

LOSS OF SEAGRASSES



To countless marine creatures, seagrass beds are a vital source of food and shelter. Seagrasses also contribute to water quality due to the stabilization of bottom sediments.

Five types of seagrass are found within the Sarasota Bay system: *Thalassia testudinum* (turtle grass), *Syringodium filiforme* (manatee grass), *Halodule wrightii* (shoal grass), *Ruppia maritima* (widgeon grass) and *Halophila engelmannii* (star grass).

Based on bathymetry from the pre-development era as compared to today, (Map 1) it is estimated that seagrass area has been reduced due to destruction from dredge-and-fill activities and deteriorating water quality. Direct destruction takes the form of filling of the bays for coastal development, dredging of canals, creation of the Gulf Intracoastal Waterway or boat propeller scarring. Of the roughly 10 square miles of seagrass found today in the area of Sarasota Bay stretching from Cortez Bridge to Siesta Key Bridge, three square miles have been identified as suffering from light scarring, 0.8 mile from moderate scarring, and .5 mile from severe scarring (Map 2).

Indirect damage to seagrasses comes through poor water quality in the bays, mostly due to increased coastal development. Losses of upland vegetation alter plants' capacity to filter sediments and pollutants from reaching the bay system. Coastal development also increases the amount of nutrients that reach the bays. For example, Sarasota Bay has lost approximately 39 percent of its mangroves between the 1880s and 1990.

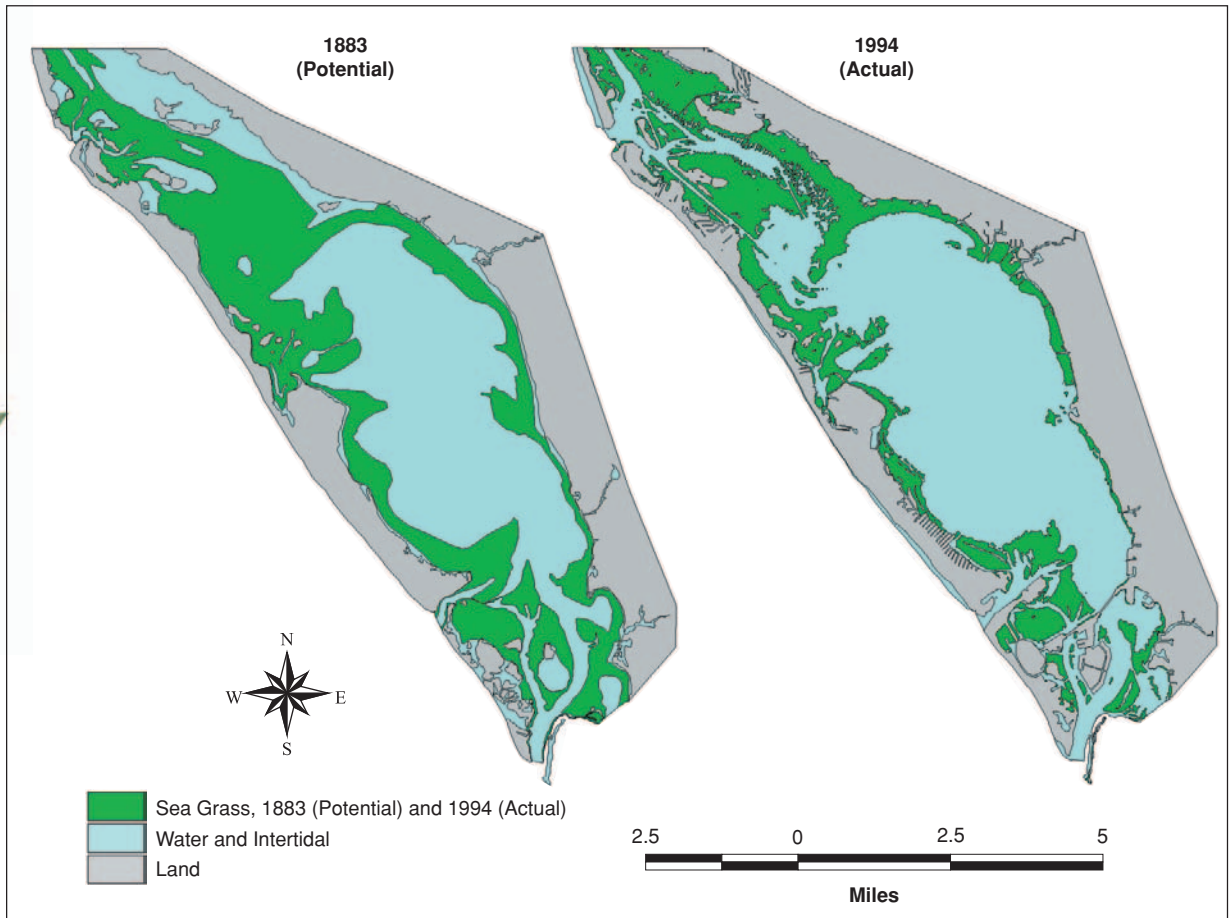
Investigation of potential seagrass areas in the predevelopment era (1893) and non-existing seagrass water areas today indicates a possible net loss of more than 22 percent of seagrass beds (Map 3). Much of the change is in the intermediate water depth areas of Big Sarasota Bay area, such as north of Longbar Point and adjacent to Bird Key (Map 3), where seagrass beds could have thrived due to better water quality.

Studies to determine if better marking of seagrass meadows and increased boater education on the importance of

seagrasses would help protect the resource have produced mixed results. In the Cockroach Bay Aquatic Preserve and Fort DeSoto Park areas, plans to protect seagrass beds — including increased boater education on the importance of the resource, better channel marking, limiting powerboat access to more sensitive marine areas and enhanced enforcement of existing laws — were put into effect. Unfortunately, propeller scarring continued to increase. Clear demarcation of seagrass beds reduced accidental grounding by boaters unfamiliar with the areas, but better marking tended to escalate recreational fishing on the grass beds and increased damage to seagrasses. In Sarasota Bay, improved marking of the ICW and connectors is being used as a waterway management technique to protect seagrasses.

The Sarasota Bay National Estuary Program has determined that nitrogen pollution has been reduced by 30 percent baywide, resulting in a 20-percent increase in habitat coverage. This increase has occurred due to improved wastewater treatment. These kinds of improvements, for example, to the Manatee County regional wastewater treatment plant near Tidy Island, have virtually eliminated runoff into the bays and increased seagrass bed coverage there. In Big Sarasota Bay, improvements to City of Sarasota wastewater treatment practices have decreased nitrogen discharges into the bay by about 95 percent. Improvements in Sarasota mean that more than 46 percent of all wastewater is reclaimed, rather than being dumped in the bay. And, as a result of water quality improvement such as these, the Bay since 1988, has been able to support 310 million more shrimp, 68 million more crabs and 100 million more fish. Other management efforts are also restoring wetland habitats and creating artificial reefs to replace lost habitats from dredge-and-fill activities.

Seagrass recovery in Sarasota Bay: There has been an additional seven percent more shrimp, crab and fin fish in Sarasota Bay; 614 acres of seagrasses have returned since 1988. Ultimately, more seagrasses means a healthier, cleaner bay; a better bay means enhanced fisheries. Estuaries are among the most productive of all the earth's systems: more than 80 percent of all fish and shellfish use estuaries either as a primary habitat or as spawning or nursery grounds.



Map 1.
Sarasota Bay:
Historical
Perspective
on Potential
Seagrass Areas
Versus Existing
Seagrasses

References

1. Government Charts (Compilation [Smooth] Sheet)

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2. Government Digital Data Sources

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3. Published Reports

Folitt, R., and J. Morris, 1992, Beds, Boats, and Buoys: A Study in Protecting Seagrass Beds from Motorboat Propeller Damage. Environmental Studies Program, New College of University of South Florida. Prepared as an Early Action Demonstration Project for the Sarasota Bay Project, National Estuary Program.

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