

# Pinckney Island National Wildlife Refuge

## Interpretive Tour Talking Points

### REFUGE ESTABLISHMENT AND ADMINISTRATION

Pinckney Island NWR was established in 1975, by a Deed of Donation, *“as a wildlife refuge and as a nature and forest preserve for aesthetic and conservation purposes, without disturbing the habitat of the plant and animal populations except as such disturbance may be necessary to preserve the use of the real property for the purposes above mentioned”* (Deed of Donation, December 4, 1975); and *“for use as an inviolate sanctuary, or for any other management purpose, for migratory birds”* (16 U.S.C. 715d, Migratory Bird Conservation Act)

Pinckney Island National Wildlife Refuge is managed by the U.S. Fish and Wildlife Service (Federal Government) and is part of a larger system of public lands called the National Wildlife Refuge System. It is one of over 565 National Wildlife Refuges located throughout the United States. There is at least one refuge in every state (even Puerto Rico!) National Wildlife Refuges are special places because on refuges, wildlife comes first! While other federal lands like National Parks and National Monuments are managed more for the benefit of people, National Wildlife Refuges focus on wildlife and habitat management and conservation. The Fish and Wildlife Service understands the vital role people play in its conservation mission, which is why most refuges are open to a variety of wildlife-dependent recreational activities like wildlife observation, photography, hunting, and fishing.

The primary management objectives for Pinckney Island NWR are:

- To protect and provide habitat for threatened and endangered species.
- To provide and maintain habitat for migratory and resident birds that utilize and or nest annually on the refuge.
- To provide, enhance, and maintain habitat for native wildlife.
- To promote wildlife interpretive and recreational opportunities.

Pinckney Island NWR is administered by the Savannah Coastal Refuges Complex, which also includes the following refuges:

- Savannah NWR (Jasper County, SC & Chatham & Effingham Counties, GA)
- Tybee NWR (Jasper County, SC)
- Wassaw NWR (Chatham County, GA)
- Harris Neck NWR (McIntosh County, GA)
- Blackbeard Island NWR (McIntosh County, GA)
- Wolf Island NWR (McIntosh County, GA)

While there is no staff directly assigned to Pinckney Island, the staff of the Savannah Coastal Refuges Complex supports all refuges within the Complex. The headquarters office for the Complex is located at the Savannah National Wildlife Refuge Visitor Center located in Hardeeville, SC. Staff and equipment resources are shared amongst all seven refuges which makes planning and prioritizing extremely important in order to achieve management goals.

In the absence of permanent staff on the refuge, Pinckney is fortunate to have a very dedicated group of volunteers who live in the area. These volunteers work very hard, keeping the refuge trails mowed and cleared, performing general maintenance, picking up trash, cleaning and repairing signs and exhibits, and assisting visitors.

## **REFUGE HISTORY**

Pinckney Island NWR is archaeologically rich, with numerous prehistoric and historic sites identified. Analysis of the prehistoric sites indicate human occupation dating from the Archaic Period (8000 - 1000 BC), with intensive use during the Mississippian Period (1000 - 1500 AD).

Historic artifacts indicate that small-scale, impermanent settlements were made on Pinckney by French and Spanish groups in the 16th and 17th centuries. Permanent settlements did not occur until 1708 when Alexander Mackay, an Indian trader, obtained title to 200 acres of Pinckney Island. By 1715, Mackay had acquired the rest of Pinckney and most of the other islands which compose the present refuge. In 1736, Mackay's widow sold the islands to Charles Pinckney, father of General Charles Cotesworth Pinckney. General Pinckney was a commander during the Revolutionary War, a signer of the United States Constitution and, in 1804 and 1808, a presidential candidate. Pinckney was an absentee landowner until 1804, when he moved to the island and began managing the property. The Pinckney family developed the islands into a plantation, removing much of the maritime forest and draining and tilling the fertile soil.

The plantation flourished until the Civil War when it was occupied by Union Troops. Small skirmishes took place on Pinckney Island. The most significant incident occurred on August 21, 1862, when the Confederate Beaufort Light Artillery/11th Infantry attacked the camp of Company H, Third Regiment, New Hampshire Volunteers, killing four Union soldiers and wounding ten men (eight Confederate, two Union). Army records also reflect that black troops were recruited for the Union Army from the area. Five military (U.S. Colored Infantry) headstones are located in a cemetery on the northwest side of Pinckney Island, indicating the possibility that slaves living on the plantation during the Civil War were recruited by the United States Army.

After the war, the plantation did not prosper, and by the 1930s, was virtually abandoned. In 1937, after over 200 years of Pinckney ownership, the plantation was sold to Ellen Bruce, wife of James Bruce, a New York banker who used the property as a hunting preserve. Hardwoods and pines were planted, ponds were built to attract waterfowl and for irrigation, and 70 percent of the farm fields were placed back into cultivation.

Edward Starr and James Barker purchased the islands in 1954 and continued to manage them as a game preserve. In 1975, the islands were donated to the Service to be managed exclusively as a national wildlife refuge and as a nature and forest preserve for aesthetic and conservation purposes.

## **REFUGE HABITATS**

The 4,053-acre Pinckney Island NWR includes Pinckney Island, Corn Island, Big Harry and Little Harry Islands, Buzzard Island, and numerous small hammocks. All together, the refuge is 2,729 acres of salt marsh and tidal creeks, 274 acres of forest, 240 acres of brush, 100 acres of grassland and fallow fields, 60 acres of roads and administrative land, and 38 acres of freshwater ponds; which collectively support a diversity of bird and plant life.

Pinckney Island NWR has several unique/threatened habitats: maritime forest, slash pine, saw palmetto, ephemeral wetlands, and bluff oak associated with magnolia and spruce pine. The north end of Pinckney Island NWR, including many small hammocks, is dominated by live oak with water oak, loblolly pine, and cabbage palm; secondary species include hickory, pecan, magnolia, sweet gum, red cedar, and lesser numbers of maple, southern red oak, laurel oak, sassafras, hackberry, redbud, and winged elm. A small number of longleaf, loblolly, and slash pine stands are located throughout the refuge. Brush and hedge rows are dominated by wax myrtle and sweet gum with lesser amounts of sassafras, sumac, sycamore, and black cherry. The salt marsh consists primarily of salt marsh cord grass. Other typical vegetation found in a narrow band around the islands and in the higher marsh hammocks includes glasswort, black needlerush, and sea oxeye.

Freshwater habitat on Pinckney Island NWR is limited to approximately 38 acres. There are between 30-50 small ponds/depressions, ranging from 0.5-acre up to 4 acres, which hold water during wetter periods of the year. Most of the named ponds (Ibis, Starr, Osprey, Nini Chapin, and Clubhouse) are man-made, not natural wetlands, which makes them even more susceptible to the effects of drought.

### Maritime Forest

Crossing into the back dunes and beyond of the barrier islands, you will enter the realm of the maritime forest. The maritime forests of the southern coast are as unique and enchanting as any other forest in the United States. The intricately gnarled Live Oaks (*Quercus virginiana*) cloaked in Spanish Moss (*Tillandsia usneoides*) and Resurrection Fern (*Polypodium polypodioidies*) and surrounded by Saw Palmetto (*Serenoa repens*) seem to be relics of a slower and quieter past.

The spreading canopy of Live Oak, Southern Pine (*Pinus* sp.), Southern Magnolia (*Magnolia grandifolia*) and Cabbage Palm (*Sabal palmetto*) temper the harsh forces of wind and water that assault the dunes and beaches. Temperatures and winds are moderated under the tree canopy, which increases moisture levels and allows a dense understory of herbs and shrubs to develop.

Spanish Moss and Resurrection Fern are both epiphytes, plants that live on other plants entirely independent of the soil. Typically epiphytes require humid environments where they can absorb moisture directly from the atmosphere, so they are more common in the humid tropics than temperate regions.

In the understory dense clusters of Saw Palmetto provide excellent hiding places for Eastern Diamondback Rattlesnakes (*Crotalus adamanteus*), a shy and elusive predator vital to the maritime forest ecosystem.

### Salt Marsh

Salt marshes are a mosaic of snaking channels called tidal creeks that fill with seawater during high tides and drain during low tides. Fish species including flounder and mullet live most of their lives in marsh creeks.

Levees are areas of higher ground that border the marsh creeks. Between the levees and tidal creeks are marsh flats, which contain pools and salt pannes. Salt pannes are shallow depressions that contain very high concentrations of salt. Pannes retain seawater for very short periods of time. When the seawater evaporates, the salts remain and accumulate over many tidal cycles. Glasswort, a plant tolerant to very high salt concentrations, is one of the only organisms able to survive in salt pannes. Pools are generally deeper than pannes, and retain water all year long (Molles, 2002). Salt-marsh snails and green crabs are some of the creatures found in pools scattered across the marsh.

Low-lying areas of the marsh are often covered with large, flat expanses of mud called mud flats (Bertness, 1999; Smith and Smith, 2000). Composed of fine silts and clays, mud flats harbor burrowing creatures including clams, mussels, oysters, fiddler crabs, sand shrimp, and bloodworms.

Salt marshes are salty because they are flooded by seawater every day. They are marshy because their ground is composed of peat. Peat is made of decomposing plant matter that is often several feet thick. Peat is waterlogged, root-filled, and very spongy. Because salt marshes are waterlogged and contain lots of decomposing plant material, oxygen levels in the peat are extremely low—a condition called hypoxia. Hypoxia promotes the growth of bacteria which produce the rotten-egg smell that is attributed to marshes and mud flats.

Salt marshes are covered with salt-tolerant plants, or halophytes, like salt hay, black needlerush, and smooth cordgrass. However, these plants do not grow together in the same area. Marshes are divided into distinct zones, the high marsh and the low marsh. The difference in elevation between these two areas is usually only a few

centimeters, but for the plants that inhabit each of these zones, a few centimeters makes a world of difference. The low marsh floods daily at high tide. The high marsh usually floods about twice a month during very high tides associated with new and full moons. The more often an area is flooded, the more saline it is. Plants living in salt marshes have different tolerances to salt. Those with higher tolerances are found in the low marsh, and those with lower tolerances to salt are found in the high marsh zones. Plants from one marsh zone are never found in the other.

Smooth cordgrass (*Spartina alterniflora*) dominates the low marsh all the way down to the estuary's edge. It is tall, sturdy, broad-leaved, and one of the main components of peat. As one moves toward the high marsh, salt hay (*Spartina patens*), a very fine-leaved grass about 1-2 feet tall, and spike grass (*Distichlis spicata*) dominate the area. The highest parts of the marsh are characterized by black needlerush (*Juncus roemerianus*), which grows in dense swaths.

Surrounding the high marsh are the upland habitats. Uplands are rarely, if ever, flooded with saltwater.

### Freshwater Ponds

Pinckney Island NWR has approximately 38 acres of freshwater habitat, comprised of between 30 and 50 small ponds/depressions, ranging from one-half acre up to 4 acres in size. Many of these only hold water during wetter periods of the year. A few, however, hold water throughout the year and provide excellent roosting and nesting habitat for colonial wading birds like egrets, ibis, and herons. These birds nest on the small islands within the ponds, and the water surrounding the sites deters mammalian predators like raccoon from entering nests. Alligators patrolling these waters frequently provide an additional deterrent. Ibis Pond, which is just a mile walk from the refuge parking area, is a popular site for viewing wading birds and other pond life.

### Ibis Pond

Ibis Pond, originally a borrow pit, was constructed in 1979-80 through a partnership with a local highway contractor who was working on the new bridge to Hilton Head Island. The contractor was permitted to remove fill dirt needed for the project, and in exchange, constructed the pond to specifications set by the refuge manager. The pond is approximately two acres in size and contains one small island. It has at times over the years supported one of the most productive colonial wading bird rookeries in the state. This productivity is totally dependent upon the availability of water though. In years of drought, even with the addition of a pump system donated by former refuge volunteer Nini Chapin, water levels in Ibis Pond have gotten so low that the rookery all but disappeared for several years. Low water means no alligators patrolling the nesting island and trees, leaving the nests vulnerable to raccoons and other predators. For the past several years, the pond has been experiencing a period of good productivity with water levels remaining fairly constant and sufficient enough to attract nesting birds.

### Butterfly Garden

Located between the main road and Ibis Pond, a butterfly garden was planted in 2007 through a partnership forged between a former refuge volunteer, a local Hilton Head Island High School teacher, and the Hilton Head Audubon Society. Student's from the school's Environmental Club conducted research to determine the best plants to use, taking into consideration factors like avoiding invasive and/or exotic plants and using native plants that are drought and deer resistant, as well as good attractors for butterflies. Refuge volunteers prepared the garden site prior to the students joining them for the planting. A pump system was installed later, by refuge staff, to provide volunteers an easier way of watering the garden. Since planting, the routine maintenance of the garden has been conducted by the Lowcountry Master Gardener's Association. Throughout the summer and early fall months, the garden flourishes and changes colors, attracting around 20 species of butterflies. On the massive passion vine planted on the garden's trellis, visitors can view all four stages of the life cycle of the Gulf Fritillary.

## **REFUGE WILDLIFE**

A variety of wildlife species occurs on the refuge, including a number of species federally listed as endangered, threatened or as species of concern. Two federally listed endangered and threatened species known to occur within the boundary of the refuge are the wood stork, which feed and roost on the refuge but do not nest, and the West Indian manatee, which occurs in waters adjacent to the refuge and are frequently sighted near Daws Island and in Port Royal Sound.

The refuge bird list contains over 250 species. The most popular and colorful is the painted bunting, a common summer resident on the island and in brushy habitat throughout the area. In fall and early winter, warblers are common among the live oaks and in the scrub/shrub habitat. Waterfowl, shorebirds, wading birds, raptors, and neotropical migratory birds are common on the refuge—Pinckney Island NWR is one of the best places in South Carolina to see breeding yellow-crowned night herons. Other species of wading birds breeding on the refuge include: snowy egret, cattle egret, tri-colored heron, little blue heron, and black-crowned night heron. These breeding herons are joined in summer by a few non-breeding wood storks.

A variety of reptiles, amphibians, fish, and mammals occurs on the refuge and in the waters in the immediate vicinity. Some of the more common snake species seen on the refuge include the cottonmouth, black racer, corn snake, and yellow and grey rat snake. Mammals common to the refuge include white-tailed deer, bobcat, raccoon, opossum, eastern gray squirrels, fox squirrels, river otter, and red fox.

## **PUBLIC USE / VISITOR SERVICES**

Pinckney Island NWR, adjacent to Hilton Head, South Carolina, is an island of habitat surrounded by a "sea of development." There are approximately 200,000 visitors to Pinckney Island NWR annually, the most of any of the seven refuges in the Complex. The island is used exclusively as a nature and forest preserve. Deed restrictions put in place when the Pinckney Island NWR was established limit the ability of the refuge to provide some visitor services. Studying, viewing, and photographing the island's wildlife and scenery are the most popular activities throughout the year. Visitor facilities at Pinckney Island NWR include informational kiosks, interpretive exhibit panels, parking area, and trails.

Public use opportunities on Pinckney Island NWR include: wildlife observation and photography; hiking/biking/trails; environmental education/interpretation; and hunting and fishing.

### Wildlife Observation and Photography

Studying, viewing, and photographing the island's wildlife and scenery are popular activities throughout the year. There are nine named trails, all originating at the parking area near the refuge entrance. There are 14 miles of trails open to hiking and bicycling; however, no motorized vehicles are allowed north of the parking area. Wildlife viewing is best during the spring and fall months when migrations are at their peak.

### Environmental Education and Interpretation

Requests for environmental education programs and interpretive tours for school, civic and conservation groups are handled on a case by case basis. These tours are generally given by refuge staff and/or trained refuge volunteers and therefore require a minimum of two weeks' notice.

Guided interpretive tours for the general public can be arranged through our special use permit holders. These tours are provided by private, commercial, or non-profit organizations that maintain a permit with the Service in order to conduct business on the refuge. Currently, there are three permit holders for Pinckney Island NWR who

offer guided interpretive tours: Coastal Discovery Museum, Disney's Hilton Head Island Resort (tours for their guests only), and Wilderness Southeast (based in Savannah, GA).

#### Hunting and Fishing

Annually, the refuge hosts a one-day deer hunt to ensure that population numbers remain in balance with the surrounding habitat. Applications for this hunt must be received at the SCRC headquarters office by August 31, after which time 80 permits are drawn. The refuge is closed to the general public on the day of this hunt which is typically held in early November.

Sport fishing on Pinckney Island NWR is permitted year-round in the estuarine waters adjacent to the refuge. However, freshwater fishing is not allowed. South Carolina saltwater fishing license is required.