

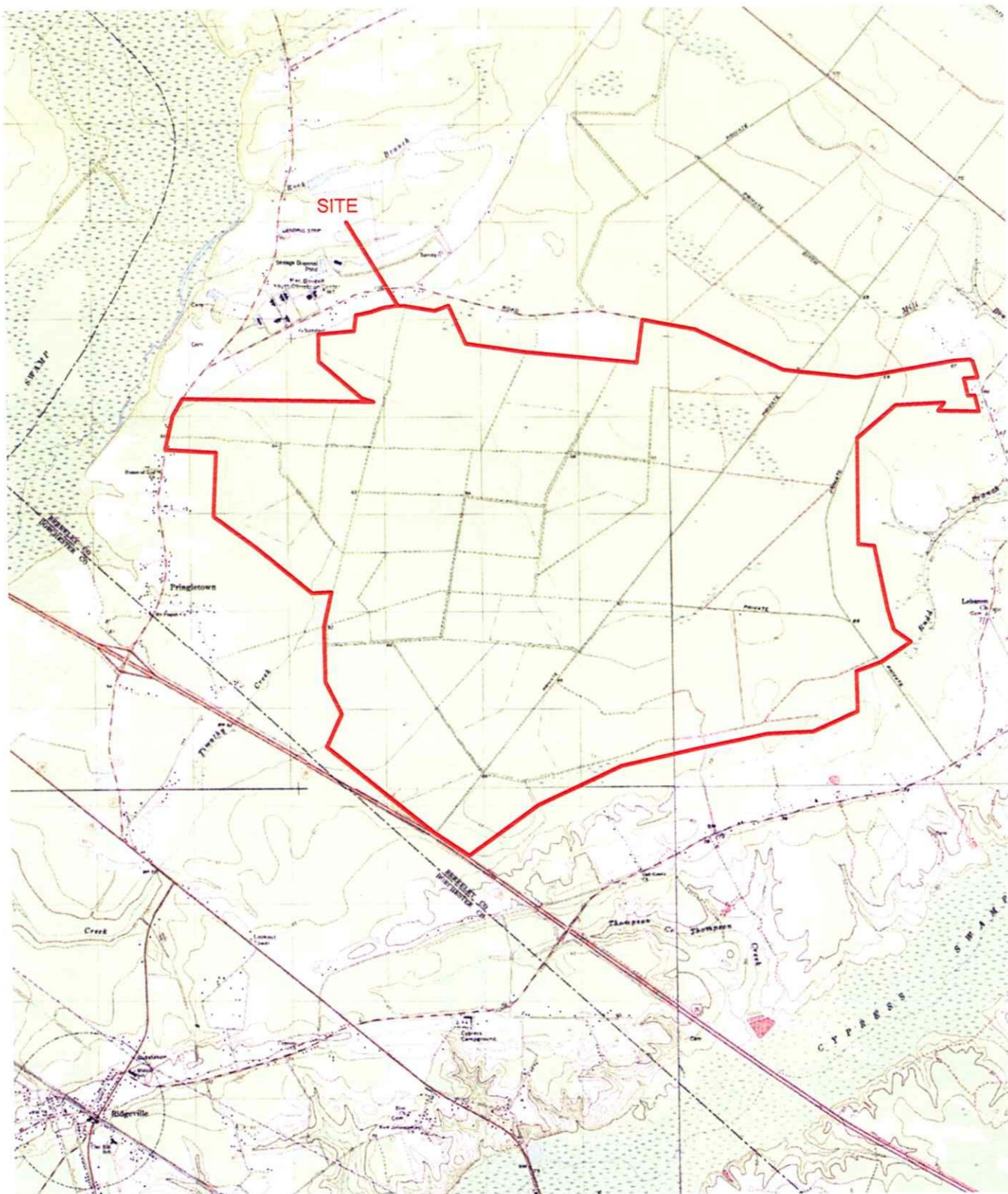
**Threatened and Endangered Species Assessment
for
Camp Hall Tract
Berkeley County, South Carolina
January, 2009**

1.0 INTRODUCTION:

The following report details methodology and an assessment of survey results for a threatened and endangered species survey completed in December 2008 on the Camp Hall tract located east of Highway 27 and west of Cypress Campground Road in Berkeley County, South Carolina (See Figure 1). The 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), the South Carolina Non-Game and Endangered Species Conservation Act of 1974 (58-2384), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (16 U.S.C. 703-712)].

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:



Camp Hall
Berkeley County, South Carolina

Location
Map

Project #: 01-2310a2
 Date: 1-6-08
 Scale: Not to Scale

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

Common Name	Scientific Name	Federal Status
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Protected **

**Protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act (16 U.S.C. 703-712).

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.

As noted, field surveys to identify suitable habitat were initially conducted in the fall of 2008. 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 Upland Pine Plantation (See Appendices Photo 1 and 2)

The majority of the Camp Hall tract is currently managed for timber production. Therefore, the upland portions of the tract as well as wetland portions suitable for planting were historically planted in loblolly pine. Due to the ongoing timber management at Camp Hall, sections of the property contained planted loblolly pine (*Pinus taeda*) of various ages that have been recently thinned. These pines were interspersed with sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), southern red oak (*Quercus falcata*), and common persimmon (*Diospyros virginiana*). In some of these pine stands, the understory was moderate consisting of species indicated above. The majority of the stands consisted of a light herbaceous/shrub layer dominated

by bracken fern (*Pteridium aquilinum*), spleenwort (*Asplenium platyneuron*), wax myrtle (*Myrica cerifera*), and dog fennel (*Eupatorium capillifolium*). Due to the lack of old growth timber, these areas of thinned pines do not contain suitable habitat for the Red Cockaded Woodpecker, or any other listed species.

3.2 Upland Planted Pine (Younger Stands) (See Appendices Photo 3)

These pine plantations found on-site are younger in age and dominated by loblolly pines (*Pinus taeda*). This community has an open canopy which allows sunlight to reach the dense understory. The dominate vegetation located in the understory are wax myrtle (*Myrica cerifera*), black berry (*Rubus spp.*), and fetter-bush (*Lyonia lucida*). Due to the lack of mature timber and the presence of a dense understory, this community does not provide suitable habitat for the Red Cockaded Woodpecker or any of the other listed species.

3.3 Isolated Freshwater Wetland/Gum Ponds (See Appendices Photo 4)

The tract contains isolated freshwater wetland habitats that are depressional areas completely surrounded by the upland pine forest habitat. These depressions are ground water driven and are not connected to contiguous wetlands. The overstory within this community is dominated by black gum (*Nyssa biflora*), and red maple (*Acer rubrum*). The understory consists of fetter-bush (*Lyonia lucida*), giant cane (*Arundinaria gigantea*), and wax myrtle (*Myrica cerifera*) along the edges. These areas have a dense overstory that shade out most shrub and herbaceous species within the deep depressed centers. These areas are found throughout the property adjacent to recently thinned pine plantations with heavy grass/herbaceous species. Due to the dense edges and soil composition the onsite isolated wetland do not provide suitable habitat for any of the listed species.

3.4 Public Utilities (See Appendices Photo 5)

A major power line right-of-way bisects the southern portion of the property. The vegetation within this community is dominated by small shrubs and herbaceous species due to frequent mowing and herbicide applications. Species found included loblolly pine (*Pinus taeda*), broom-sedge (*Carex scoparia*), carex grass (*Carex spp.*), and black berry

(*Rubus spp.*). Due to the frequent maintenance of this area it does not provide suitable habitat for any of the listed species.

3.5 Wetland Hardwoods (See Appendices Photo 6)

This hardwood community is part of a contiguous wetland system. The overstory within this community includes black gum (*Nyssa biflora*), loblolly pine (*Pinus taeda*), red maple (*Acer rubrum*), red bay (*Persea borbonia*), sweetgum (*Liquidambar styraciflua*), spruce pine (*Pinus glabra*), and sweetbay magnolia (*Magnolia virginiana*). The midstory was comprised of the same species as indicated above. Due to the dense overstory, the understory remained fairly open with little herbaceous vegetation. Vegetation found in the understory consisted of giant (*Arundinaria gigantea*) and fetterbush (*Lyonia lucida*). These onsite wetlands could provide suitable foraging habitat for wood storks. However, these wetlands are no different than thousands of acres of similar habitat located throughout the southeast. Furthermore no rookeries are known to be nearby nor were any wood storks observed during our field investigations. This community does not provide suitable habitat for any of the other species listed as potentially occurring in Berkeley County.

3.6 Clearcuts (See Appendices Photo 7 and 8)

A portion of the tract consists of recent clearcuts of planted pine. Some of the clearcuts have been recently replanted with loblolly pine (*Pinus taeda*), while others have remained unplanted. There is an abundance of herbaceous vegetation present that consists of annual weeds, saplings, and grasses. The majority of the species consisted of wax myrtle (*Myrica cerifera*), broomsedge (*Andropogon spp.*), carex grass (*Carex spp.*), dog fennel (*Eupatorium capillofolium*), and sweetgum (*Liquidambar styraciflua*). This community does not provide suitable habitat for any of the species listed as potentially occurring in Berkeley County.

3.7 Long Leaf Pine Plantation (See Appendices Photo 9 & 10)

This pine plantation consists of a small linear portion along Fish Road that is dominated by long leaf pine (*Pinus palustris*). This community contains a very mild understory, and consists mostly of woody shrubs and herbaceous vegetation due to periodically burning.

The understory is dominated with post oak (*Quercus stellata*), sweetgum (*liquidambar styraciflua*), and sweetbay magnolia (*Magnolia virginiana*). The woody shrubs are comprised mostly of southern bayberry (*Myrica cerifera*) and inkberry (*Ilex glabra*). The herbaceous vegetation is dominated with broomsedge (*Andropogon spp.*). Routine burning appears to be implemented throughout this community to control the midstory and promote an “open” habitat. Although this community may provide suitable habitat for Red-Cockaded Woodpeckers this species was not observed nor were any possible nest sites found. The open canopy within this area could provide suitable habitat for American chaffseed however, this species nor any of the indicator species for chaffseed were observed within this community. This habitat is not suitable for any of the other species listed for Berkeley County.

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 **West Indian Manatee** is a large brown or gray aquatic mammal found in both saltwater and freshwater habitats along the Atlantic and Gulf coasts of the United States. The West Indian Manatee confines itself primarily to the southern coasts of Florida and the Gulf of Mexico during the winter months, but can be found as far north as the coast of Virginia and as far east as the coastal regions of Louisiana during migration. As adults, these animals reach an average length of approximately 10 feet and weigh 1,000 pounds.

Occurrences of manatees within the coastal waters of South Carolina are limited to the warmer months (July – October) and are, in general, rare. The project site is well inland and outside of the potential habitat range of the West Indian Manatee.

- 4.2** The **Bald Eagle** was delisted from the Endangered Species Act on June 28, 2007.

However, the bald eagle remains protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Both federal laws prohibit the “taking” –killing, selling, or otherwise harming eagles, their nests or eggs. As a result, Newkirk Environmental, Inc. has included this species in our report as any federal actions will likely require coordination with the US Fish and Wildlife Service and/or SCDNR.

The 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 rivers and marshes near the site. Comprehensive tree-by-tree surveys for eagle nests were not conducted during this survey, however, based upon SCDNR records that are annually updated and well maintained, no eagles are known to nest on site or within 1500 feet of the property at the time of this survey.

- 4.3** 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 are 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. One wood stork was observed over the site during our field observation. The wetland hardwood community could provide suitable foraging habitat for wood storks, however these wetlands are no

different than thousands of acres of similar habitat located throughout the southeast. Furthermore no rookeries are known to be nearby.

- 4.4 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.

The long leaf pine (*Pinus palustris*) stand along Fish Road could provide suitable nesting and foraging habitat for the Red-Cockaded Woodpeckers, however no Red-Cockaded Woodpeckers or nesting cavities were found during our site evaluation. Due to the overall size of this timber stand and surrounding habitats, it is unlikely that this species occurs on site. If any activities were to take place in this area in the future, it would be recommended that another field survey be performed to make sure no birds have moved in since the issuance of this report.

- 4.5 The Loggerhead Sea Turtle** is federally listed in Berkeley County as threatened and are, for the most part, open water reptiles that prefer open undisturbed beaches for nesting and deeper waters for feeding. Besides commercial fishing, pollution and trash the major decline of the sea turtles is attributed to loss of nesting habitat. This site is well inland of any potential suitable habitat for this species.

- 4.6 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 with 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. The onsite wetlands are not considered preferred habitat for the flatwoods salamander nor do the onsite uplands represent the sandhill type community.

- 4.7** The **Shortnose Sturgeon** is a fish that reaches a maximum length of about one meter and has a heterocercal tail, short shovel-shaped snout, large fleshy barbells, ventral mouth and is dark brown to black on top and light brown to yellow on the bottom. Shortnose sturgeons in southern waters tend to exhibit limited distributions during the summer within habitats at the saltwater/freshwater interface, therefore estuarine habitat at the saltwater/freshwater interface constitutes critical habitat in southern river systems. In South Carolina, spawning areas include flooded swamps along rivers. Juveniles are found in the saltwater/freshwater interface of a river in deep, cool channels with sand silt substrates. They occur in the lower salinity waters of this interface during the summer months (NatureServe. 2003). The onsite wetlands are not considered preferred spawning habitat for the shortnose sturgeon and no estuarine habitats are near the site.

- 4.8** **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. The onsite wetland are not characterized as wet pine savannahs and do not provide suitable habitat for Canby's dropwort.

4.9 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. The onsite wetland are not considered suitable habitat for pondberry.

4.10 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. The long leaf pine (*Pinus palustris*) stand along Fish Road has the potential to support this species, however during our field survey chaffseed was not observed nor were any indicator species observed. It is the opinion of Newkirk Environmental, that even though potential habitat exist, no species were found within this area or anywhere else on site.

5.0 CONCLUSION

It is the opinion of Newkirk Environmental, Inc. that it is unlikely based upon field surveys that any such species nest or live within the property. As noted, some wetlands could potentially provide foraging habitat for wood storks, although these wetlands are not identified as critical habitat and are no different than thousands of acres of similar habitat spread throughout the lowcountry of South Carolina and Georgia. Potentially habitat was also found for the Red-Cockaded Woodpecker and Chaffseed along an area adjacent to Fish Road. Although potential habitat was found for the above listed species, no specimens were found during our site visit. Based upon these findings, it is the opinion of Newkirk Environmental, Inc. that activities on this tract are not likely to cause adverse effects to overall populations of any threatened or endangered species.

Although unlikely, 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 threatened and 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.

**Threatened and Endangered Species Assessment
Camp Hall Tract**

Appendices



Photo 1 (Upland Pine Plantation)



Photo 2 (Upland Pine Plantation)



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Photo 3 (Upland Planted Pine Young Stands)



Photo 4 (Isolated Freshwater Wetland/Gum Ponds)



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Photo 5 (Public Utilities)



Photo 6 (Wetland Hardwoods)



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Photo 7 (Clearcuts)



Photo 8 (Clearcuts)



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Photo 9 (Longleaf Stand)



Photo 10 (Longleaf Stand)



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