

APPENDIX 3

Protected Species under the Federal Endangered Species Act of 1973

(those that may occur in the AL study area)

APPENDIX 3. PROTECTED SPECIES

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) was listed as threatened throughout the conterminous (lower 48) United States until June 28, 2007. On June 29, 2007 the bald eagle was no longer listed, but is still protected under the Bald and Golden Eagle Protection Act. The bald eagle is primarily associated with coasts, rivers and lakes, usually nesting near bodies of water where it feeds. An opportunistic predator, the bald eagle feeds primarily on fish but also takes a variety of birds, mammals and turtles (both live and as carrion) when fish are not readily available. The breeding season of bald eagles varies with latitude. Nesting in the Southeast occurs in three primary areas: peninsular Florida, coastal South Carolina and coastal Louisiana, with sporadic breeding in the rest of the southeastern states. Otherwise, bald eagles occur throughout the Southeast as migrating or over-wintering birds (USFWS 1989).



In the Southeast, the bald eagle nesting period is usually from October 1 to May 15. Egg laying begins as early as late October and peaks in late December. The female does most of the nest construction, but the male assists. The typical nest is constructed of large sticks with softer materials such as dead weeds, cornstalks, grasses, and sod added as nest lining. Bald eagle nests are very large, up to six feet in width and weighing hundreds of pounds. In the Southeast, nests are constructed in dominant or codominant pines or bald cypress trees. Individual pairs return to their same territories year after year, and often territories are inherited by subsequent generations. Eagles are most vulnerable to disturbance early in the nesting period, i.e. during courtship, nest building, egg laying, incubation and brooding (usually the first twelve weeks of the nesting cycle). Disturbance during this critical period may lead to nest abandonment and/or chilled or overheated eggs or young. Human activity near a nest later in the nesting cycle may cause premature fledging thereby lessening the chance of survival. Although bald eagle nests are federally protected, a nest in and of itself (from a biological perspective) is relatively inconsequential to a given pair of eagles. It is the nest site that originally attracted the pair that is of critical importance. It is not uncommon for nests to be blown from trees by storms, after which the resident pairs typically re-nest on the same sites, often in the same trees.



Therefore in the instances where nests, and even nest trees, are lost, management guidelines should continue to apply in their absence for a period extending through at least two complete breeding seasons subsequent to the loss. Bald eagles use alternate nests in different years. Although all nests used by a given pair are situated in the same general vicinity, several nests go unused for several consecutive years and thereby may appear abandoned. Even a solitary nest can go unused for several years, often due to the death of one member of the resident pair, and then be reoccupied by either

the original pair or one member of the original pair with a new mate. Even in instances where both members of a pair have died, the site would likely be taken over by another pair if no habitat degradation occurs. For these reasons, management guidelines should apply to apparently "abandoned" nests for a period extending at least through five consecutive breeding seasons of non-use (USFWS 1989).

Management Zones

- A. **Primary Zone:** This is the most critical area and must be maintained to promote acceptable conditions for eagles.
1. **Size:** Except under unusual circumstances, the primary zone should encompass an area extending from 750 to 1500 feet outward from the nest tree. The precise radius distance between these two extremes would be dependent upon the proximal and spatial configuration of the critical elements (nest tree (s), feeding area, roost trees, etc.) within a particular nesting area, or other compelling factors.
 2. **Recommended Restrictions:**
 - a. Close proximity of the following activities to bald eagle nests are likely to have detrimental impacts on eagle nesting and, therefore, should not occur within the primary management zone at any time:
 - (1) Residential, commercial or industrial development, tree cutting, logging, construction and mining;
and
 - (2) Use of chemicals toxic to wildlife.
 - b. The following activities would likely be detrimental while eagles are present and, therefore, should be restricted in the primary zone during the nesting period, but not necessarily during the non-nesting season:
 - (1) Unauthorized human entry; and
 - (2) Helicopter or fixed-wing aircraft operation within 500 feet vertical distance or 1,000 feet horizontal distance from a nest.
- B. **Secondary Zone:** Restrictions in this zone are needed to minimize disturbance that might compromise the integrity of the primary zone and to protect important areas outside the primary zone. The secondary zone should be arranged so as to be contiguous with feeding areas and provide a protected access between nests and the feeding area. In some cases, that would involve extending a corridor from the primary zone to a particular feeding area, with that corridor requiring the same restrictions as the secondary zone.
1. **Size:** The secondary zone should encompass an area extending outward from the boundary of the primary zone, a distance of 750 feet to one mile. The precise distance will be dependent upon site-specific circumstances.
 2. **Recommended Restriction:**
 - a. Certain activities within the secondary zone are likely to be detrimental to bald eagles and in most cases should be restricted. These activities include, but are not necessarily limited to:
 - (1) Development of new commercial and industrial sites;
 - (2) Construction of multi-story buildings and high density housing developments between the nest and the eagles' feeding area;
 - (3) Construction of new roads, trails, and canals which would tend to facilitate access to the nest;
and
 - (4) Use of chemicals toxic to wildlife, such as herbicides or pesticides.

- b. Other activities may take place in the secondary zone, but only during the non-nesting period. Even intermittent use or activities of short duration during nesting are likely to constitute disturbance. Examples are logging, land clearing, construction, seismographic activities employing explosives, mining, oil well drilling, and low-level aircraft operations. Minor activities such as hiking, bird watching, fishing, camping, picnicking, hunting, and recreational off-road vehicle use may be permitted in the secondary zone at any time.

Feeding

These guidelines are designed to enhance the quality of bald eagle feeding areas and eliminate or minimize human disturbance.

- A. The use of toxic chemicals in watersheds and rivers where bald eagles feed should be prohibited.
- B. Alteration of natural shorelines where bald eagles feed should be prevented or limited. Degraded shorelines should be rehabilitated where possible.
- C. Water quality in eagle feeding areas should be monitored and remedial steps taken when needed.

Roosting

These guidelines are designed to help preserve present roosting sites and provide future habitat for roosts within and adjacent to nesting territories.



- Within the primary management zone, no trees, living or dead should be removed.
- Within the secondary management zone, as many large trees as possible living or dead, should be retained as roost and perch trees. Characteristically, these should be the large trees in the stand. Trees with open crowns and stout lateral limbs are preferable.

The major factor leading to the decline of the bald eagle was lowered reproductive success following the introduction of the pesticide DDT in 1947. DDT residues caused eggshell thinning which led to broken eggs. Use of DDT was suspended in 1972, and by the late 1970's eagle populations began to show signs of recovery. Currently, the most significant factor to affect the recovery of the bald eagle in the Southeast is habitat destruction and disturbance by humans. Additional threats are illegal shooting, electrocution, impact injuries, and lead poisoning (USFWS 1989).

Wood Stork

The wood stork (*Mycteria americana*) is a large wading bird approximately 127 centimeters tall, with a wingspan of 1 to 1.5 meters. This species is highly colonial, usually nesting in large rookeries and feeding in flocks. The plumage is generally white, with black primary and secondary wing feathers and a short black tail. The head displays a prominent bill that is slightly decurved, thick at the base and black.



Wood storks are typically associated with freshwater and brackish wetlands. Most nesting colonies in the Southeast are located in woody vegetation, such as bald cypress, over standing water, or on islands surrounded by open water. Foraging habitat may include freshwater marshes, flooded pastures and flooded ditches (USFWS 1992). Foraging sites are often in areas of fish concentrations due to either local reproduction or drying.

Kirtland's Warbler

Kirtland's warbler (*Dendroica kirtlandii*) is a small neotropical songbird measuring approximately six inches which travels along the North and South Carolina coasts during its migration to the Bahamas. Wintering dates are from September through April. These rare birds are seen and heard by only a handful of humans, mostly biologists. The male's blue-gray back is streaked with black, with a black eye mask and "broken" eye ring make the bird distinctly recognizable. He is pale yellow below with dark streaks alongside his breast. The female is duller and lacks the mask. This warbler constantly bobs its tail.



Entering and leaving the U.S. along coasts of North and South Carolina during its migration, the earliest arrivals (young of the year) may reach the Bahamas in August, but some (adults) remain in the nesting range into late September. Many may not pause in migration until at or near destination (Mayfield 1988).

The diet of the warbler includes many different insect species at various developmental stages, including caterpillars, butterflies, moths, flies, grasshoppers, as well as ripe blueberries, when in season.

Least Tern

At nine (9) inches in length, the Least Tern (*Sterna antillarum*) is the smallest North American tern. During the breeding season wings and back are grey, with white forehead and black head and nape of neck. The tail is forked and the bill is yellow during the breeding season, but fades to black during the winter (Peterson and Peterson 2002).



The least tern's breeding range includes much of the eastern seaboard.

Nesting in South Carolina occurs around mid-May, in colonies on beaches and sandbars (Sidle and Harrison 1990). Least terns are monogamous (one breeding partner at a time), and produce one brood of 1-3 eggs per year. The oceanfront beach is a harsh environment and the least tern has developed techniques for protecting its young, such as shaking water on their eggs to cool them and defecating on intruders (including humans!) into the colony (Sidle and Harrison 1990). Least terns will often be seen hovering over water, searching for prey, such as aquatic invertebrates and small fish (Sidle and Harrison 1990).

Wilson's Plover

Wilson's Plover (*Charadrius wilsonia*) is a small banded plover that occupies sandy beaches and tidal mudflats along the southern Atlantic and Gulf Coasts. The plover is distinguished from other plovers by its heavy black bill and single complete black band across its white breast (Corbat and Bergstrom 2000).

Wilson's Plovers breed in South Carolina, along open sand or shell beaches. The species is monogamous and nests in colonies or in isolated pairs. Nests are simple depressions in the sand, often next to a piece of driftwood, bunch of grass, or some other beach debris. Parents care for offspring until fledging (learn to fly).

The estimated breeding population of Wilson's Plovers is approximately 6,000 and is quite susceptible to major catastrophe such as hurricanes (Corbat and Bergstrom 2000). Human activity during the breeding season also poses a threat to the species by flushing incubating adults from the nest, leaving the eggs exposed to over heating and predation. Coastal development is reducing breeding and non-breeding habitat (Corbat and Bergstrom 2000).

Piping Plover

The piping plover (*Charadrius melodus*) is a shorebird measuring 18 centimeters in length at maturity. The piping plover is the only pale-backed plover on the East Coast and Great Lakes. This plover's back is the color of dry sand. It has a black ring around the neck, yellow to yellow-orange legs, and has a black band across the forehead over the eyes (USFWS 1992).



The piping plover breeds on sandy beaches, sandbars, and similar habitats along the Atlantic coast from North Carolina to Newfoundland, and west to the Dakotas. It occurs along sparsely vegetated areas that are slightly raised in elevation. Breeding areas are generally near a feeding area such as a dune pond or tidal slough. These birds are primarily coastal during the winter and prefer areas with expansive sand or mud flats in close proximity to a sandy beach (USFWS 1992).

Rafinesque's Big-eared Bat

Rafinesque's big-eared bat (*Plecotus rafinesquii*) is a medium sized bat with long pointed ears. Total length of the Rafinesque's big-eared bat averages 80 to 110 millimeters. Actual weight is 7.9 to 13.6 grams, with females being larger than males. There are 2 prominent lumps on the face. The color of the pelage of this species is very diagnostic and serves to distinguish this bat from similar species. The bases of the ventral hairs are black or blackish, and the tips are white or whitish, with substantial contrast between the two (Jones 1977).



Rafinesque's big-eared bat occurs from southern Virginia, west to central Indiana, south and west to southeastern Oklahoma and east to Texas, and south along the Atlantic coast to Florida. Roosting sites utilized most frequently by the species include partially lighted, abandoned and unoccupied buildings or other manmade structures. These bats also roost in caves, trees, and other natural places. Colonies of Rafinesque's big-eared bat range in size from, several animals to as many as 100. The bats emerge from the roost after dark, and return to the roost prior to dawn, with very little foraging during twilight hours. Within a roosting area, the bats appear to move frequently in both summer and winter (Jones 1977).

Kemp's Ridley Sea Turtle

The Kemp's Ridley (*Lepidochelys kempi*) is the smallest and most endangered of the eastern sea turtles. At maturity the shell may reach 71 centimeters in length. The shell is typically very broad. The carapace is gray, gray-brown, or olive. The plastron (bottom of shell) is generally white or yellowish. The head is large with two pairs of prefrontal scales (Collins 1959).



Kemp's Ridley is generally found worldwide, although there are only two known nesting locations, Padre Island, Texas and the Mexican coast between the San Rafael River and Rancho Nuevo. This sea turtle inhabits reefs and shallow coastal waters where it is generally carnivorous, feeding on crabs, snails, squid, and jellyfish (Coop. Ext. Serv./ Univ. Ga. 1992).

Leatherback Sea Turtle

The leatherback sea turtle (*Dermochelys coriacea*) is the largest living turtle, growing to two and one-half meters long and 550 kilograms. It is also the only sea turtle with a leathery shell. The carapace is black, leathery, and scaleless, with seven long ridges. The plastron is spotted white with five long ridges (Collins 1959). The leatherback lives in the open ocean as far out as the edge of the continental shelf. The species is truly pelagic, wandering thousands of miles between nesting beaches and ocean foraging areas. Nesting by the leatherback occurs regularly, but by no means abundantly, in Florida during the spring and early summer months (Ashton 1982).



Loggerhead Sea Turtle



The loggerhead sea turtle (*Caretta caretta*) is a marine sea turtle growing as long as 79 to 122 centimeters and weighing up to 136 kilograms. The carapace is reddish-brown, long and tapered, with five large plates on each side. The head is relatively large with two pairs of prefrontal scales (Collins 1959).

The loggerhead is found in warm parts of the Atlantic, Pacific and Indian Oceans, as well as the Mediterranean and Caribbean Seas. It is found hundreds of miles out to sea as well as inshore areas such as bays, lagoons, salt marshes, creeks, ship channels, canals and mouths of large rivers (USFWS 1995). It nests along the Atlantic and Gulf Coast beaches, with the greatest percentage of nesting occurring in Florida. Female loggerheads come on shore to undisturbed, quiet beaches in the early summer to lay eggs. Hatchlings and small juveniles are most often associated with floating mats of *sargassum* in pelagic habitats (Ashton 1982).

Green Sea Turtle

The green sea turtle (*Chelonia mydas*) is a large, herbivorous sea turtle with a heart-shaped shell, which is broader and flatter than most other sea turtles. The carapace (top of the shell) is broad, low, heart-shaped, smooth, and unkeeled, i.e., the plates do not overlap. The carapace is generally olive to dark brown with numerous black spots. The head has one pair of prefrontal scales, and a single mandibular scale (Collins 1959).



The green sea turtle occurs off shore near Atlantic coastal states during warmer months. Nesting along south Atlantic beaches is rare, with primary nesting occurring in the Caribbean and Florida. Juveniles first appear along Florida coastal waters at 1 to 3 years of age. Juveniles forage as herbivores in shallow coastal waters (Ashton 1982).

Shortnose Sturgeon



The shortnose sturgeon (*Acipenser brevirostrum*) is an anadromous fish approximately 41 to 91 centimeters long, inhabiting marine and tidal freshwater river systems along the Atlantic coast. The fish is brown to gray or black on the back, turning gold or yellow on the sides, and to white underneath (Coop. Ext. Ser/Univ. Ga. 1992). The blunt snout and 11 dorsal plates are distinctive characteristics of this sturgeon (Collins 1959).

During winter, this species occurs in saltwater bays and estuaries of medium to high salinity. During late winter to early spring the shortnose sturgeon moves upstream into freshwater swamps where it will spawn among flooded

trees when water temperatures reach 10-15 degrees centigrade. During summer the adults will congregate in low salinity estuaries to feed on bottom dwelling invertebrates. Eggs and larvae may be susceptible to siltation effects.

Bachman's Warbler

Historical records indicate that the Bachman's warbler (*Vermivora bachmani*) nests in low wet forested areas containing variable amounts of water, but usually some water that is permanent. These areas are described in general as being forested with sweet gum, oaks, hickories, black gum, and other hardwoods; and where there was an opening in the forest canopy, the ground being covered with dense thickets of cane, palmetto, blackberry, gallberry and other shrubs and vines (USFWS 1992).



Seabeach Amaranth



Seabeach amaranth (*Amaranthus pumilus*) is an annual plant found on Atlantic Ocean beaches. It is a herbaceous annual with fleshy and pinkish red to reddish stems in excess of 2 millimeters in diameter. The spinach green leaves are parallel to the sand surface with the stem upright, generally less than 10 centimeters above the ground (Bucher and Weakley 1990). Upon germinating, this plant initially forms a small, unbranched sprig, but soon begins to branch profusely into a clump. This clump often reaches a 0.3 meters in diameter and consists of 5 to 20 branches (USFWS 1992).

Seabeach amaranth occurs on barrier island beaches, where its primary habitat consists of overwash flats at accreting ends of islands and lower foredunes and upper strands of non-eroding beaches (USFWS 1992).