

BayLife

BARNEGAT BAY SEINE ACTIVITY

AUTHOR:

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AFFILIATION:

**Ocean County
Vocational Technical School**

Marine Academy of Technology and Environmental Studies (MATES)



Barnegat Bay Festival. Photo: Lazslo Selly

1 Objectives:

Students will be able to:

identify organisms that live in the shallow waters of Barnegat Bay.

The shallow waters of local bays and estuaries are filled with living plants and animals. Snails, seaweed, and small fish such as killifish and silversides are common. Seining is an adventure for students and teachers as well. It is a great way to introduce everyone to the life common in the bay waters.

CORRELATION TO NJCCCS:

The correlations in this publication were done prior to 2002 utilizing the older standards from 1994.

SCIENCE	5.4/2, 5
	5.4/5
	5.6/2
	5.7/1
	5.12/1
	5.12/7

Subject Areas

Mathematics, Science.

Duration

Day field trip.
See the Resource Guide in the treasure chest for places within Barnegat Bay that conduct seining trips, and/or places you can go seining.

Setting

Outdoors - along the bay shore.

Skills

Data collection, identifying, estimating, calculating.

Vocabulary

seine.

2 Materials

- Beach seine (available at many bait & tackle shops)
- Buckets
- Small aquarium
- White basins (white works well for visibility) for temporary observation of organisms collected
- Field ID Guides, journals
- Collecting jars
- Hip waders – or old sneakers

3 Background

NOTE: This activity is designed for field experience and observation. Students may participate in seining activities coordinated with local environmental centers at Island Beach State Park or Cattus Island County Park, Toms River, among other agencies and organizations. For additional resources for seining activities or projects, please see accompanying Barnegat Bay Watershed Educational Resource Guide. Please check with your school district for any restrictions pertaining to water-related activities.

■ A beach seine is designed to be pulled by two students through the shallow water. The seine consists of a mesh net attached to two poles. Seine mesh comes in a variety of sizes, depending on the purpose. A fine mesh is most appropriate for this type of sampling. A beach seine is used to collect organisms that swim in the shallow water.

4 Procedure

WARM UP: Equipment set up on shoreline. Students can assist in preparation and clean-up of this project.

■ Aquaria filled with bay water and set on overturned buckets make wonderful observation areas for students to observe animals and plants collected in seine net interacting in a “natural setting.”

■ Be sure to release all animals after short observation and identification period. Transferring fish from aquaria to bay with dip net is recommended since improper handling can damage scales. It is best to release some fish such as Atlantic Silversides to bay immediately after seining and



Seining Workshop, Lighthouse Center for Natural Resource Education, Waretown, NJ. Photo: Carla Miners

initial identification of species since they will not survive during a period of time removed from bay. *(Staff from nature or environmental center can provide seining information and demonstrations and advice on collection and release of marine species.)*

■ Introduce students to history and use of seine net. The instructor and a student volunteer demonstrates use of seine net in bay. Students on shore act as “coaches” for seiners and “net helpers” when net is brought back to shore.

THE ACTIVITIES:

Student “teams” seine, collect, observe and document observations in journals.

■ With one student at each end, unravel the net until both poles are exposed.

■ With a student holding each pole, enter the water perpendicular to the beach. The student in the lead should walk into the water as far as safely possible. The students should walk along parallel to the shore and then the outside student turns toward the shore, and both students walk into the shore. The poles should be dragged along the bottom, with the bottom of the pole a little in advance of the top.

■ When the seine is dragged onto the shore other students can help gather and count the different specimens collected.

■ Place one of each organism caught in a bucket of bay water then quickly count and return the rest.

■ Be sure to release all animals after short observation and identification period. Transferring fish from aquaria to bay with dip net is recommended since improper handling can damage scales. It is best to release some fish such as Atlantic Silversides to bay immediately after seining and initial identification of species since they will not survive during a period of time removed from bay.

■ Students assemble to share observations and record identified species and numbers collected. Students observe the organisms collected and record this information in the data table

■ Discuss each organism.

■ Submerged Aquatic Vegetation (SAV) is a source of vegetation within the bay. for marine species. Presence of plant species from shoreline may be noted in student observations.

■ Clean out the net and roll up with the poles.

5 Extensions

The “Salt Marsh Players” from Project Aquatic WILD and other food web activities may be used to extend or reinforce concepts presented in this activity.

6 Safety Concerns

✓ Caution – students will get wet and you and they must be prepared for this!

✓ Never allow students to use hip waders in the ocean or in heavy waves.

✓ This activity is best done at low tide since it is easier for the students to move through the water

✓ Be extremely careful of the debris that may be on the bay bottom. NEVER seine barefoot!

✓ Pay careful attention to the sloping of the bottom. Sudden drop-offs, unevenness, and “holes” can be dangerous.

Barnegat Bay Survey Data Form

Name: _____

Date: _____

Location: _____

Vessel: _____

GPS Longitude: _____ ° _____ ' _____ " N
DEGREES MINUTES SECONDS

GPS Latitude: _____ ° _____ ' _____ " W
DEGREES MINUTES SECONDS

Weather Observations (circle):

Sunny Partly Cloudy Mostly Cloudy Overcast Rain

Air Temperature: _____ C/F Water Temperature: _____ C/F

Water Condition (circle): Calm Light Chop Chop Heavy Break

Wind Direction: _____ Wind Speed: _____ mph/ knots

Salinity Value (ppt) _____ Water pH _____

Methods of collection (i.e seine, trawl, net....) _____

Observations:

1. List all organisms collected in your data table. (See opposite side.)

2. Use the field guide to identify the organisms collected.

3. How many different organisms did you collect? _____

4. How large was the largest? _____

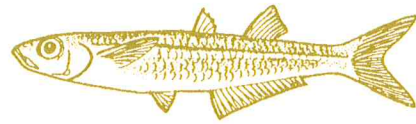
5. How small was the smallest? _____

5. Why do you think very large organisms were not caught in the seine?

6. Discuss some of the special adaptations of the organisms you collected.



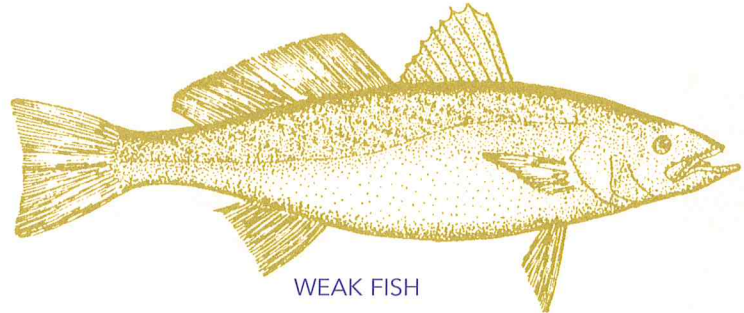
BLUE CRAB



ATLANTIC SILVERSIDE



FIDDLER CRAB



WEAK FISH

Please check the flora and fauna, and the amount of each collected:

ALGAE AND SUBMERGED AQUATIC VEGETATION:

- Green Fleece (Codium)
- Red Tube Weed
- Ulva (Sea Lettuce)
- Tangle Weed
- Hollow Green Weed
- Sour Weed
- Agardh's Red
- Rockweed (Fucus)
- Eel Grass
- Widgeon Grass (Ruppia maritime)
- Other(s)

LIST AND DESCRIBE

INVERTEBRATES:

- Mud Dog Whelk
- Red Beard Sponge
- Finger Sponge
- Shore Shrimp
- Common Periwinkle
- Marsh Snail
- Moon Snail
- Sand Shrimp
- Blue Mussel
- Quahog (Hard Clam)
- Ribbed Mussel
- Grass Shrimp
- Blue Crab
- Green Crab
- Mud Crab
- Rock Crab
- Lady Crab
- Fiddler Crab
- Spider Crab
- Marsh Crab
- Amphipods
- Isopods
- Fan Worm
- Clam Worm

- Filograna (Bundle Tube)
- Spirorbis (Tube)
- Ribbon Worm
- Bryozoa
- Bopyrid Isopod
- Slipper Shell
- Acorn Barnacle
- Common Sea Star
- Purple Sea Urchin
- Golden Star Tunicate
- Hairy Sea Cucumber
- Comb Jelly
- Vellela (By the Wind Sailor)
- Mantis Shrimp
- Horseshoe Crab
- Other(s)

LIST AND DESCRIBE

VERTEBRATES:

- Silversides
- Mummichog
- Striped Killifish
- Sheepshed Minnow
- Northern Puffer
- Northern Pipefish
- White Perch
- Summer Flounder
- Winter Flounder
- Hogchoker
- Stickleback
- Tautog
- Black Sea Bass
- Weak Fish
- American eel
- Other(s)

LIST AND DESCRIBE
