

What are seagrasses?

Seagrasses are grass-like flowering plants that live completely submerged in marine and estuarine waters. Although seagrasses occur throughout the coastal areas of Florida, they are most abundant in Florida Bay and from Tarpon Springs northward to Apalachee Bay in the Gulf. Seagrasses occur in protected bays and lagoons and also in deeper waters along the continental shelf in the Gulf of Mexico. The depth at which seagrasses are found is limited by water clarity because some species require higher levels of light. However, some species tolerate lower light levels than others and can grow at greater depths.

Florida's approximately 2,000,000 acres of seagrasses perform many significant functions:

- they help maintain water clarity by trapping fine sediments and particles with their leaves;
- they stabilize the bottom with their roots and rhizomes;
- they provide shelter for fishes, crustaceans, and shellfish; and
- they and the organisms that grow on them are food for many marine animals and water birds.

The canopy of seagrass leaves protects young marine animals from larger predators. Some animals, such as manatees and sea turtles, eat seagrass blades. Other animals derive nutrition from eating algae and small animals that live upon seagrass leaves. These colonizing organisms provide an additional link in the marine food web. Seagrass-based detritus formed by the microbial breakdown of leaves and roots is also an important food source.



Widgeon-grass, *Ruppia maritima*



Shoal-grass, *Halodule wrightii*

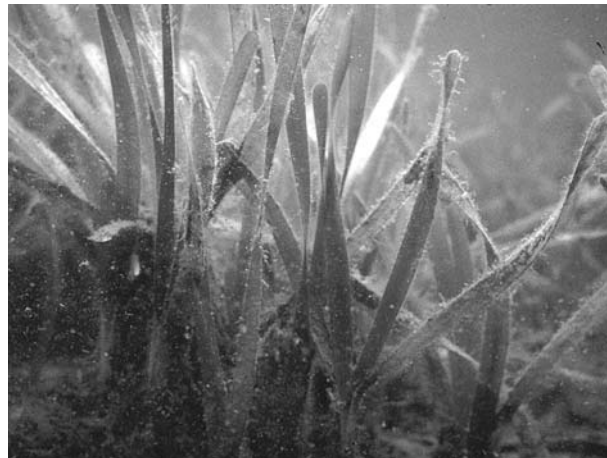
Florida's seagrasses

Although approximately 52 species of seagrasses exist worldwide, only seven species are found in Florida's marine waters. Six of these are widespread in Florida and extend beyond its borders.

Widgeon-grass, *Ruppia maritima*, grows in both fresh and salt water and is widely distributed throughout Florida's estuaries in less saline areas.

Shoal-grass, *Halodule wrightii*, is an early colonizer of vegetated areas and usually grows in water too shallow for other species except Widgeon-grass.

Turtle-grass, *Thalassia testudinum*, the largest of the Florida seagrasses, has deeper root structures than any of the other seagrasses.



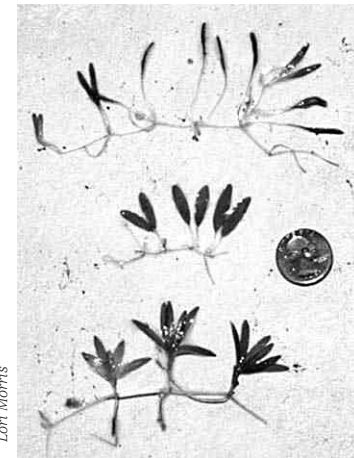
Turtle-grass, *Thalassia testudinum*



Manatee-grass, *Syringodium filiforme*

Manatee-grass, *Syringodium filiforme*, is easily recognizable because its leaves are cylindrical instead of ribbon-like and flat like many other seagrass species.

The species of *Halophila* found in Florida are **Star-grass, *Halophila engelmannii***; **Paddle-grass, *Halophila decipiens***; and **Johnson's Seagrass, *Halophila johnsonii***. These are smaller, more fragile seagrasses. Only limited information about them exists, although surveys are underway to define their ecological roles. Although Johnson's Seagrass grows only in the Indian River Lagoon and is listed as threatened, it may not be distinct from *Halophila ovalis*, a species commonly found in other parts of the world.



Johnson's seagrass
Halophila johnsonii

Paddle-grass
Halophila decipiens

Star-grass
Halophila engelmannii

Three species of *Halophila*



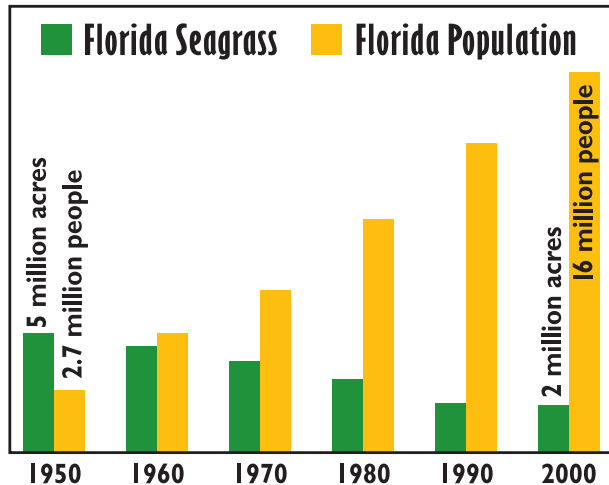
Aerial view of a seagrass bed in the Florida Keys that has been severely scarred by boat propellers.

Seagrass losses in Florida

Seagrasses are a valuable and necessary part of Florida's marine environment, but they are disappearing at an alarming rate. Dredge-and-fill projects and degraded water quality are mainly responsible for their precipitous decline. Propeller scarring also damages seagrasses.

Scientists of the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute are using Geographic Information System technology to study changes in Florida's coastal fisheries habitats, of which seagrass beds are a major component. By analyzing aerial photographs taken over time, the scientists are able to evaluate seagrass gains and losses more effectively.

Along the southwest Florida coast, two major bay systems have similar physical features but dramatically different histories. The Tampa Bay system, which has been highly developed and urbanized, has lost 81% of



its seagrass acreage over the past 100 years. Charlotte Harbor, on the other hand, is a less developed estuary. A 29% decrease in its seagrass acreage was documented by comparing aerial photographs from 1944 to 1982.

Several sites on the east Florida coast have been analyzed. Among them are Ponce Inlet, just south of Daytona Beach, and the Indian River Lagoon (IRL) from Sebastian Inlet south to St. Lucie Inlet. The Ponce Inlet site has lost 100% of its seagrass, principally from dredge-and-fill activities for development of the Intracoastal Waterway. In a seven-mile stretch of estuary surrounding Sebastian Inlet, seagrasses have declined 38% since 1951. Another IRL study site north of Fort Pierce has lost 25% of its seagrasses since 1958.

The studies that document fisheries habitat alterations in Florida are proving helpful to local and state officials. They are increasing public awareness about the problem of fisheries habitat losses and are providing incentives to address this serious problem in Florida's coastal zone.

ON THE COVER

Background—*Turtle-grass*, *Thalassia testudinum*.

Insets—*Spotted seatrout* (*Cynoscion nebulosus*) depend on seagrass habitat throughout their lives. A *manatee* (*Trichechus manatus*) dines on seagrass. *Bay scallops* (*Argopecten irradians*) spend their lives in seagrass beds.

Seagrass photo: Ron Phillips. Seatrout photo: Mike Knepper. Manatee photo: Jim Reid

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