks commonly feed throughout the estuarine marshes along the coast and are frequently observed in the surrounding areas during the summer months. Estuarine marshes and impoundments tend to be preferred foraging habitat, however, this species will also use open mature forested wetlands. Estuarine marshes and impoundments tend to be preferred foraging habitat, however, this species will also use open mature forested wetlands. No wood storks were observed during our field investigations and the on site wetlands are not considered preferred habitat.

4.3 **Red-Cockaded Woodpeckers** are small birds requiring old growth pine forest for cavity excavation, foraging and nesting. The particular habitat associated with this species requires many years to develop and is fire dependant to maintain open mid-story conditions. Due to the lack of any mature pine stands near or within the tract, no suitable foraging or nesting habitat for the Red-Cockaded Woodpecker is present.

4.4 The **Flatwoods Salamander** requires open, mesic woodland of longleaf pine (*Pinus palustris*) and slash pine (*Pinus elliottii*) maintained by frequent fire. Pine flatwoods are typically flat, low-lying open woodlands that lie between the drier sandhill community up slope and the wetlands down slope. Wiregrasses (*Aristida spp.*), especially *Aristida beyrichiana*, are often the dominate grasses in the herbaceous layer. Adult flatwoods salamanders move to their wetland breeding site during the rainy weather from October to December. The breeding sites are isolated pond cypress (*Taxodium ascendens*), swamp gum (*Nyssa biflora*), or slash pine dominated depressions which dry up completely on a cyclic basis. These wetlands are generally shallow and relatively small and have a marsh-like appearance with sedges (*Carex spp.*)growing throughout; wiregrasses, panic grasses (*Panicum spp.*) and other herbaceous species concentrated in shallow water edges. A relatively open canopy is necessary to maintain the herbaceous species component which serves as cover for the flatwoods salamander larvae.

Because the property has no freshwater wetlands that are conducive for the flatwoods salamander or mature longleaf/slash pine forests, there is no suitable habitat on site for the flatwoods salamander.

4.5 **Canby's dropwort** is a medium sized shrub found in the coastal plain of South Carolina where it occupies pond savannahs, the shallow edges of cypress/pond pine sloughs and wet pine savannahs. These sites are characterized by open conditions with savannah like herbaceous layers and are almost always associated with a sandy loam or loam soil underlain with a clay layer. Additionally, these sites require that the groundwater regime remain stable and that the sites must be protected from adverse alterations such as ditching, dams, etc.

The white flower of this species is noted as occurring from May through August, although past surveys indicate blooming in this region occurs during late July-October. There is no habitat for this species within the subject property.

4.6 **Pondberry** is a small fragrant shrub also found in and around small depressional wetlands and sinks with a semi-open canopy. Surveys for this species and its habitat were completed in concert with the surveys for Canby's dropwort. No occurrences of this species were noted during the surveys, nor was suitable habitat identified.

4.7 **Chaffseed** is an upland herbaceous species indigenous to open fire maintained pine forest that also typically contain blackjack oak (*Quercus marilandica*) and goat's rue (*Tephrosia virginiana*) as dominates and indicator species. No occurrences of this species were noted during the surveys nor was suitable habitat identified.

5.0 CONCLUSION

No threatened and endangered species were observed during this survey and based upon available habitat, it is unlikely that any such species nest or live within the property. It is the opinion of Newkirk Environmental, Inc. that based upon the findings of this survey and report, that the proposed development plan for the referenced tract is not likely to cause an adverse impact to any threatened and endangered species.

Although unlikely because of the lack of suitable habitat available on site, it should be noted that

because of the transitory nature of some of the listed threatened and endangered plants and animals, it is possible that endangered species populations and locations may change over time. Therefore, any potential findings at a later date should be fully investigated. Should significant time lapse between the issuance of this report and development of the property or any other type of legal reliance, it is strongly recommended that an update of this report be completed. The definition of significant time is not absolute but would include passing of annual breeding or migratory seasons.