

Selected Habitats of the Reserves

PINE SAVANNAS

With only 3 - 5% of the original acreage remaining, wet pine savannas are one of our most endangered ecosystems. These communities once extended along the coast from the western edge of Florida to Louisiana in a band approximately 62 miles wide. The Grand Bay Reserve and Weeks



Bay Reserve contain some of the best remaining examples of this habitat type along the northern Gulf of Mexico. Pine savannas are fire-maintained grasslands with scattered pines and shrubs and a sun-loving, species-rich ground cover. A layer of clay found below

the surface prevents the water from draining from these sites and results in wet, acidic soils that are of poor nutritional quality.

Although poor in soil quality, these wetland habitats support some of the highest diversities (as many as 40 different species per square meter) of grass, sedge and wildflower species ever described in North America. Pine savannas are home to a large number of carnivorous plants. These plants, which include pitcherplants, sundews, bladderworts and butterworts, are adapted to attract, capture and digest prey such as insects and other small animals. Also found in this habitat are beautiful orchids such as the Grass Pink and Ladies' Tresses.

Animals such as Raccoons, Gulf Fritillary Butterflies, Bluebirds, Blue Grosbeaks, Blue Darner Dragonflies, Red Foxes and Rainbow Snakes regularly visit or live in these habitats. Although not commonly found in the Grand Bay Reserve, the endangered Mississippi Sandhill Crane is the most notable inhabitant of the wet pine savannas of south Mississippi.



SALT AND BRACKISH MARSHES

The estuaries of the Reserves are dominated by the salt marsh community. Estuaries occur where freshwater from rivers and streams mixes with the saltwater of the sea to form brackish water. Divided into three major wetland zones based on minor differences in elevation, the salt marshes are influenced by the rise and fall of the tides.

Along the fringes of many of the Reserves' bayous (pronounced BY-you-s) is the narrowest zone called the low marsh. This zone is dominated by Smooth Cordgrass and is located where the brackish tidal waters reach every day. The tides regularly sweep into this zone, bringing with them small animals to feed in and among the vegetation. As the tides flush out of the area, they take with them tiny bits of food called detritus on which many important species of small coastal finfish and shellfish feed.

The mid-marsh is located above the mark of mean (average) high water, so it is not covered by water every day. Sandwiched between the low and high marsh, the mid-marsh zone (the largest salt marsh area) is dominated by Black Needlerush, Mississippi's and Alabama's most common salt marsh plant. Several stands of these plants are found throughout the Reserves and most are hundreds of acres in size. Scattered within the mid-marsh are extremely salty areas of sparse vegetation known as salt pannes. These salt pannes form in shallow depressions into which tidal waters occasionally flow and become trapped. When the trapped water evaporates, the salt is left behind. Plants and animals living in these salt pannes must be extremely salt and heat tolerant. Common plants found in

these salt pannes include Saltwort, Glasswort and Sea Lavender. Animals frequently found here include Fiddler Crabs, Common Buckeye Butterflies and White-tailed Deer that use these areas as salt licks.

Salt Meadow Cordgrass or Salt Marsh Hay is the most common indicator species for the highest zone, the high marsh. This zone is covered with water only during unusually high water events such as hurricanes. This wetland zone serves as an interface with the adjacent terrestrial habitats. Other species of plants found in this zone include Southern Bayberry (Wax Myrtle), Yaupon Holly and Sea Ox-eye, a salt-tolerant wildflower that resembles a yellow daisy.

Salt marshes provide nursery, feeding and shelter habitats for many coastal species of fish, shellfish and other animals, buffer the mainland from powerful storm surges, filter pollutants flowing off the adjacent land, and provide recreational opportunities for fishermen, hunters and birdwatchers. Diamondback Terrapins, Raccoons, American Alligators, Oyster Catchers, Brown and White Pelicans (migratory), and Clapper Rails are just a few of the animals that live here.

WOODLAND HABITATS

The majority of the woodland habitats located within the Reserves are dominated by Slash Pines and Wiregrass and are often referred to as wet pine flatwoods; however, there are a few habitats located on higher ridges or relic American Indian shell middens (refuse piles) that support upland (non-wetland) hardwood species such as the evergreen Live Oak. The wooded areas located close enough to the saltwater bayous and bays to be periodically impacted by saltwater flooding



or the salt spray are called maritime forests. The overstory of these maritime forests is often dominated by trees that are stunted and disfigured due to the harsh conditions under which they exist. High winds associated with tropical and winter storms may cause these trees to snap in half or to become twisted. Extended saltwater flooding such as that associated with storm surges from hurricanes may also kill many of the less salt-tolerant species.

During the early spring and fall months, these woodland habitats serve as critical “refueling” and resting stopover sites for birds migrating to and from Central and South America across the open water of the Gulf of Mexico. In the spring, it is not unusual to find Redstarts, Black and White Warblers, Wood Thrushes and other birds utilizing the Reserves’ woodlands as they pass through this area on their way to their nesting habitats in the north. The Oak Grove Birding Trail leads through one of the Grand Bay Reserve’s few accessible examples of a maritime oak forest.

FRESHWATER MARSHES

The freshwater marshes in the Reserves are either tidal or non-tidal depending on where they are located within the landscape. Most of these habitats are rarely, if ever, flooded by saltwater.

The vegetation in marshes is generally considered to be grasslike, although a few water-tolerant species of trees such as pond and bald cypress may be



found intermixed. A dominant freshwater marsh species in the Reserves is Sawgrass, which forms dense stands that provide habitat for nesting birds, alligators, frogs, otters, and snakes. Ospreys, fish-eating birds of prey, nest in trees or other tall structures on the edges of freshwater marshes.

Tidal freshwater marshes are found upstream from brackish waterways. The ebb and flow of the tide still move the water levels up and down in these streams, but there is very little movement of salt into these systems except during periods of extreme drought or tidal surge. Common plants found in these marshes include Arrowhead, Pickerelweed, Cattail and the submerged American Eelgrass (*Vallisneria americana*).

These freshwater marshes serve to filter polluted runoff from adjacent uplands, store floodwaters to prevent flooding elsewhere, recharge groundwater aquifers and provide nesting and over-wintering sites for recreationally important species of fish and waterfowl. Mammals such as Beavers, Muskrats and the invasive Nutrias also utilize these habitats throughout the year.

SWAMPS AND BOTTOMLAND HARDWOODS

Located throughout the Reserves are a few scattered swamps and bottomland hardwoods. These freshwater wetlands are characterized by the presence of standing water during part of the year and the presence of woody vegetation. It is the coastal swamp that many visitors to our area associate with the Deep South.

The most common trees found in these habitats include the Tupelo Gum and two species of cypress – Pond and Bald. These trees have special adaptations that allow them to live in standing water. Both have



what is called a buttress (swollen) base. Additionally, the cypress trees have “knees,” structures that arise from the ground and are thought to help the trees deal with the variable conditions that occur in wet soils.

Many coastal species of wildlife, such as waterfowl and warblers, utilize these habitats for water, food and protective cover. The swamps and bottomland hardwoods may serve as rookeries for egrets, herons and other colonial nesting species of birds. These wetlands also provide important breeding sites for many of our coastal species of amphibians and reptiles such as sirens (large, aquatic salamanders), frogs, toads, turtles and alligators.

ROADSIDE HABITAT

The strip of land located adjacent to the road combined with the adjacent ditches is considered roadside habitat. Although at first glance this habitat seems minimal, when all roadsides are added together, a significant amount of potential



wildlife habitat is found. These strips of land also play an important role in stabilizing the roadsides and filtering the pollutants carried in storm waters that flow off the roads.

If left unmowed, these roadsides will be used by many species of wildlife as corridors to move from one habitat to another. Roadsides serve as feeding, breeding (especially for toads, frogs and turtles) and sheltering areas for animals to hide in until the “coast is clear” to cross the road. Many species of egrets and herons are often found feeding in these roadside ditches. In the winter large flocks of American Robins (that have migrated here from the North) forage here.

Beautiful species of wildflowers will grow and bloom here if given the chance to reach maturity. Some of the Reserves’ distinctive orchids sprout up in these areas, along with the many species of wild, yellow sunflowers, Yellow Colic Root and bright Orange Candy Root, providing the passerby with a seemingly unending pathway of color.