

# Barrier Island Ecosystem Guide for Fripp Island

## Barrier Islands

### What is a Barrier Island?

Fripp Island is a Barrier Island, one of many running parallel to the east coast of the United States. These Islands are named for their purpose in this coastal environment as barriers for the mainland to block the strong winds, waves and possibly hurricanes that may cause extreme damage. They are formed south of where rivers and inlets carry large amounts of sand into the ocean. The islands are built along a shoreline by a combination of wind and waves from the southeast that dominate our summer weather patterns. There are constant dynamic forces of littoral currents and wind patterns that create a shifting and ever changing beach environment.

On Fripp Island we are fortunate to be a part of a wonderful and diverse coastal ecosystem with a number of very different Habitats, each with a very unique and varied plant and animal makeup. Our Island supports three distinct habitats consisting of a beach dune system, a Maritime Forest and an extensive tidal salt marsh.



## The Beach Habitat



### What is the Beach?

The beach consists of a sandy shoreline, with a primary and secondary dune system. Only the hardiest, most salt tolerant plants can withstand the persistent wind, waves and salt spray. These plants play a key role in building and stabilizing the fragile dunes.

### Why is Fripp's Beach Important?

This ecosystem is the first of three unique habitats to form creating the potential for a new barrier island. The beach and dunes also play a critical role by providing nesting sites for gulls, terns, and shore birds, as well as resting areas for large numbers of migrating birds.

## Maritime Forest Habitat



### What Is a Maritime Forest?

The Fripp Island Audubon Trail's Maritime Forest is a unique association of plants and animals which grow and live in the woodlands by the sea. The unique plants and trees have adapted to a life in sandy soil, dune-swale topography and strong breezes laden with salt spray and sand.

### How Did Fripp's Forest Grow?

The forest has a tall canopy of slash pine, live oak, and magnolia trees. Branches interlock to form a dense green blanket allowing little light to the plants below. Big leaf palms and red bay trees grow beneath the lower limbs and form an understory along with yaupon Holly and other shrubs. Hardy shrubs, palms and dwarf oaks guard the salt marsh boarders.

### Why is the Maritime Forest Important?

This unique ever-changing landscape and habitat offers a complete environment to many bird species and animals that live permanently in the forest. It provides food, nesting sites, water and cover. The diversity of wildlife along the trail can be enjoyed and appreciated throughout the year as migratory song birds visit the island.

## Salt Marsh Habitat



### What is the Salt Marsh?

The salt marsh, one of the most productive Habitats in the world, is a transitional area between land and water, occurring along the intertidal shore of estuaries and sounds. It is very important to Fripp Island and other coastal barrier islands because it serves as a nursery for many animal species. One hundred percent of the animal life on Fripp Island benefit from the salt marsh because it is the basis of the ocean food web.

### How does a Salt Marsh function?

Smooth cordgrass (*Spartina alterniflora*) dominates the regular flooded low marsh and is the most abundant salt marsh plant in S.C. It is responsible for much of the marsh's productivity. The marsh grass is the single most important component of the estuarine salt marsh environment because as it dies back in the fall, it enters a process of decomposition which produces an end product called detritus. Detritus is also called Nature's Soup because it is a nourishment and energy source for all salt marsh organisms.

### Why is the Salt Marsh Important?

The Salt marshes breathe life with each flood of the high tide and the drain of the low tide. Biologists estimate that salt marshes and their estuary watersheds produce five to ten tons of organic matter per acre annually, compared to one and a half to five tons per acre in the most fertile agriculture soil. One acre alone of cordgrass can support one million fiddler crabs.

### Salt Marsh Birds and Animals

More than fifty (50) insect species have been recorded in Southeast salt marshes, along with an assortment of marine worms, snails, clams and mussels. Marsh Wren and Clapper Rails are year-round residents building nests in the marsh vegetation. The Diamondback Terrapin is one of the few reptiles who inhabit the marsh year-round.

The salt marsh provides the many species of plankton and invertebrates that mature in the mud, grasses, and streams of the coastal marshes and are the foundation of the marine food chain. It also acts as a filter to remove sediments and toxins from the water as the tide flows twice daily.