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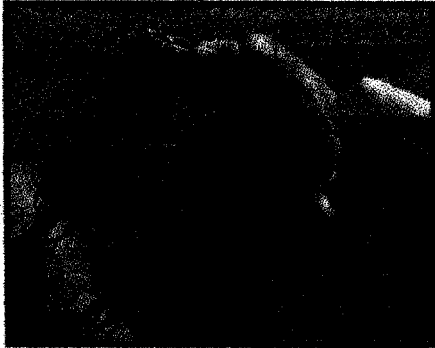


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A Seagrass Success in Tampa Bay

Grassroots of a different kind.



Nursery-grown product from Seagrass Recovery, ready for transplanting.

A recent Fish and Wildlife Research Institute study indicates that Florida has lost about 300,000 acres of valuable seagrass beds since 1995—or slightly more than 10 percent in 10 years. Forces plaguing those delicate grasses on your favorite redfish and bonefish flats include poor water quality, dredging and filling projects, hurricanes, and irresponsible boating. In many areas, government mismanagement of waterways for flood control and agricultural uses is by far the worst offender.

"Seagrass isn't really sexy," says Beau Williams, operations manager for Tampa-based Seagrass Recovery, the private firm that more or less invented the business of seagrass regeneration. "At least," Williams added, "it's not as popular as coral, but seagrass is at least as important to our fisheries as coral."

Back in '95, a Ruskin sod farmer named Jim Anderson started Seagrass Recovery after officials threatened closures in his home waters of Cockroach Bay due to extensive damage to the bay's seagrass beds. Anderson fought the closure, organizing a group of friends to go out and hand plant the damaged areas. Since then, he's switched his vocation from farming to seagrass regeneration and invented ingenious tools and methods that combine his mechanical knack with his farming knowledge to get the job done.

Among Seagrass Recovery's arsenal are nutrient-rich, bio-degradable sediment tubes that can be thrown into prop scars and gouges, providing a founda-

tion for seagrass regrowth. A floating machine called "G.U.T.S.," for Giga Unit Transplant System, can pick up and relocate 4-by-5-foot tracts of seagrass before dredging or construction projects. The firm grows seagrass in its own nurseries—on land—and the "Aquatic Fertilizer" injects shallow seagrass beds with organic nutrient supplement to stimulate growth. There's also "JEB," or Jim's Environmental Boat, a floating seagrass planting machine.

"If you have a road with potholes, you don't close it down, you fix it," Williams says. "And we've got the proprietary technology to do just that. I can tell you that there's a direct link between the quality of our seagrass beds and the quality of our fishing in this state."

Seagrass beds are not only feeding grounds for inshore gamefish, they are also vital nursery habitat for both inshore and offshore species; stabilizers in what would otherwise be shifting sand, mucking up water; food for turtles and manatees; habitat for shrimp, crab, pinfish and other favorite baits.

Most seagrasses are slow growers. Halodule, or shoal grass, moves into a territory quickly, but *Thalassia*, or turtle grass—the most common seagrass in Florida—is a slow grower, what's called a grandfather or climax species, because its establishment takes so long and marks the full development of the seagrass cycle in that ecosystem. Once

damaged, a *Thalassia* bed takes from 7 to 10 years to recover, if it does at all. Seagrass Recovery claims its techniques can cut down that time by two-thirds.

In 2003, G.U.T.S. moved 1,500 square feet of seagrass prior to dredging to allow bigger cutters into the port at St. Petersburg Coast Guard Station. Three years after a Longboat Key project in 2003 to transplant grasses before maintenance dredging, almost 75 percent of the grasses G.U.T.S. transplanted had survived.

"The ones that survived really thrived," said Dr. Penny Hall, research administrator for the Fish and Wildlife Research Institute. Hall has studied Seagrass Recovery's techniques for seven years and is now preparing to publish scientific papers about the results of the projects.

In that Longboat Key project, G.U.T.S. transplanted 48.6 square meters of grass, both *Halodule* and *Thalassia*. After three years, those had spread to more than 3,000 square meters, mostly *Halodule*, the fast grower.

"The sediment tubes are my favorite technology of theirs," said Hall. "They're a really good tool to restore large grounding sites. We had a project in the Keys, filling a big, eroded prop scar with 1,000 sediment tubes and planting *Halodule*, and those grasses came back wonderfully. This summer, we have six more projects with them to restore prop damage in the Keys, and we'll be studying the results."

Seagrass Recovery has ongoing projects



The Giga Unit Transplant System can relocate 4- by 5-foot tracts of seagrass.

"The tubes have proven very effective at stabilizing prop scars."

—Kent Smith, FWC



Sediment-filled tubes fill prop scars to serve as a foundation for seagrass growth.

in conjunction with FWC in St. Andrews Bay, and has also worked in Maryland and Texas. Recently, Williams has been in discussions with officials in Puerto Rico to work there.

"There's no doubt that their techniques work," says Kent Smith, a biological administrator in FWC's Habitat & Species Conservation Department. "Their sediment tubes have been proven very effective at stabilizing prop scars and encouraging regrowth."

While management agencies try to improve water quality, and anglers and conservationists fight for more improvements across the state, Williams believes that his company's techniques could rebuild seagrass habitats where water quality has significantly improved.

Mark Perry, Executive Director of the Florida Oceanographic Society in Stuart, said that he'd support the use of "any

techniques that had been proven to assist the recovery of seagrass, if they are compatible with current conditions in the ecosystem. If seagrass has disappeared, you first have to ask what has stopped its growth, and whether or not the grass can be sustained there now.

"In our area," Perry continued, "we have about 700 acres of seagrass inside the south end of the Indian River Lagoon, just inside St. Lucie Inlet. Fresh-water discharges from Lake Okeechobee lower the salinity levels of these waters so much, unfortunately, that they cause serious damage to these grasses. I'd like to see a comprehensive appraisal of all the survey data collected recently for the condition of these beds, and if there has been significant loss, I'd support any means to regenerate them."

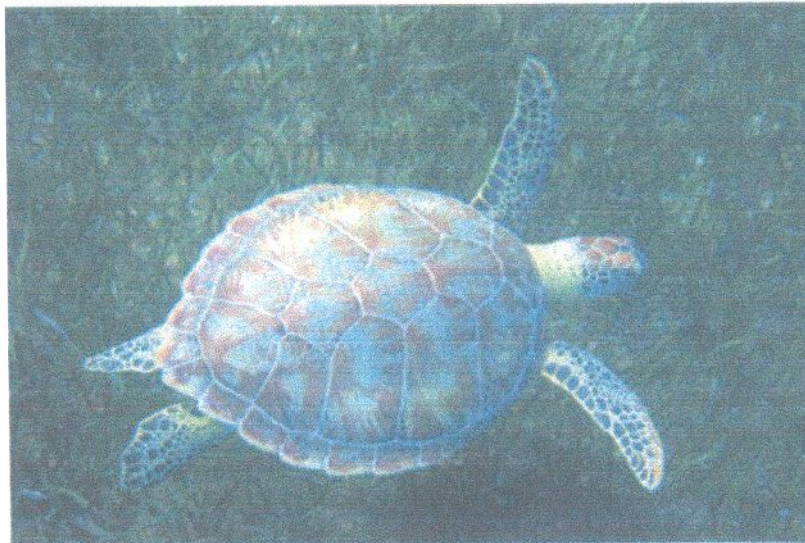
Sources I've spoken with would agree that the state's current method of re-

couping costs for boater damages to seagrass beds, involving damage assessment, insurance claims and sometimes litigation, is slow, costly and ineffective. Two bills considered by the Florida legislature this past session would mandate statewide fines of increasing severity per number of infractions by the same boater. (In the Keys, where fines are levied by the Florida Keys National Marine Sanctuary, penalties for an average run-around can cost boaters thousands of dollars.) The two bills are H.B. 1069, sponsored by Rep. Will Kendrick (R-District 10) and S.B. 0548, sponsored by Sen. Michael Bennett (R-District 21). The latter would institute civil penalties for inflicting damage to seagrass.

"They're not excessive fines," says Kent Smith of FWC, "but they are a way to keep in the back of boaters' minds that there are consequences for damaging the public resource of seagrass. The bill has been watered down so that the fines would apply only in aquatic preserves, roughly 30 percent of state waters. At least it's a good beginning."

Another bit of legislation, Senate Bill 2178, also sponsored by Sen. Bennett, proposed that monies raised by those fines would be devoted to seagrass regeneration. The bill also proposed to put into place a rapid response system for the assessment of fines and repair of seagrass.

—David Conway



Seagrass provides the foundation for a variety of sea life



The Grass Isn't Always Greener

With the summer boating season upon us, now's a good time to take a look at those waving fields of seagrass near our marinas and on our favorite redfish and permit flats and remind ourselves how they sustain us and the fish that we find on them.

Very simple boating practices can help protect seagrass. In shallow water, motor slowly and raise engines. Better yet, use a pushpole or a trolling motor to cross flats; you'll increase your chances at fish, too. Don't run flats, and resist the temptation to anchor in seagrass beds; instead, tie-off to a staked pushpole or use a Power-Pole. If you do run aground, don't power out and do more damage. Try to get out of the boat and push off, or wait for the rising tide to help lift you out.

—David Conway



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A growing selection of seagrass solutions.

Seagrass Recovery LLC has a vast assortment of tools on hand to effectively restore damaged beds. The success of our company's innovative techniques has been scientifically documented and widely recognized throughout the industry. What's more, because many of our solutions incorporate patented technologies with one-of-a-kind functionality, Seagrass Recovery LLC is the only place that can offer all of these unique options:

- Sediment Tubes, biodegradable tubes filled with sediment, can be used to restore seagrass beds damaged by propeller scars and boat groundings by returning the bottom to its original grade.
- The Sediment Transport Vessel (STV) transports and places sediment into trenches or blowouts while minimizing water-turbidity effects.
- The GigaUnit Transplant System (GUTS) is a boat that can transplant 20 square-foot sections of seagrass and associated mud from one area to another.
- JEB, also known as Jim's Environmental Boat, is used to plant bare root or pre-rooted seagrass units in shallow water. JEB plants a unit every 2.5 seconds—or an acre in two days—without having divers or people in the water.
- The Aquatic Fertigator is a mobile vessel used to inject shallow seagrass and damaged areas with a proprietary formulation of natural products that stimulate new growth.
- Our Seagrass Nursery serves as a ready source of planting stock.

S E A G R A S S R E C O V E R Y