

Carolina Sandhills National Wildlife Refuge (NWR) encompasses approximately 45,000 acres in northeastern South Carolina. The refuge is one of more than 560 refuges in the National Wildlife Refuge System, the world's most outstanding network of lands and waters dedicated to wildlife the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats for the benefit of present and future generations of Americans.

Refuge History

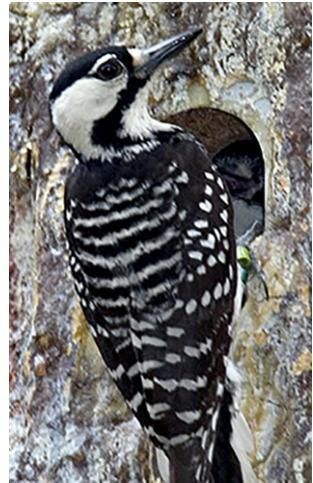
In 1939 the federal government purchased land under the provisions of the Resettlement Act. The eroded land supported very little wildlife. Efforts began immediately to restore this damaged, barren land to a healthy, rich habitat for the plants and animals that historically occurred.

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. Natural fires that burned every two to four years shaped this unique ecosystem. Today, only scattered patches of this ecosystem remain, totaling approximately 4.3 million acres. 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 NWR serves as a demonstration site for land management practices that preserve and enhance the diminishing longleaf pine/wiregrass ecosystem.

Refuge Habitat

The refuge lies in the Sandhills physiographic region which separates the Piedmont Plateau and the Atlantic Coastal Plain. Elevations range from 250 feet to more than 500 feet above mean sea level. Rolling beds of deep sandy soils are host to an extensive longleaf pine forest. Longleaf pine is easily identified by its long needles and large cones. The midstory consists of scrub oaks and scattered shrubs, while wiregrass is the dominate plant in the ground layer.



Red-cockaded woodpecker,
credit USFWS

Numerous small creeks and tributaries flow through the refuge and drain into either Black Creek on the east side and Lynches River on the west side. Atlantic white cedar, pond pine, and dense stands of evergreen shrubs occur along these streams forming *pocosin* (swamp on a hill) areas throughout the refuge. Thirty man-made lakes and ponds and 1,200 acres of old fields, forest openings, and cultivated fields contribute to the diverse habitats found on the refuge.

Refuge Wildlife

The refuge supports a diverse assemblage of plants and animals including more than 190 species of birds, 42 species of mammals, 41 species of reptiles, 25 species of amphibians, 62 species of butterflies and moths, 56 species of native bees, and more than 800 species of plants!

Threatened and Endangered Species

An abundance of rare and uncommon wildlife species are found on the refuge. Several state and federally listed threatened and endangered species occur on the refuge including the Pine Barrens treefrog and red-cockaded woodpecker. There are dozens of plant species of concern found on the refuge, including white-wicky, Well's pixie moss and three species of pitcher plants.

Migratory and Resident Birds

Several species of waterfowl use the refuge 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 reside year round. The refuge provides stop-over or nesting habitat for many species of neo-tropical migratory birds and resident songbirds, including the prairie warbler, Bachman's sparrow, American redstart, and Kentucky warbler.

Great egrets and anhinga use refuge ponds in spring and fall. A resident population of great blue herons nests on the refuge. Common raptors include red-tailed hawks, northern harriers, and American kestrels.

Mammals

After the refuge's establishment, beaver, wild turkey and white-tailed deer were restocked. The deer population has grown from an original restocking of 12 deer to a healthy population. Beaver and wild turkey populations have also made impressive recoveries. Resident mammals include raccoon, opossum, otter, fox, bobcat, fox and gray squirrel, and cottontail rabbit.

**Carolina Sandhills
National Wildlife Refuge**
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U.S. Fish & Wildlife Service

Carolina Sandhills National Wildlife Refuge



Bobwhite quail, credit William Alexander

Herpetofauna

Of the many reptile and amphibian species that occur on the refuge, the Pine Barrens treefrog is the most unique. This bright green frog inhabits boggy areas and breeds in slow moving streams. Many areas of the refuge provide the unique shrub-bog habitat required for breeding.

Red-cockaded Woodpecker

The refuge supports the largest population of the endangered red-cockaded woodpecker (RCW) on Service-owned lands and the second largest population in South Carolina. RCWs serve as an indicator species of the overall health of the longleaf pine/wiregrass ecosystem. The needs of the RCW guide management decisions and actions.

Unlike other woodpeckers, RCWs roost and nest in cavities in living pine trees. The RCW requires older pine trees in which to excavate cavities. These older pines are more likely to have "heart rot," a fungal disease that softens the heart wood of the tree, thus facilitating cavity excavation. RCWs also require large, older trees for foraging. Such habitat is plentiful on the refuge and forest management activities, particularly in the last 40 years, have created more.

Other management practices including the installation of artificial nesting cavities, population monitoring, and midstory control also contribute to recovery efforts for this species. The refuge supports more than 150 family groups of red-cockaded woodpeckers. Their cavity trees are painted with a white band.

Habitat Management

The refuge conducts a variety of management programs to enhance the diversity of habitats on the refuge, benefiting many wildlife species.

Prescribed Burns

An important tool used to manage the longleaf pine/wiregrass ecosystem is prescribed burning. These controlled burns mimic the natural fires that historically burned throughout this ecosystem. These fires suppress the growth of hardwood trees and shrubs, creating the open, park-like conditions preferred by the RCW and many other species native to this ecosystem. The charred appearance of burned areas is only temporary as lush grasses and forbs quickly respond to favorable growing conditions created by the burn. The refuge's prescribed fire season starts in January and generally concludes in June.



Ponds

Refuge biologists manipulate water levels on several refuge ponds to encourage growth of desired emergent aquatic vegetation and to control unwanted submergent vegetation. These unwanted weeds can degrade pond habitat. The process of drawing down the pools provides unique wildlife habitats as the pond transitions from full pool to mudflats and back to full pool. Wading and shore birds exploit recently exposed mudflats, feeding on invertebrates and fish. Pool drawdowns begin in May through July and are staggered to meet specific management objectives. Pools are returned to full level in late fall to provide habitat for waterfowl. Some pools are stocked with catfish, bream, crappie and bass to provide recreational fishing opportunities.

Fields/Openings

Fields and wildlife openings are managed for wildlife such as quail, dove, rabbit, turkey and deer, as well as nongame birds. In early spring, strips within fields are disked to encourage native legume production. Other areas within fields are periodically mowed or burned to mimic historic disturbances that stimulate native grass production. In fall, cool season grasses such as wheat or rye are planted in strips to provide winter forage.

May/June - Neotropical songbirds migrate through the refuge. Endangered red-cockaded woodpeckers nest in mature longleaf pines. Young wood ducks swim in vegetated perimeters of ponds and lakes. Carnivorous pitcher plants begin to flower and the white wicky blooms in stream head pocosins. Near seepage bog edges, the Pine Barrens treefrog calls at night. White-tailed deer give birth.

July/August - Wildlife activity slows due to hot weather. White-tailed deer does forage with their fawns. Abundant rainfall during the month is quickly soaked up by the deep, sandy soils. Many fall wildflowers, including lobelia, blazing star and hairy false-foxfoglove bloom along roadsides and field edges.

Listen for the call of the chuck-will's-widow and the whip-poor-will.

September/October - Hawks, warblers and other migratory songbirds travel through the refuge along pool edges and water courses. Pine Barrens gentians bloom in refuge woodlands. White-tailed deer bucks rub the protective velvet off of their antlers and stake out a territory. Look for blue winged teal in refuge ponds.

November/December - The first frost arrives. Mockernut hickory, red maple, black gum, and dogwood show their radiant fall colors. Ducks, such as mallard, gadwall, and widgeon arrive. Canada geese call from refuge ponds and lakes. Fox, bobcat and raccoon are more obvious because of the coming of winter and the reduction of natural cover.

Visitor Opportunities

The refuge offers numerous opportunities and facilities for wildlife-dependent recreation such as hiking, bird watching, photography, and nature study. Please review the reverse side for details about recreation areas, trails, and exhibits. The refuge is also open to hunting for several species and numerous ponds and lakes provide fishing opportunities. Please consult the refuge office or web site for current hunting and fishing seasons, dates, and regulations.

Photos, background: Oxpen 3 Lake, credit Jim Tobalski; left to right, Prairie warbler, credit USFWS/Keenan Adams; Pitcher plants, credit USFWS; Pine Barrens gentian cluster, credit Will Stuart; Red-shouldered hawk, credit Jim Tobalski; Rattlesnake, credit USFWS/Jack Culpepper; Summer tanager, credit USFWS/Keenan Adams

Carolina Sandhills National Wildlife Refuge

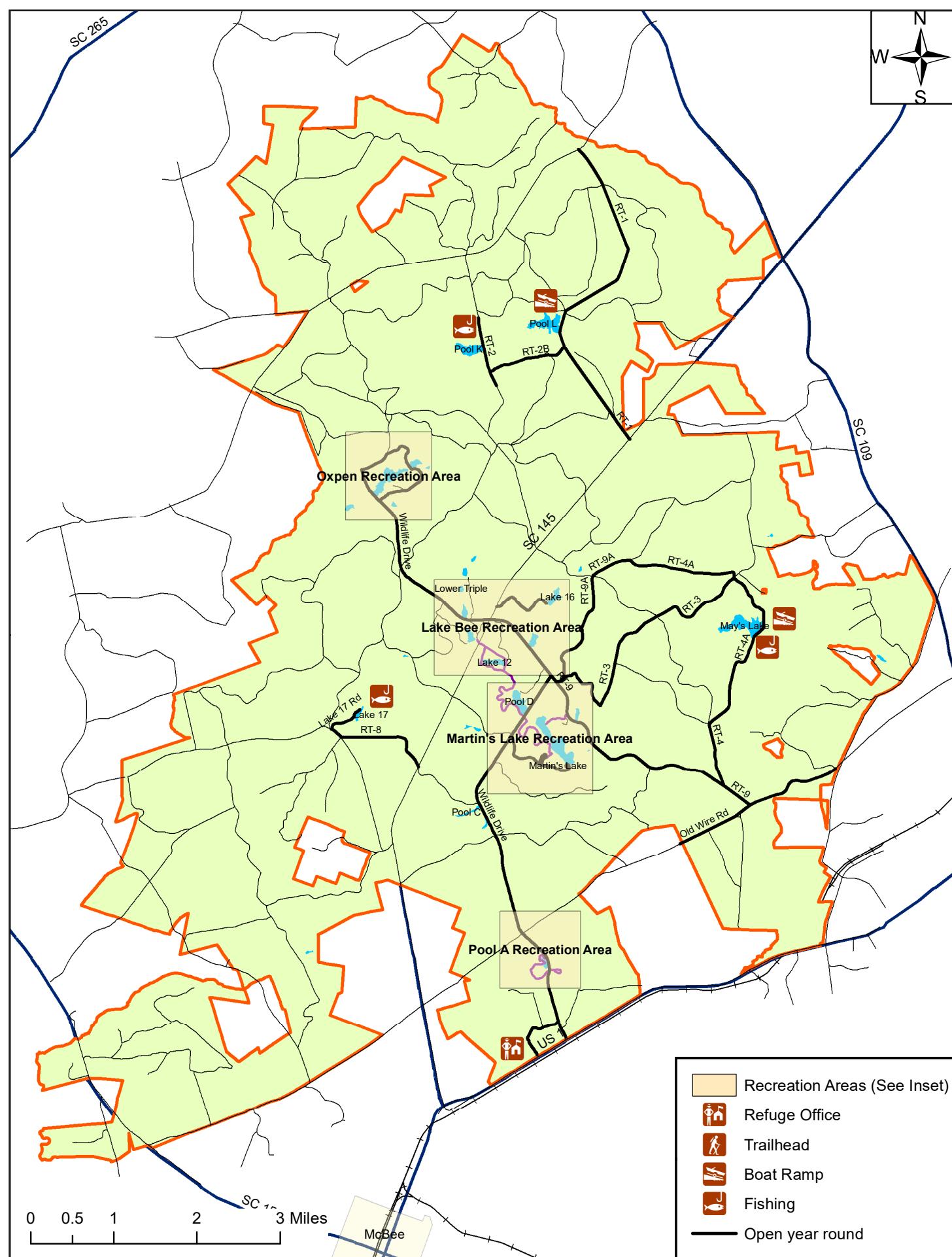
Enjoying the Refuge

Carolina Sandhills National Wildlife Refuge, located approximately 60 miles northeast of Columbia, South Carolina and 70 miles southeast of Charlotte, North Carolina, is free of charge and open 365 days a year from one hour before sunrise until one hour after sunset. The refuge office/visitor contact station is located on U.S. Highway 1, four miles northeast of McBee. The office is open from 7 am to 3:30 pm, Monday through Friday. (Closed Federal holidays).



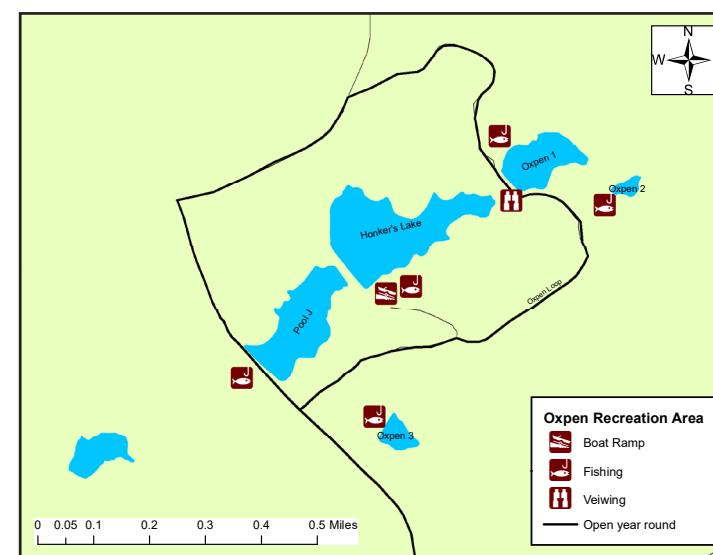
Bachman's sparrow; credit USFWS/Keenan Adams

- Camping, use of off-road vehicles, drones, and electronic bird calls are prohibited.
- All government property, including natural, historical, and archaeological features is protected by Federal law.
- Searching for or removing objects of antiquity or other value is strictly prohibited.
- Please do not pick flowers or remove other vegetation.
- The use or possession of alcoholic beverages is prohibited on the refuge.
- Layered clothing during cool months and the use of insect repellent during warm months are recommended.
- Binoculars, spotting scopes, field guides, and water are also suggested.



The refuge's paved Wildlife Drive, along with 30 miles of earthen and gravel roads are open year round for wildlife observation and photography. Other refuge roads are seasonally open to vehicular traffic except those marked "No vehicles beyond this point" or those that have been blocked or gated. All areas of the refuge are open to foot traffic except for those posted "Closed to public entry." Please do not block any refuge gates.

Please notice that the refuge map includes several locations that provide enhanced recreational opportunities. A summary of facilities and activities is described for each location along with detailed area maps.



Oxpen Recreation Area

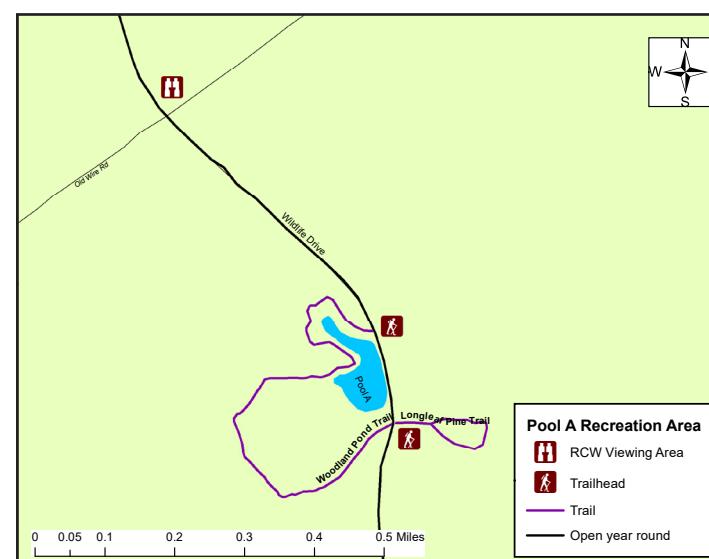
Home to white-tailed deer, turkey, hawks, waterfowl, and small mammals. It is also a popular fishing area and home to

a variety of wildflowers. The seepage bog near Oxpen Lake 1 includes a large population of pitcher plants. An observation deck provides a scenic view. Listen for the characteristic call of the bobwhite quail May through July.

Pool A Recreation Area

- Woodland Pond Trail – One mile; passes through wetlands, upland pine habitat, and a small open area. Good area for songbirds; terminus connects with Longleaf Pine Interpretive Trail across the Wildlife Drive.
- Longleaf Pine Interpretive Trail – This $\frac{1}{4}$ mile trail with interpretive signage focuses on the longleaf pine ecosystem.
- Red-cockaded Woodpecker (RCW) Viewing Area - April through June, this observation area provides good opportunities for viewing red-cockaded woodpecker nesting and foraging activity. Please minimize disturbance to these endangered birds by staying at least 100 feet from cavity trees. All known cavity trees are marked with a white band of paint at eye level.

In addition to RCW viewing, this area is an excellent example of the desired future conditions for the longleaf pine ecosystem – open, park-like habitat with multiple ages of longleaf pine and grasses, forbs and wildflowers as groundcover.



Martin's Lake Recreation Area

A boat ramp and an accessible fishing pier are available at Pool D. A picnic table, two trails, a boat ramp, and an accessible photoblind and overlook are located at Martin's Lake. The lake edges provide excellent conditions for observing wading birds, otters, and small mammals.

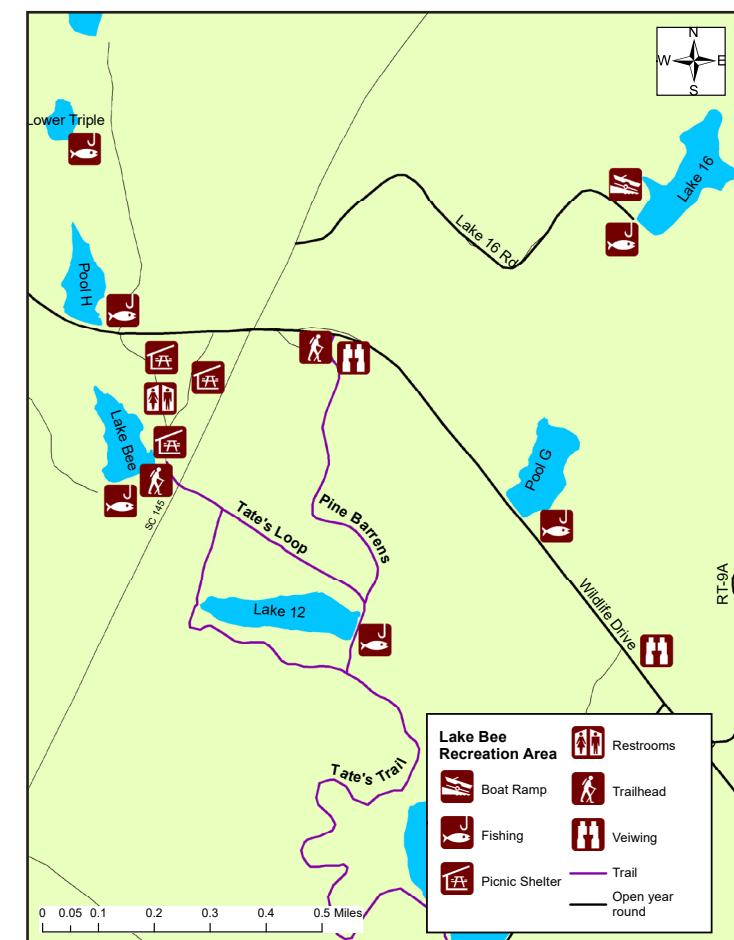
- Tate's Trail – Three miles in length, this trail runs parallel to Martin's Lake and Pool D, makes a loop around Lake 12, and culminates in the Lake Bee Recreation Area. Provides a good view of diverse habitats, including wetlands, bottomland hardwoods, upland pine-scrub oaks, and open pine-grassland areas.
- Tripod Trail – This 0.3 mile trail leads to the photoblind. Interpretive signage along the way describes common wildlife and plants.
- Visitors with a state-issued accessibility permit/placard may use the accessible parking area at both the photoblind on the north side of Martin's Lake and at the scenic overlook adjacent to Tate's Trail.



Credit USFWS

Lake Bee Recreation Area

Enjoy fishing, hiking, wildlife observation, and picnicking in this area. Three picnic shelters and dozens of tables, along with restrooms, are available. The lake edge provides good birding. Notable plants and animals found in this area include brown-headed nuthatches, several species of carnivorous plants, and the rare Pine Barrens tree frog, which may be heard from the Pitcher Plant Overlook on the north end of the lake. Nearby Pool H and Triple Lakes host wood ducks and other waterfowl in appropriate seasons.



■ Tate's Trail – Three miles in length, access points are Martin's Lake Loop, Wildlife Drive at Pool D, Pine Barrens Gentian Trail, and Lake Bee Recreation Area.

■ Pine Barrens Gentian Trail – A connector trail to the Tate's Trail, access this trail from the visitor's kiosk on Wildlife Drive located near the intersection with SC Highway 145. This trail follows a woods road for 0.7 miles to Lake 12 and is known for blooming Goat's Rue and Sandhills Lupine in spring and Pine Barrens Gentian in fall.

■ Turpentine Educational Kiosk – visit this kiosk to learn about the pines that built the south. A short walk from the kiosk are the remnants of an earthen turpentine kiln where pine tar was collected, barreled and shipped via railway to coastal markets for use in ship building.

Black Creek and Ham Branch

One of the best areas to see and hear neotropical birds. Follow the Wildlife Drive past Pool D to the stop sign; turn right on RT-9 and proceed until this road intersects with Wire Road. Park your car and walk to your right to Ham Branch and your left to Black Creek.

