

Growing Oysters

Overview:

This activity is designed to show students how spat or oyster larvae rely on a hard substrate for survival. Students will also learn the importance of oysters to an estuary and how recycling oyster shells helps the oyster population.

Materials:

- Plywood or hard surface to mount oyster magnets
- magnetic sheets
- oyster shape (provided)
- paper
- scissors
- glue
- paper clips



Background:

North Carolina has more than 2 million acres of estuaries. These special places serve as a nursery area for juvenile animals as well as feeding grounds for many adult animals. Many different habitats make up an estuary and one very important habitat is oyster reefs. Sometimes called oyster rocks or oyster beds, these areas are made up of many oysters and line the North Carolina coast. Oysters help decrease erosion by stabilizing sediments and also aid in water filtration. Oysters also serve as habitat for juvenile fish and crabs.

The larval form of the oyster is called spat. Spat are oysters less than 25 mm (0.98 in) long. As part of the life cycle of the oyster, it must attach to a hard surface to continue growing. The most beneficial hard surface is another oyster shell. Oysters growing on each other create reefs which in turn will offer more water filtration, erosion control, settlement space for spat, and ultimately more habitat. Sometimes the hard surface is a manmade object like a dock piling or bulkhead. These settings are not ideal as they do not allow normal reef formation to occur.

Oyster cultch, or empty oyster shells, are often placed in North Carolina waters to encourage the growth of oyster reefs by providing areas for spat to settle. Oyster populations are at historical lows, and this restoration effort is aimed at helping the species recover.

Grade Level

2nd-8th

Objectives

* To learn how oysters rely on hard surfaces to grow.

* To become familiar with ways oysters help estuaries.

N.C. Essential Standards

Grade 2
(2.L.1.1)

Grade 4
(4.L.1.1, 4.L.1.2,
4.L.1.4)

Grade 5
(5.L.2.1, 5.L.2.3,
5.L.3.1)

Grade 8
(8.E.1.2, 8.L.3.1)

Activity:

For this activity, you will demonstrate how more oyster cultch in an area will result in more oyster growth.

Three different scenarios will be demonstrated using paper oyster magnets mounted on a hard surface such as plywood and colored paper clips as the spat.

First, print the oyster shapes provided below on paper. You can vary the size of the oysters to represent different sizes. Cut out the oysters and glue them onto the magnetic sheets. Once you have cut the oyster magnets out, you are ready to mount them onto plywood.

Have three different pieces of plywood for mounting. The first one should contain one big oyster. The second one should contain 5-10 oysters with the third one containing as many oysters as you can fit.

Using the paper clips which represent the spat, have the students gently toss them onto each board. Each clip that lands on the magnet represents a spat that will grow on that oyster shell.

An alternative to making three separate oyster boards is to divide the white board in your classroom into three separate sections and place the oyster magnets on the white board to create the scenarios.

After your students have conducted the activity, ask these questions.

1. Which scenario attracted the most spat?
2. Which scenario would provide the best habitat for growing oysters and other small animals?
3. What should be done with used oyster shells?
4. Which scenario should have the best water quality?
5. Other than attracting oyster spat, what other benefits can be provided by oyster cultch?

Extension:

- Have students learn more about North Carolina Division of Marine Fisheries Oyster Shell Recycling Program.
- Have students develop their own scenarios and include plants, mud or other inhibitors for the spat to attach to a hard surface.
- Have a class discussion regarding how estuaries rely on oyster shells for stabilization.

- Discuss what else might control spat survival (i.e. predation of the oyster spat).

Vocabulary:

- estuary
- oyster
- cultch
- spat
- erosion
- estuary
- oyster reef



The North Carolina National Estuarine Research Reserve is a cooperative program between the North Carolina Department of Environment and Natural Resources, Division of Coastal Management and the National Oceanic and Atmospheric Administration

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