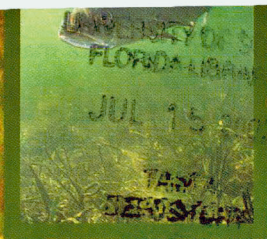


The
Underwater World of Florida's
SEAGRASSES



What are seagrasses?

Seagrasses are grass-like flowering plants that live underwater. Although seagrasses occur throughout the coastal areas of the state, 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 places along the continental shelf in the Gulf of Mexico. The depth at which seagrasses are found is limited by water clarity because they require light.

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 can stabilize the bottom with their roots and rhizomes in much the same way that land grasses slow soil erosion;
- they provide shelter for many fishes, crustaceans, and shellfish; and
- they and the organisms that grow on them are food for many marine animals and water birds.

The "forest" of seagrass leaves protects young marine animals from larger, open-water 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.



Ron Phillips

Widgeon-grass, *Ruppia maritima*



Ron Phillips

Shoal-grass, *Halodule wrightii*

Florida's seagrasses

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

Ruppia maritima, or **widgeon-grass**, grows in both fresh and salt water and is widely distributed throughout Florida's estuaries in the less saline areas. It has umbrella-like clusters of four to six fruits.

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



Ron Phillips

Turtle-grass, *Thalassia testudinum*



Manatee-grass, *Syringodium filiforme*

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

Manatee-grass, *Syringodium filiforme*, is easily recognizable because its leaves are cylindrical.

The species of *Halophila* 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. Johnson's seagrass grows only in the Indian River Lagoon and is listed as threatened.

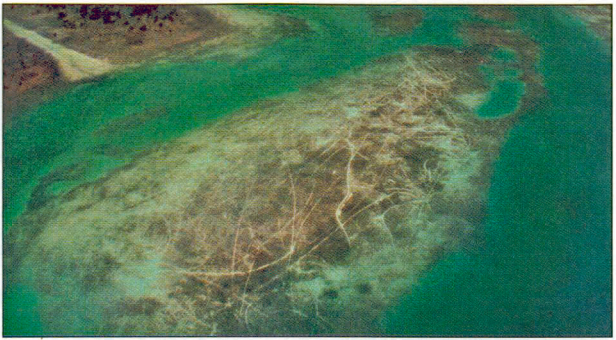


Johnson's seagrass
Halophila johnsonii

Paddle-grass
Halophila decipiens

Star-grass
Halophila engelmannii

Three species of *Halophila*



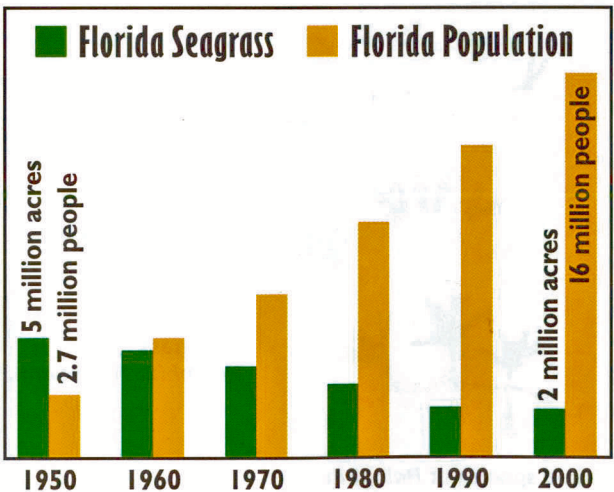
Aerial view of a seagrass bed in the Florida Keys that has been severely scarred by boat propellers.

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 Fish and Wildlife Conservation Commission's Florida Marine Research Institute are using GIS 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 habitat change.

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 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 Indian River 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 latirostris*) dines on manatee grass, *Syringodium filiforme*. Bay scallops (*Argopecten irradians*) spend their lives in seagrass beds.

Seagrass photo: Ron Phillips. Seatrout photo: Mike Knepper.

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