

U.S. Fish & Wildlife Service

# Carolina Sandhills

*National Wildlife Refuge*







*This blue goose, designed by Ding Darling, has become a symbol of the Refuge System.*

The National Wildlife Refuge System Carolina Sandhills National Wildlife Refuge encompasses approximately 45,000 acres of land and water in northeastern South Carolina and is one of more than 500 refuges in the National Wildlife Refuge System, the world's most outstanding network of lands and waters dedicated to wildlife. Consisting of more than 90 million acres in all 50 states, these refuges protect and enhance a wide array of habitats, ensuring the survival and continuing welfare of America's fauna, flora, and other natural resources.

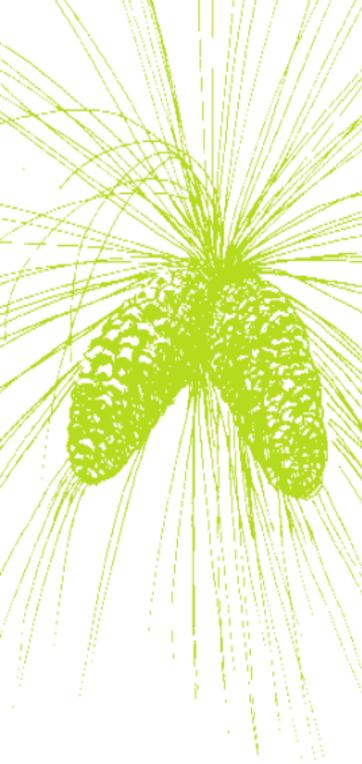


photos to the right and left: USFWS

## **History**

When Carolina Sandhills Refuge was purchased by the federal government in 1939 under the provisions of the Resettlement Act, the land was badly eroded and very little wildlife was to be found. Efforts began immediately to restore this damaged, barren land to a healthy, rich habitat for the plants and animals that once lived here.

The longleaf pine/wiregrass ecosystem, the characteristic habitat of the refuge, once covered more than 90 million acres across the southeastern United States from Virginia to Texas. This unique ecosystem, shaped by thousands of years of natural fires



that burned through every two to four years, has been reduced to less than two million acres.

Today, only scattered patches remain with most occurring on public lands. Factors contributing to the demise of this ecosystem include aggressive fire suppression efforts, clearing for agriculture and development, and conversion to other pine types. Carolina Sandhills Refuge serves as a demonstration site for land management practices which preserve and enhance the diminishing longleaf pine/wiregrass ecosystem.

### **Wildlife Habitat on Carolina Sandhills**

The refuge lies along the fall line which separates the Piedmont Plateau from the Atlantic Coastal Plain. Elevations range from 250 feet to more than 500 feet above mean sea level.

photo: Ted Borg, SCDNR



Rolling beds of deep sandy soils are host to an extensive longleaf pine forest. Longleaf pine is easily recognized by its long needles and large cones. Scattered scrub oaks make up the understory and the dominant ground cover is wiregrass.

Numerous small creeks and tributaries flow through the refuge and drain into either Black Creek on the east side or Lynches River on the west side. Several bottomland hardwood species and dense stands of evergreen shrubs occur along these streams forming pocosin areas throughout the refuge. Thirty man-made lakes and ponds and 1,200 acres of fallow fields, forest openings, and cultivated fields contribute to the diverse habitat found on the refuge.



### Refuge Wildlife

The refuge supports a wide variety of plants and animals including 190 species of birds, 42 species of mammals, 41 species of reptiles, and 25 species of amphibians which are known to occur.



*green-winged teal  
above and hooded  
merganser, photos:  
Bill Alexander*

Historically, bison, Florida panther, red wolf and black bear were all found in the refuge area before habitat fragmentation caused their demise. Although these magnificent creatures have disappeared from the landscape, an abundance of other wildlife species are still found and are protected on the refuge, including several that are rare or unusual.

### *Threatened and Endangered Species*

Several state and federally listed threatened and endangered species are found on the refuge including the pine barrens treefrog, southern bald eagle, and the red-cockaded woodpecker. Unlike other woodpeckers, the red-cockaded roosts and nests in cavities of living southern pines. RCW's serve as an indicator species for the health of the longleaf pine/wiregrass ecosystem. It is also referred to as a "keystone species: having dozens of other animals use its cavity either as a convenience or a requirement. There

are also several plant species of concern to be found on the refuge.

### *Migratory and Resident Birds*



*white-throated sparrow, photo: Bill Alexander*



*great blue heron, photo: Bill Alexander*

### *Native Wildlife*

*yellow-bellied sliders, photo: Ted Borg, SCDNR*

Several species of waterfowl may be found in the fall and winter, including mallards, black ducks, pintails, green-winged teal, American widgeon, ring-necked ducks, and hooded mergansers. Canada geese and wood ducks may be seen year round.

The refuge provides stop-over or nesting habitat for many species of neotropical migratory birds and resident songbirds, including the prairie warbler, Bachman's sparrow, American redstart, and Kentucky warbler.

Great egrets and anhingas are seen using refuge ponds in spring and fall, and a resident population of nesting great blue herons are frequently seen throughout the refuge. Raptors are numerous with red-tailed hawks, northern harriers, and American kestrels being commonly seen. Southern bald eagles and osprey are uncommon visitors to the refuge.

After the refuge's establishment, restocking of beaver, wild turkey and white-tailed deer was necessary. In the fifty years since the refuge was founded, the deer population has grown from an original restocking of twelve deer to a capacity population of healthy individuals, and beaver and wild turkey populations have also made impressive recoveries. Other resident mammals which may be seen include raccoon, opossum, otter, fox, bobcat, fox squirrel and cottontail rabbit.





*pine barrens tree frog, photo: USFWS*

Of the many reptile and amphibian species found on the refuge, the pine barrens treefrog is the most unique. One of our more picturesque amphibians, this bright green frog inhabits boggy areas and breeds in slow moving streamlets. Many places on the refuge provide the unique shrub-bog situation required for their breeding.



*Installing artificial RCW cavity above, red-cockaded woodpecker below, both photos: USFWS*

## **Habitat Management**

The refuge conducts a variety of management programs to enhance the diversity of habitats on the refuge, benefitting a wide array of wildlife species.

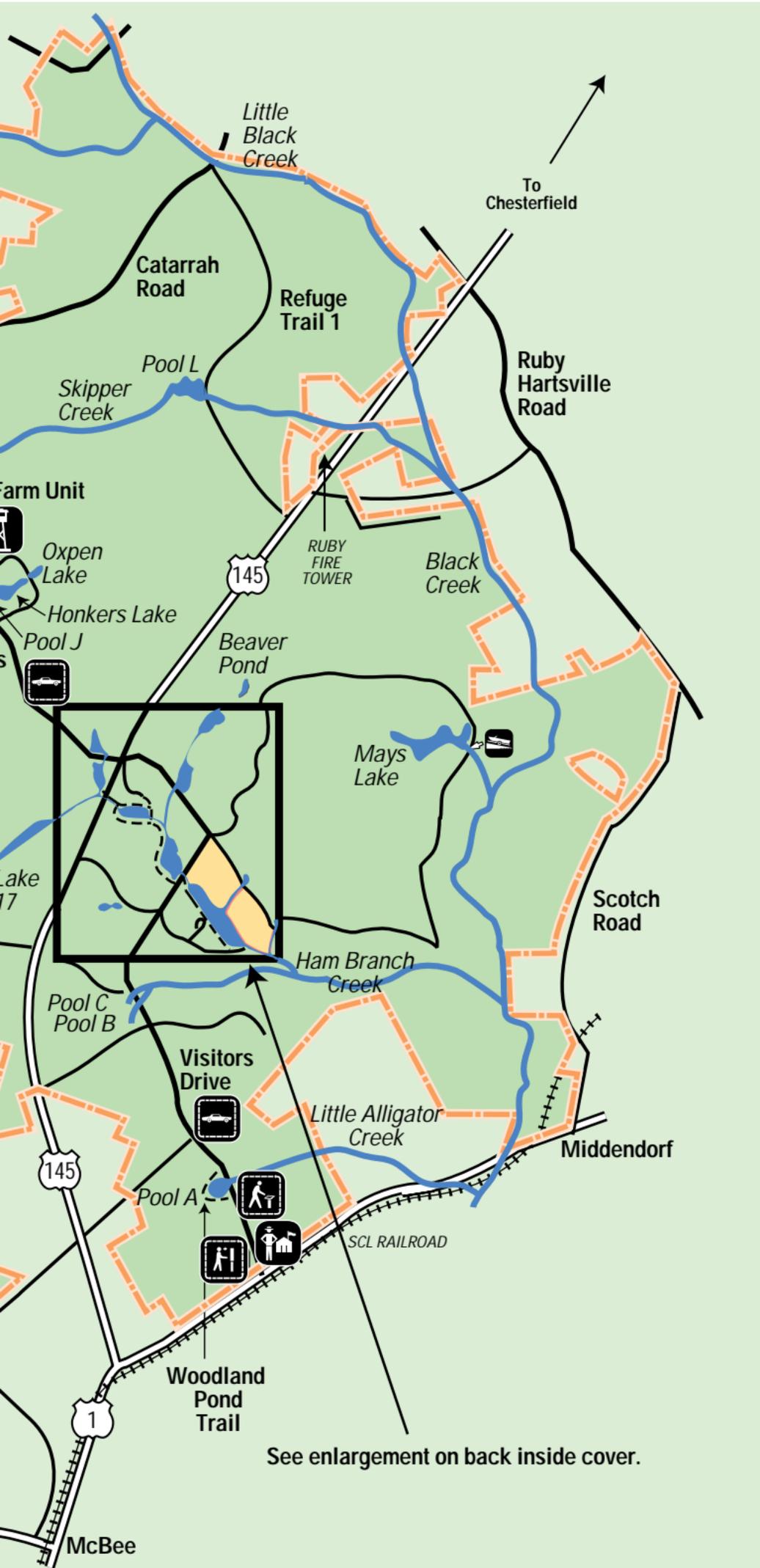
The endangered red-cockaded woodpecker (RCW) receives special consideration on the refuge. This woodpecker needs older pine trees for its cavities and extensive pine forests to meet its foraging requirements. Such habitat is plentiful on the refuge and more is being created as a result of management practices which include the installation of artificial nesting cavities,



# Carolina Sandhills National Wildlife Refuge

	Refuge Boundary
	Freeway
	Paved Road
	Unpaved Road
	Walking Trail
	Office/Visitor Station
	Visitor Information
	Auto Tour Route
	Interpretive Foot Trail
	Lookout Tower
	Closed Area





See enlargement on back inside cover.



population monitoring, and progressive timber management techniques.

Prescribed burning is conducted to mimic the natural fires that historically burned through longleaf pine/wiregrass areas every few years. These fires suppress the growth of hardwood trees, creating an open park-like situation preferred by the RCW and many other animals and plants native to this ecosystem.

The refuge now supports more than 100 groups of RCW's, making it the largest population of this endangered species found in the National Wildlife Refuge System. Their cavity trees have been marked with a distinctive

white band for easy recognition and can readily be seen throughout the refuge, particularly in the Lake Bee, Martins Lake, and headquarters areas.

photos: Ted Borg, SCDNR



Pond water levels are manipulated seasonally to encourage growth of desired emergent aquatic vegetation and control unwanted submergent vegetation. This vegetation could degrade a pond if left unchecked. Water level

manipulation can also provide vegetation and invertebrate food for fish and waterfowl.



*wood duck,  
photo: USFWS*

Certain fields and forest clearings are planted to food crops for wildlife such as waterfowl, quail, dove, turkey, and deer. Other areas are planted to drought tolerant legumes and grasses for soil enrichment and stabilization. Still other areas are mowed and/or burned periodically to mimic the historic natural occurrence of forest openings, contributing to the overall habitat diversity.



*red bellied  
woodpecker; photo:  
USFWS*

Artificial nesting boxes are placed in open areas for bluebirds and near water for wood ducks. These boxes supplement natural cavities, and are regularly maintained by refuge staff and monitored for production.

Neotropical migratory songbirds are studied each spring and summer by mist netting and banding as part of the nation-wide "MAPS" (Monitoring Avian Productivity and Survivorship) project.



## Seasonal Wildlife Events

In general, early morning and late afternoon are the best times to view wildlife. Following is a calendar of some of the more notable “natural events” occurring on Carolina Sandhills Refuge.

### *January*

Waterfowl concentrate on several refuge ponds, especially Martins Lake. An occasional bald eagle may be seen soaring over refuge fields or water areas. Hard freezes occur most frequently in January.

### *February*

Wood ducks begin nest building in artificial boxes and natural cavities. Trailing arbutus and butterwort are among the earliest flowers to bloom. White-tailed deer begin shedding old antlers.

### *March*



Great horned owls are tending to young. Look for strutting turkeys in open fields, particularly during early morning hours. On dry, sandy ridges, the rare Well's pixie moss shows its pale, pinkish-white colors. Depending on water temperature, largemouth bass may begin spawning.

### *April*

The early arriving blue-gray gnatcatcher builds its nest along water courses as the resident Bachman's sparrow begins to sing in field edges and mature pines. Bluebird nestlings extend eager beaks from within the many nesting boxes on the refuge.

### *May*

Neotropical songbird migration is in full swing. Endangered red-cockaded woodpeckers are nesting in mature longleaf pines. Young wood ducks are seen in vegetated perimeters of ponds and lakes.

### *June*

Near seepage bog edges, the pine barrens treefrog can be heard calling at night. White-tailed deer are giving birth as are many other wildlife species. The flower of several species of carnivorous pitcher plants is prominent.

## July

Most wildlife activity has slowed due to hot weather. This, however, is the best month for observing white-tailed does with their fawns. Abundant rainfall during the month is quickly soaked up by the deep, sandy soils on the refuge.

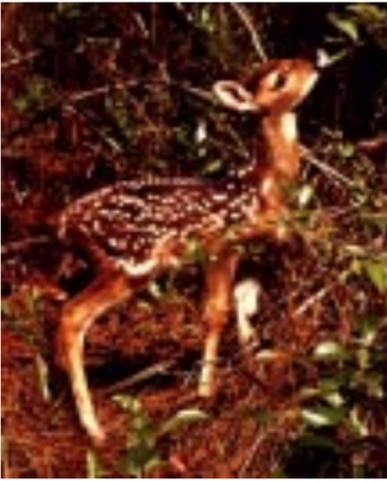


photo: Bill Alexander

## August

Many fall wildflowers, including lobelia, blazing star and hairy false-foxglove begin blooming on roadsides and field edges. Listen for the call of the chuck-will's-widow and the whip-poor-will. Noticeably cooler mornings may occur late in the month.



photo: Brian Von Erden

## September

One can see hawks, warblers and other songbirds in fall migration along pool edges and water courses. Pine barrens gentians are one of the last wildflowers to bloom.

## October

October is an opportune time for bald eagle observations. White-tailed bucks begin rubbing the protective velvet off of their antlers and stake out a territory. The first frost arrives.

## November

Early in the month, mockernut hickory, red maple, blackgum, and dogwood show their radiant fall colors. Ducks, such as mallard, gadwall, and widgeon have begun arriving.

## December



photo: Bill Alexander

Canada geese are heard calling from refuge ponds and lakes. Fox, bobcat and raccoon may be seen with the coming of winter and the reduction of natural cover.

## Public Use Opportunities

The refuge offers numerous

experiences which enable visitors to become acquainted with wildlife. Facilities include an auto tour route, two nature trails, two observation towers and a photography blind.

Wildlife interpretive displays and literature may be found at the main entrance, refuge office, and Lake Bee area to help the visitor better understand the refuge and its objectives.

Environmental education programs are conducted throughout the year for school children, civic organizations, and the general public.

Numerous ponds and lakes are open for fishing, and limited hunting is permitted for several species. Consult the refuge office for current regulations.

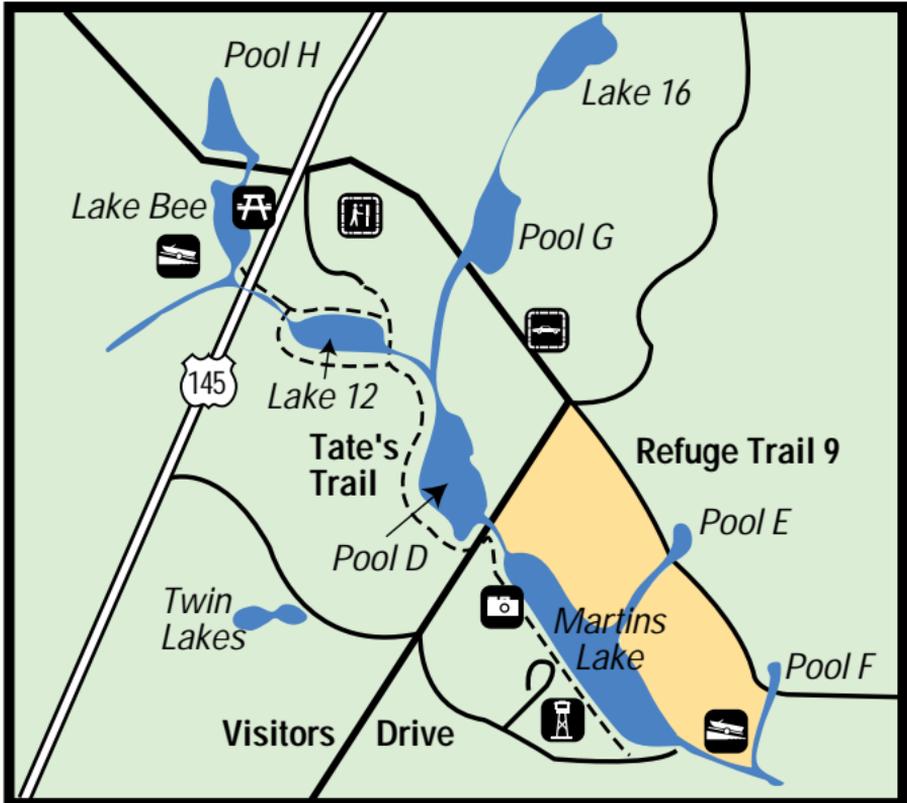
### Enjoying the Refuge

Carolina Sandhills National Wildlife Refuge, located approximately 70 miles northeast of Columbia, South Carolina and 75 miles southeast of Charlotte, North Carolina, is free of charge and open year-round from sunrise to sunset. The refuge office/visitor contact station, located on U. S. Highway 1, four miles northeast of McBee, is open from 8:00 am to 4:30 pm, Monday through Friday.



*yellow pitcher plants,  
photo: USFWS*

In order to lessen the impacts to wildlife and habitats, camping and the use of off-road vehicles is prohibited on the refuge.



All government property, including natural, historical, and archaeological features are protected by Federal law. Searching for or removal of objects of antiquity or other value is strictly prohibited. Please do not pick flowers or remove other vegetation.

Firearms are allowed only during special hunts and must be unloaded and encased or dismantled when transported in vehicles.

Layered clothing during cool months and the use of insect repellent during warm months are recommended. Binoculars, spotting scopes, and field guides are also suggested.

For additional information, write to  
Refuge Manager  
Carolina Sandhills  
National Wildlife Refuge  
Route 2, Box 100  
McBee, SC 29101

Carolina Sandhills National Wildlife Refuge  
Route 2, Box 100  
McBee, SC 29101  
803/335 8401  
r4rw\_sc.crs@fws.gov

U.S. Fish & Wildlife Service  
1 800/344 WILD  
<http://www.fws.gov/~r4eao>

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