Seagrass Presentation
Background Notes

I. Introduction

Why talk about seagrasses? How are they related to coral reefs?

--Extensiveness of the habitat, Benthic map showing seagrass coverage in sanctuary; number one habitat;

--Diversity—examples of seagrass inhabitants (sponges, corals, invertebrates, fish, seahorses, cushion star).

II. Seagrass Biology

--Introduce three species with images of all three for comparison;

--Seagrasses may reproduce vegetatively by growing from the apical meristems (pointed growing tips) on their rhizomes (underground stems that grow horizontally out from plant).

--Seagrasses may also reproduce by producing flowers that are pollinated underwater, the seeds float and can travel to new locations where they grow if the right conditions are present;

--Turtle grass slow growing as compared with shoal grass (pioneer vs. climax);

--Associated plants--algae and epiphytes (goniolithon, halimeda, penicillus).

III. Ecological Functions

--Sediment stabilization, prevents erosion;

--Water clarity and reef connection (clear water is important for coral community), trapping sediments from water column;

--Oxygen production for animals (uses sun's energy to make food and produces oxygen through photosynthesis);

--Serves as a habitat for many invertebrate and vertebrate animals, critical habitat for some are threatened or endangered organisms;

--Images of common animals that utilize the seagrass and reef

--shrimp life cycle tied to grassbeds (Young shrimp grow up in Florida Bay seagrasses and then migrate out to deeper waters as they mature; spawn

--examples of organisms that live in the reef and feed in the grassbeds like spiny lobsters and long spined-urchin *Diadema;*

--Forgaing grounds for wading birds and marine-life like turtles and manatees and dolphins;

--Seagrasses are critical for the survival of recreationally and commercially important species such as bonefish, tarpon, spiny lobster, stone crabs, shrimp.

IV. Navigation in the Seagrass

--Understanding channel markers—know what channel marker mean and stay well within the channel, especially upon entry, pay attention to numbers and which side of the channel that the marker is marking;

---No entry/no motor zones, "What are they for? Who can enter non-combustion zones?"

---Reading the water, color can be an indication of a reef below or other habitat, use polarized lenses to see through the water better;

---Using charts, before leaving the dock, have a plan and know where you are going, check depth on the chart, check key markers;

--Take appropriate boats for shallow waters;

--Take a boating course from the Coast Guard Auxiliary.

V. What to do if you get in water too shallow?

--Stop, trim your engine, pole or walk your boat to deeper water, do NOT try to power off.
Damage will be much less than if you try to power off and create more impact.

--Call for help.

VI. Damage

--Aerials that show the extent of damage, especially flats and channel entrances; photos show damage from prop scar and motors, produce blow- holes, wheel ditches, and sediment plumes (bad for water quality/results in resuspension of sediments).

-- Loss of habitat, underwater photo of prop scar showing how the prop cut the rhizomes in half, re-growth is very slow or almost non existent if sediment conditions are not right, the growing tips (apical meristems) of seagrass rhizomes won't naturally grow down into a scar or hole, they only grow horizontally;

--Fragmenting the banktop or grass flat, repeated scarring, erosion of the flat/banktop, accumulation of scars (repeated scarring in same spot) compounds the problem;

--Recovery time differs for shoal and turtle grass; recovery of shoal is much faster than for turtle grass (shoal grass is a colonizing species, represents primary succession; turtle grass community is the climax or mature stage);

--Natural recovery of the seagrass can take place slowly if the damage is minimal (if the scar is not too deep and not too wide), shoal grass tends to be the first species to move into a damaged area (even if the community had primarily been dominated by turtle grass), the result is shoal grass habitat where once a mature turtle grass community existed;
"Does the area every truly recover even when applying restoration techniques?';

VII. Law Enforcement

--Operators who cause damage are subject to fines that may include costs for restoration and long-term monitoring of the site to track its recovery;

VIII. Restoration of Impacted Seagrass Communities

--Research has been conducted on the pros and cons of different methods of restoration;

--One method that shows promise in shallow waters employs bird stakes, "What are they and how do they work?"

--Bird stakes are temporarily placed along a scar or hole. They stabilize the sediments by allowing shoal grass to move in quickly. Nutrient input from birds is quickly taken up by the shoal grass and used in growth.

--Habitat is lost and won't really be the same right away, if ever, in terms of diversity and maturity and production;

--Restoration is a solution, but it is not better than preventing the damage to begin with so everyone needs to be careful whenever boating.

VIV. Conclusion

--Seagrass Outreach Partnership goals and activities;
--Seagrass Outreach Partners Members Association List;
--Powerpoint Photo credits.

For more information on seagrasses, check out the resource materials available on this SOP cd toolkit, 2003 or contact Janice Duquesnel, Florida Park Service and/or Nancy Diersing, Florida Keys National Marine Sanctuary.