



Lyn French

## What are salt marshes?

Salt marshes are grassy coastal wetlands rich in marine life. They are also called tidal marshes because they occur in the zone between low and high tides. Salt-marsh plants cannot grow where waves are strong but thrive along low-energy coasts. They also occur in estuaries, where fresh water from rivers mixes with sea water, usually behind barrier islands or in bays.

A distinctive feature of salt marshes is the lack of trees. Salt marshes are composed of a variety of plants, mainly rushes, sedges, and grasses. Florida's dominant salt-marsh species are needle rush (*Juncus roemerianus*), the grayish-green, pointed rush occurring where tides reach higher levels; and smooth cordgrass (*Spartina alterniflora*) found in lower areas that are inundated daily. Other locally abundant species include succulents such as saltwort (*Batis*), glassworts (*Salicornia*), and sea-purselane (*Sesuvium*); sedges such as saw-grass (*Cladium*) and fringe-rush (*Fimbristylis*); and other grasses such as marsh-hay (*Spartina patens*), key grass (*Monanthochloë*), and salt jointgrass (*Paspalum vaginatum*).



Needle rush  
*Juncus roemerianus*

Giant leather fern (*Acrostichum*) is also locally abundant.

Salt marshes are important for many reasons. Hidden within the tangle of salt-marsh plants are animals in various stages of life. Animals hide from predators in marsh vegetation because the shallow, brackish area physically excludes larger fish. Many of Florida's popular marine-fisheries species spend the early parts of their lives protected in salt marshes.

Young fish often have a varied diet, foraging for food in the mud of the marsh bottom, on the plants themselves, and on smaller organisms that dwell in the marsh system. After salt-marsh plants die, they become detritus, a product of decomposition by microorganisms. Detritus is food for many small animals. Tidal waters move up into the marsh and then retreat, carrying and distributing detritus throughout the estuary.



Smooth cordgrass  
*Spartina alterniflora*

## Florida's salt marshes



Saw-grass  
*Cladium jamaicense*

Salt marshes form along the margins of many north Florida estuaries. Gulf-coast salt marshes occur along low-energy shorelines, at the mouths of rivers, and in bays, bayous, and sounds. The panhandle region west of Apalachicola Bay contains estuaries with few salt marshes. From Apalachicola Bay south to Tampa Bay, however, salt marshes are the main type of coastal vegetation. The most continuous saltmarsh acreage in Florida lies in the coastal area known as "The Big Bend," which extends from Apalachicola Bay to Cedar Key. South of Cedar Key, salt marshes contain an increasing proportion of mangroves, which are south Florida's dominant coastal vegetation. On the Atlantic coast, salt marshes occur from Daytona Beach northward. Nevertheless, salt-marsh plants can still

be found in fringes throughout south Florida.

Salt marshes are often considered—incorrectly—to have little value. In addition to providing nursery areas for fish, shellfish, and crustaceans, salt-marsh plants have extensive root systems that enable them to withstand storm surges and limit damage to uplands. Salt marshes also serve as filters. Tidal creeks meander through the marshes, transporting nutrients and pollutants from uplands development. Salt marshes absorb, or trap, some of these pollutants, reducing the amount that enters estuary waters. Salt marshes also trap sediments, thereby improving water quality.

## Salt marsh losses in Florida



Marsh-hay  
*Spartina patens*

Salt marshes have been drained, filled, or dredged to provide land for development or deep channels for boats. In Florida, at least 60,000 acres, or 8% of estuarine habitats, including salt marshes, have been lost to permitted dredge-and-fill activities.

Scientists at the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute are using

Geographic Information Systems to study changes in Florida's coastal habitats. Changes can be evaluated by comparing digitized aerial photographs of the coast from different years. The changes often reflect a net loss of fisheries habitats.

Most salt-marsh loss has occurred in Florida's five northeast counties, which contain 11% of the state's total salt-marsh acreage. Nassau County suffered its greatest loss when the Intracoastal Waterway was dredged. Duval County has lost even more as a result of human activity. Analysis of 3.5 miles on either side of St. Johns Inlet and



Salt jointgrass  
*Paspalum vaginatum*



Key grass  
*Monanthochlœ littoralis*

10 miles up the St. Johns River showed a 36% loss of marsh habitat, principally because of dredge-and-fill activities since 1943. In Palm Beach County, Lake Worth in the Indian River Lagoon lost 51% of its salt-marsh acreage between 1944 and 1982 because a network of canals draining low-lying uplands diverted the flow of fresh water away from salt marshes.

In southwest Florida, both salt marshes and mangroves occur along the shores of estuaries. Since 1940, Tampa Bay has been one of the fastest-growing metropolitan areas in Florida. Ship-channel dredging and port construction have brought Tampa Bay the economic benefits of being one of the largest ports in the nation, but considerable environmental damage has accompanied this growth. Tampa Bay has lost more than 40% of its original mangrove and salt-marsh acreage over the past 100 years. Four types of dredg-

ing have damaged Tampa Bay habitats: channel deepening, maintenance dredging, shell dredging, and land-fill dredging.

Estuaries and their salt marshes provide habitats for at least 75% of Florida's recreational and commercial fishes, shellfish, and crustaceans. The elimination and degradation of Florida salt marshes harm fishery resources. Many of Florida's marine fisheries will decline and may disappear without protection and restoration of coastal wetlands.

Salt marshes are a part of our state heritage. It is up to us to ensure them a place in Florida's future—your future.

**State regulations have been enacted to protect Florida's salt marshes and other coastal communities. Specifically, the Warren B. Henderson Wetlands Act of 1984 established clear guidelines for defining wetlands under state jurisdiction. All dredging and filling activities in state waters require permits unless specifically exempted. Local laws vary, so be sure to check with officials in your area before taking any action.**



A high marsh of needle rush, *Juncus roemerianus*, with brown-fringed clusters of giant leather fern, *Acrostichum aureum*.

For further information on salt-marsh plants, see *Aquatic and Wetland Plants of the Southeastern United States: Monocotyledons*, by R. K. Godfrey and J. W. Wooten, published by the University of Georgia Press, Athens, ©1979. Their illustrations of saw-grass and key grass are reproduced in this publication by permission of the University of Georgia Press.

#### ON THE COVER

**Background**—*Belying its well-deserved name, a needle-rush (Juncus) marsh looks velvet-soft when seen from afar.*

**Insets**—*Perennial glasswort, Salicornia virginica (top), crackles like glass breaking when stepped on. Close view of Juncus.*

*Aerial and glasswort photos: Paul Carlson. Juncus inset: Lyn French.*

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