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Building a Seagrass Meadow – Improving Water Quality

Liberta Scotto 2002

Objectives

- Students will be able to:
- Identify an estuary
- Indentify a watershed
- Identify a habitat
- Understand the connection between your home and the health of the seagrass in an estuary
- List environmental pollutants that decrease seagrass growth
- Compare and contrast landscape practices around your house that effect water quality

Materials

- 115 (12") green pipe cleaners
- 1,148 multi-color beads
- One student drawing of a 3" fish
- One Styrofoam base, 12" x 12" x 1"
- Wire cutter for pipe cleaners

Methods

Cut all pie cleaners into two uneven pieces with wire cutters. Slide 5 beads of various colors onto different locations on each pipe cleaner. This is time consuming if you are working alone, so have a group of students help.

Now you are ready to build your seagrass meadow. Insert two rows of pipe cleaners along the outer edges of the base using varying sizes. In the center of the square insert the remaining pipe cleaners in a circle. This will mimic the look of a seagrass meadow.

Cut out the 3" paper fish and glue onto a pipe cleaner. Insert into base [fish can be double-sided by gluing a right and left side together with pipe cleaner in between].

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SEAGRASS MEADOWS

The model you completed constructing is an example of a healthy underwater seagrass meadow found in a Florida **estuary.** This square foot model shows the inhabitants of this vital **Habitat.** The beads represent small invertebrates, such as shrimp, crabs, snails, etc.

If an acre of seagrass provides habitat for 50 million small invertebrates and 40,000 fish, how many invertebrates and fish live in this square foot of seagrass? See below* for the answer to this question.

Some areas of Florida estuaries have lost more than half of their seagrass meadows. Every citizen in this county can make a difference by applying **fertilizers**, **pesticides** and water to their landscape only when necessary. This will improve water quality and help restore seagrass meadows in Florida's estuaries.

DEFINITIONS

Estuary: A body of water where freshwater and saltwater mix.
Fertilizers: Substances, such as chemicals or animal manure, used to provide nutrient to help plants grow.
Habitat: The place in which a plant or animal normally grows or lives that contain food, water, shelter and space in the appropriate amounts.
Non-point source: Pollution that cannot be traced to a particular source or point of entry.
Pesticides: Chemicals used to destroy or control plant, fungus or animal pests.
Stormwater: Water that runs off hard surfaces into the nearest body of water. This water may come from a rainfall or washing cars, over-watered lawns, and other sources. Stormwater can carry pollution directly into our natural water resources.
Watershed: The area of land that drains into a particular body of water.

Stressed Seagrass Meadow

* Answer:

One square foot of seagrass meadow will support 1,148 invertebrates and one fish.

Seagrasses need light to grow much like the grass on your lawn. When **stormwater** drains into the estuary, it clouds the water and light cannot reach the seagrass. This causes seagrass and habitat decline. This seagrass meadow is the result of stormwater runoff flowing from many different kinds of land uses from the **watershed** into the estuary. This runoff contains **non-point source** pollution from fertilizers, sediment, and pesticides.

We can help prevent this situation by adopting one or more of the following practices:

1. Plant native vegetation when possible.
2. Fertilize only when necessary.
3. Water landscape and lawn only as needed, preferably between 5 a.m. and 9 a.m. to avoid evaporation.
4. Apply pesticides only as needed.
5. Wash your car on the lawn, not on an impervious surface such as the driveway.