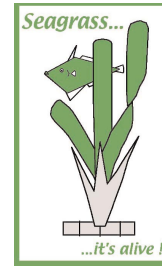


Seagrass and the Economy

- Many commercial fishery species rely on seagrass habitat during some part of their life cycles including pink shrimp, lobster, red fish, and stone crab.
- Seagrass habitat helps to support a thriving, multi-million dollar recreational fishery including flats fishing for bonefish and tarpon.
- The estimated total value for Monroe County in 2007 for six seagrass dependent species added up to about \$22.5 million.
- More than 70% of Florida's recreational and commercial fish, crustaceans, and shellfish spend part of their lives in shallow water estuaries.
- The value in 2007 of the stone crab fishery in Monroe County was estimated at \$4.5 million.
- The value of the 2007 spiny lobster fishery in Monroe County was \$14.2 million.
- Yellowtail and gray snapper, brought in \$2.2 million in 2007 to Monroe County.
- Over 30 species of tropical invertebrates dependent on seagrass habitats are collected in the Florida Keys for the marine collection industry yearly.
- Over \$200 million is spent yearly in Monroe County in the viewing of nature and wildlife.

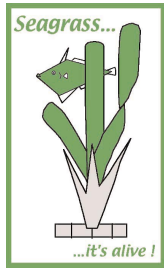


Boating Skills

You have probably noticed, either from the air or from the bridges, all the zig-zag patterns on seagrass flats. These are prop dredge scars caused by inadvertent or careless boating practices. Damage to seagrass flats from boats is an increasing problem in the Keys.

Please pay attention to the following tips for boating in near shore habitats.

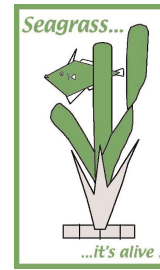
- Familiarize yourself with the local waters where you plan to boat.
- Always use up-to-date nautical charts of the area.
- Use marked channels where they exist and stay in deep water.
- Remember this jingle..
"Brown, Brown Run Aground; White, White You Just Might;
Blue, Blue Sail on Through; Green, Green Nice and Clean"
Shallow water appears very dark to the observer while deeper water appears blue or green. Sand covered bottoms appear white and may or may not be deep enough for your vessel to navigate.
- When in doubt about the depth, slow down and idle. Make sure the bow of the boat is down and the motor is trimmed or tilted up.
- Keep track of the tides. The greatest range of tides (shallowest and deepest water) occurs during a full-moon and new-moon. Use extra caution when boating on a low tide.
- If you do run into a seagrass flat, you will be leaving a sediment trail behind your boat, making the water murky and probably cutting seagrass roots. Stop immediately and tilt your engine. Pole or push the boat into deeper water.
- Prop-dredging and seagrass scarring is an unnecessary impact to the natural resources that you can control. **Study your charts. Read the waters. Know your depth and draft.**



Your Connection to Seagrass Habitats

- Monroe County has 1,452,800 acres of seagrass.
- Monroe County has the largest amount of damage to seagrasses from boat propellers of any county in Florida.
- Seagrasses, which are a valuable part of Florida's marine environment, are disappearing at an alarming rate.
- Threats to seagrasses include dredge and fill projects, degraded water quality, and physical impacts by boat propellers.
- Recent biological surveys show that seagrasses are being destroyed at an alarming rate by careless boating activity in the nearshore waters of the Florida Keys.
- Seagrass destruction is a serious problem and has become more intense and widespread near shoreline communities and popular boat access areas.
- Damaging seagrass with your boat's propeller will fragment the grass bed and severely restrict the movement of marine wildlife in needed habitat. This can create barren areas where fish and other species once flourished.
- Boats are becoming more numerous, larger, and more powerful, compound ing the problem.
- Seagrass loss has a direct, long-term economic impact on commercial and recreational interests in the Florida Keys.
- Damage to seagrasses compound with each grounding or prop dredging incident.
- Sediment plumes behind boats are a sign of an inexperienced or careless boater...Look over your shoulder and size up your boating skills.
- The damage caused by a boat propeller in 10 seconds can take 10 years to heal.
- The destruction of seagrass can be stopped...**It's up to you!**

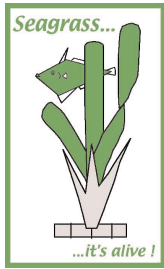
SEAGRASS.....IT'S ALIVE!!



Damage Costs in Seagrass Habitats

- Grounding and prop dredging in seagrass habitat has consequences to both habitat and personal property.
- Damage to vessel engines, hulls, and propellers often occur when a vessel grounds in seagrass or shallow bottom habitat.
- Gouging of seagrass habitat by propellers damages the blades and underground roots of the plant.
- Seagrasses require anywhere from 2 to 10 years to recover from propeller damage depending on the species of seagrass.
- Towing fees charged by companies who assist grounded vessels cost approximately \$125/hr. dock to dock during the day, and \$150/hr. dock to dock at night. The fee for refloating a grounded vessel is \$5-10/foot of vessel.
- Groundings resulting in damage to seagrass habitats are offenses subject to both federal and state fines and penalties including civil penalties, and costs of assessment of damage, restoration of habitat, and long-term monitoring of restored habitat.
 - Fines for seagrass damage in the FKNMS = \$100 per incident under one square yard of damage, and \$75 for each additional square yard up to 10 square yards. A grounded vessel can be charged up to \$100,000 per day.
 - A 1998 grounding case from Biscayne National Park resulted in fines and damages totaling \$63,377.00, or \$125 per square yard. Similar settlements are in court for Florida Bay groundings.
 - The initial violation fine for disturbing natural resources in Everglades National Park is \$150.
 - Violations for damaging plants (including seagrasses) on a National Wildlife Refuge can result in fines beginning at \$250.00.
- Many boat insurers will not cover some fines resulting from grounding.

SEAGRASS.....IT'S ALIVE!!



The Bottom Is Alive

- Seagrasses are flowering plants that live underwater.
- There are 7 species of seagrasses in Florida. Turtle grass, manatee grass and shoal grass are the most common types in the Keys.
- Seagrasses serve other important functions, such as:
 - helping maintain water clarity by trapping sediments
 - stabilizing the bottom with their roots (rhizomes);
 - serving as food to many marine animals.
- Species diversity of seagrass communities can range from 292 individuals to 10,644 per square meter.
- Seagrass communities are an integral component of the web connecting shallow water habitats that link wetland and mangrove communities to hardbottom and coral reefs. Damaging one habitat has severe consequences on the others.
- Seagrass species are critical for stabilizing sediments and providing a system that comprises hundreds or thousands of associated plant and animal species. Without seagrasses most of the region's that they would inhabit would be a seascape of unstable shifting sand and mud.
- Taking the time to look closely at a seagrass bed allows one to realize the complexity of the miniaturized living community that depends upon protection, shelter, and food from the seagrass meadow.

SEAGRASS.....IT'S ALIVE!!