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Exploring Narrow River through the Lenses of Science and Art

Field Studies & Class Notebook

Middlebridge Outdoor Recreation and Education Center (MORE) on Narrow River

at Town of Narragansett property

June 2015

NARROW RIVER PRESERVATION ASSOCIATION
BOX 8 SAUNDERSTOWN, RI 02874

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A collaboration of
Rhode Island Rivers Council (RIRC),
Narrow River Preservation Association (NRPA),
Narragansett Pier Middle School (NPMS) teachers
And the Town of Narragansett, RI

Funding provided by the Rhode Island Rivers Council (RIRC) and
the Rhode Island Water Resources Board (RIWRB)

INTRODUCTION

This notebook was originally developed by personnel at the United State Fish and Wildlife Service's Rhode Island National Wildlife Complex, particularly Janis Nepshinsky and Diana Funke, in fall 2003. It has been revised and added to by the Narrow River Preservation Association (NRPA)'s Education Committee, particularly Veronica Berounsky, and by Narragansett School System (NSS) teachers, particularly Kathy Couchon, between 2003 and 2005. In 2015, it was updated by Veronica M. Berounsky (NRPA) and Janet Stone (NSS). It is meant to serve as a guide and notebook for classroom instruction, field trips, and student projects relating to the Middlebridge property, the John H. Chafee National Wildlife Refuge, and other areas in the Narrow River Watershed (Pettaquamscutt River Estuary). Funding for the 2015 updates and field trips were provided by a grant to NRPA from the Rhode Island Rivers Council and the Rhode Island Water Resources Board. The 2015 program was designed to:

1. Give students a re-usable backpack to keep, with project supplies.
2. Highlight the Middlebridge property now owned by the Town of Narragansett.
3. Take students and teachers on a field trip to the Narrow River to explore and examine it through art and science projects.
4. Have students create tangible projects that convey the value of the River and increase understanding of the River in terms of both science and art.

Narrow River & the Narrow River Preservation Association

As designated by the Rhode Island Rivers Council, the official watershed council for the Narrow River (Pettaquamscutt River Estuary) is Narrow River Preservation Association. It was founded in 1970 is a non-profit 501(c) (3) environmental protection group.

The mission of the Narrow River Preservation Association (NRPA) is to preserve, protect, and restore the natural environment and the quality of life of all communities within the Narrow (Pettaquamscutt) River Estuary and Watershed.

For more information about NRPA and its programs, see: www.narrowriver.org

A copy of the Special Area Management (SAM) Plan for the Narrow River can be found at: http://www.crmc.ri.gov/regulations/SAMP_NarrowRiver.pdf. This book includes chapters on management, water quality, geological processes, living resources and critical habitats, storm hazards, cultural and historical resources, cumulative and secondary impacts, regulations, land preservation and acquisition. .

Below is some information about the Narrow River and about estuaries in general:

ESTUARIES IN GENERAL:

- An estuary is where salt water and fresh water meet and mix. May be semi-enclosed.
- Estuaries are important as nursery areas for fish, shellfish, etc., because they are more protected
- Estuaries are very productive ecosystems
- Estuaries are also important because they may concentrate or retain nutrients, phytoplankton and other materials, which can be good for hungry or juvenile organisms, but can be harmful by leading to eutrophication.
- Eutrophic means rich in nutrients, from the Greek word Eutrophos meaning well-nourished
- Eutrophic systems may have low oxygen levels in some seasons
- Tides are what brings salt water up the estuary
- Watershed is the land area that drains to a common outlet. We all live in one

NARROW RIVER IN PARTICULAR:

Introduction

- Runs north to south along the South Kingston – Narragansett border. Northern reaches are in North Kingstown.
- Narrow River is **typical** of estuaries (salinity along length ranges from 0 to 32 o/oo) has nonpoint source pollution, is closed to shellfishing, flows through multiple towns, variety of animals & plants, including some invasive species.
- Narrow River is also **unique** (fjord-type system, 2 naturally anoxic basins, no point source pollution)
- Numerous scientific studies done here by scientists from all over the world (anoxia basins, river in general), approximately 200 entries in Narrow River Bibliography

Physical & Geological & Chemical Topics:

- Watershed is about 14 sq. miles, estuary is about 10 miles long
- Drowned river valley, scoured out by glaciers 18,000 years ago, steep walls on the east and west of the "Ponds", shallow at Pettaquamscutt Cove and mouth. Flooded by the Atlantic Ocean about 2,500 years ago.
- Small freshwater sources: 34 % = Gilbert Stuart stream, 19% = 2 Pettaquamscutt Cove streams (Mumford Brook, Crooked Brook), and 47% from small streams & groundwater
- Unique fjord-like system = 2 deep basins separated by shallow sill. Upper Pond = 45 ft. deep, Lower Pond = 60 ft. deep
- Two almost permanent anoxic (without oxygen) basins ("Ponds") with unique microscopic organisms, due to stratified water column with lighter, fresh water capping denser salt water. Is a natural situation (not water quality problem). Only about 10 places in the world have almost permanent anoxic basins & resultant microbes. Material stays well-preserved there – no oxygen to help things rot or rust
- An overturn (or ventilation) is when the anoxic basin water mixes with oxygenated water. May be due to decreased freshwater flow and increased denser seawater flow, then the denser seawater displaces the lighter freshwater (even displaces less dense seawater) and causes mixing, with sulfur dioxide released (rotten egg smell)
- Anoxic waters eliminate bottom bioturbation, so get well-preserved sediment layers
- Narrow shape & slowly flushed, so River easily accumulates materials (sand, nutrients, pollutants, algal mats, etc.)
- River mouth has exposed sand flats at low tide and boat "channel", but location varies
- Dredging suggested by US Army Corp to restore habitat

Biological Topics:

- Birds = osprey (one of only 17 breeding sites in RI), egrets, ibis, herons, geese, gulls, swans, ducks, blackbirds, sparrows, piping plovers (protected area at mouth), terns, sandpipers, a few sightings of bald eagles
- Land animals = fox, deer, snakes, rabbits, raccoons, toads, domestic pets
- Amphibians = snapping turtles, frogs,
- Land plants = reed grass (phragmites), sedge grass, rushes, saltmarsh cord grass, saltmeadow grass, spike grass, and saltwort.
- Submerged aquatic vegetation = mainly eelgrass
- Phytoplankton = more species of these microscopic plants here than species of birds & fish in all of Rhode Island.
- Finfish = alewives, silversides, minnow, mummichug, stickleback, flounder, striped bass, white perch, bluefish, eel, and pipefish
- Invertebrates = quahogs, mussels, razor clams, softshell clams, blue crab, seastars, horseshoe crab, green crab, mudworms, clamworms, bamboo worm, barnacles, comb jellies, periwinkles, hermit crabs, sea squirts, sponges, amphipods, and isopods
- Seaweeds = sea lettuce, rockweed, kelp, sausage weed, dead man's fingers, Irish moss, dulse,
- Invasive species = hooked mussels, Japanese shore crab
- Salinity = differences determine where organisms live in the estuary

- High salinity organisms = quahogs (mercenaria), blue mussels, periwinkels, hermit crabs, horseshoe crabs, saltmarsh cord grass, saltmeadow grass, spike grass, saltwort.
- Low salinity animals = blue crabs, soft-shell clams (Mya), oysters, reed grass (phragmites), sedge grass, rushes,

Human Impact Topics:

- Dealing with 3 towns and 3 land use ideas
- Residential development - ~2000 households in 14 sq miles of watershed
- Septic systems in a few places
- Sewers in most neighborhoods, which allows "build out" (new construction, erosion)
- Road run-off & storm sewers, now some detention ponds
- Sometimes conflicting water uses (swimming, boating, jet skis, skulling (rowing), finfishing, shellfishing, etc.)
- Increased development; summer homes developing into year-round homes
- Chemical lawn fertilizers
- Commercial pesticides
- Faulty septic systems and pet and waterfowl waste produce excess nutrients. Excess nutrients can result in algal mats and phytoplankton blooms. These block light to lower waters, use up oxygen as they decay, and are also an aesthetics problem. All plants need sunlight, so low water clarity is a problem for other plants and can lead to loss of eelgrass. All (usual) animals need oxygen to live, so low oxygen is a problem
- Phragmites (tall reed grass) – sign of freshwater seeps & sediment disturbance

Historical Sites

- Thought to have been discovered by Vikings.
- Coojoot Lead mine, Treaty Rock Park, Garrison House Acres, The Glebe

Programs and Issues NRPA is working on:

- River (Watershed) Watch = Volunteer monitoring program: biweekly for chlorophyll, temperature, water clarity, dissolved oxygen, salinity, and monthly for pH, nutrients (total and dissolved phosphorus, total and dissolved nitrogen), bacteria (fecal coliforms and E. coli), from mid-April to mid-October, at 14 sites.
- US Fish and Wildlife research on Pettaquamscutt Cove area to identify high levels of bacteria there and in Mettatuxet Stream
- K-12 Education: AWEsome school curriculum & teacher course, field trips.
- Awards: science fairs, scholarships, environmental achievement
- Partnering with the URI Crew teams, whose boathouse is on the River
- Public education = "Guide to Living in the Watershed", Water quality improvement magnets, Don't feed the waterfowl campaign, Storm drain marker program – "Don't Dump - Drains to River"
- Proposed jet ski ban - legal & environmental & ethical (personal rights) issues
- Promote enforcement of no wake zones
- Discourage dock building in lands designated as "Areas of Critical Concern"
- Promote environmentally-sound building practices

Figure 1. Narrow River and Watershed

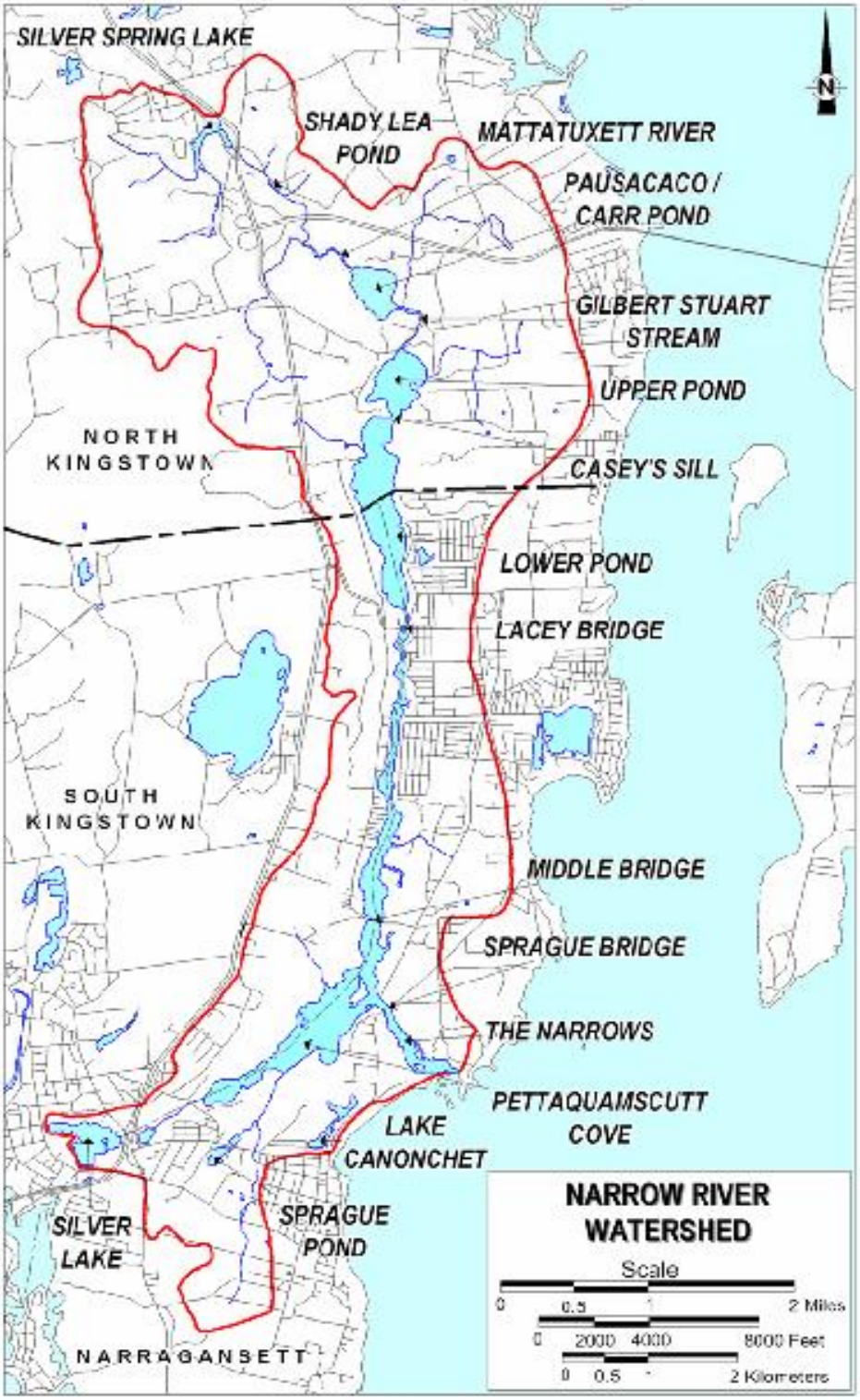

Figure 2. The Narragansett Bay Watershed showing the Narrow River Watershed. From: www.nbep.org/maps

Special for Students:

Each student will receive a re-useable string backpack, with the NRPA logo, with supplies for the day:

White t-shirt for fish prints
Heavy paper for marine algae pressed prints
Pencil for sketching
Heavy paper for sketching
4-pack crayons for adding color
Plus NRPA brochure

What to wear?
Where clothes that can get wet or dirty.
Hat with visor or brim.
Shoes that can be worn in the water and will protect feet such as sneakers or boots (no flip flops).
Rain gear if weather is drizzly or there is the potential for showers
Sun block
Insect repellent

Food to bring?
Water bottle
Bag lunch
Snack
Do not leave any litter or trash behind you

Anything else?
A towel to sit on on the grass during lunch.
Plus you can use it to dry your feet and hands

FIELD TRIP ACTIVITY SCHEDULE

When: Tuesday, June 9 and a rain date of Wednesday, June 10 (when water warms up but before school is out).
Who: approximately 100 middle school students and their teachers, so approximately 20 student in each of 5 activities.
What: carry out various scientific and artistic activities in the watershed and water of the Narrow River (Pettaquamscutt River Estuary) at the Town of Narragansett property at Middlebridge.

Daily Schedule:
9:00 NRPA personnel meet at Middlebridge site to review day's activities
9:15 activity leaders arrive,
set up activity stations (5 stations) by the River
9:45 school buses arrive & cars with teachers and parents
explain activities to the students & teachers, give them bags with supplies
have students divide into pre-determined subgroups (based on home room)
10:00 – 10:30 = Round One of activities (30 minutes) and then 5 minutes to move
10:35 – 11:05 = Round Two of activities (30 minutes) and then 5 minutes to move
11:10 – 11:40 = Round Three of activities (30 minutes) and then 5 minutes to move
11:45 – 12:15 = lunch (30 minutes) and then 5 minutes to move
12:20 – 12:50 = Round Four of activities (30 minutes) and then 5 minutes to move
12:55 – 1:25 = Round Five of activities (30 minutes) and then 5 minutes to move
1:30 – 1:45 = Wrap up & clean –up (15 minutes)
1:50 Board buses for return to school

Activity	Round One 10:00- 10:30	Round Two 10:35-11:05	Round Three 11:10-11:40	Round Four 12:20-12:50	Round Five 12:55-1:25
#1 = What's in the River?	Group A	Group E	Group D	Group C	Group B
#2 = Water Testing	Group B	Group A	Group E	Group D	Group C
#3 = Fish Printing	Group C	Group B	Group A	Group E	Group D
#4 = Seaweed Pressing	Group D	Group C	Group B	Group A	Group E
#5 = Narrow River Art	Group E	Group D	Group C	Group B	Group A

Groups are by home room and chaperoned by that teacher:
A = Janet Stone's home room (chaperon = Mrs. Martin)
B = Shelia McPartlin's home room
C = Lynn Galligan's home room
D = Ryan Kanaczet's home room
E = Nancy Pesante's home room

FIELD TRIP ACTIVITIES AND GOALS

Activity #1 = What's in the River? Living Organisms in the Estuarine Environment.

1. The students will explore the shoreline & intertidal zone of the Narrow River Estuary.
2. The students will collect and count at least ten species from an estuarine environment (listed above) using the quadrants.
3. The students, with an adult, will use the seine nets to collect and count at least 10 species of organisms from the water.
4. The students will put organisms in water in bins to observe the plants and animals of the estuary.
5. The students will understand that color, shape, and behavior are ways that organisms try to stay hidden in their environment.

Activity #2 = Water Quality Testing

1. The students will measure the salinity of Narrow River using a refractometer
2. The students will measure the pH of the Narrow River with a test strips.
3. The students will measure the air and water temperature with a thermometer.
4. The students will measure the amount of nitrate plus nitrite in the water with test strips.
5. The students will sample for chlorophyll using a plastic syringe and filter
6. The students will understand why these measurements are vary and why they are important.

Activity # 3 = Fish Printing

1. Students will examine different types of large fish (the fish are not living)
2. The students will put paint on fish and then make a print on t-shirts.
3. The students will understand the parts of the fish and identify fish using field guides.

Activity # 4 = Pressing and Preserving Marine Algae

1. The students will learn to make botanical prints of different algae on paper.
2. Students will put the algae prints in a plant press and leave to dry for a week.
3. The students will identify the algae using field guides.

Activity # 5 = Images of the Narrow River Estuary

1. Students will walk and explore the salt marsh
2. Students will draw pencil sketches of the plants, animals, and/or habitats or vistas of the estuarine environment
3. The students will note what types of plants and animals live in the salt marsh.

Activity Leader #1 Charlie Biddle, Catalina Martinez (AM), Sheldon Pratt (PM)
Activity Leader #2 Veronica Berounsky
Activity Leader #3 Janet Stone
Activity Leader #4 Jeanne Tsakeres
Activity Leader #5 Richard Grant and Pati Sylvia and NPMS Art Teacher Terry Burke

Activity #1 = What's in the River? Living Organisms in the Estuarine Environment

There is a 30 minutes time slot, so spend 15 minutes on quadrants and sieves (2 subgroups) and on seine net (2 sub groups), including 5 minutes looking at and identifying found animals. Then switch equipment. Activity leader needs to keep track of time for students so they know when to switch. Students can choose anywhere north of the boathouse to sample. Mark sampling sites on topographic map.

4 sub groups of 5 students each – so need 2 quadrants, 2 seine nets
Sub group W = quadrant, shovel, bucket, sieves, field guide, magnifying lids/lenses
Sub group X = quadrant, shovel, bucket, sieves, field guide, magnifying lids/lenses
Sub group Y = seine net, bucket, field guide, magnifying lids/lenses
Sub group Z = seine net, bucket, field guide, magnifying lids/lenses

Supplies needed per group of 20 students:
4 clear plastic bins as holding tanks for animals
2 quadrants
2 seine nets
4 collecting buckets
4 clipboards
4 pencils
4 data sheets
4 topographic maps
4 magnifying lids/lenses
2-10 cm rulers
2 shovels
2 sieves
4 plastic covered guidebooks – intertidal organisms
also 1 copy of each Connecticut College Arboretum field guide

Although the whole subgroup will work together, each subgroup needs to have one student responsible for recording (writing down) the data, one student responsible for looking up organisms in the field guides, and the other 2-3 students will get wetter/dirtier because they will use the nets or place the quadrants and pick out the animals. Ideally, each subgroup will identify and tally 10 different organisms. Think about why the organism is there and note any interesting facts (such as invasive species, likes high salinity, likes cooler water temperatures, etc.)

Seining Procedure:

Two people (seiners) are needed to work the net for seining. For safety, only seine in water below your waist. If the seiners are wearing waders, be sure no water comes over the top of the waders. Each person holds one end of one pole, keeping the pole nearly perpendicular to the water's surface but the top of the pole should be slightly tilted back. The seiner's other hand should be lower on the pole and the pole bottom should be away from the seiner and on the bottom of the river. The net should be as outstretched as possible while still making an arc, so there should be some distance between the seiners. The two seiners walk parallel to the shore, slowly and at the same pace. Near the end of the seining, the seiner closest to the shore stops and turns in place while the other seiner walks towards shore. Once the net is parallel to the shore, the seiners tilt the top of the poles further back, scoop the net up from the bottom (holding the catch in the net) and walk it to shore. The rest of the group immediately collects the animals and any plants from the net and puts them in buckets or bins of river water for observation.

Activity #2 = Water Quality Testing

The first 10 minutes will be spent explaining the tests to the whole group. Then each subgroup goes to its assigned location, together the stations make a transect along the River. The subgroup takes a bucket of water, and then each person takes one measurement - for salinity, temperature, pH, nitrate+nitrite, or chlorophyll and writes it down on the data sheet (15 minutes). Then all subgroups come together and compare data (5 minutes). Activity Leader keeps track of time.

Testing Techniques:
salinity = refractor
temperature = thermometer
pH = paper test strips
nitrate+nitrite nitrogen = chemical test kit
chlorophyll = filter and water syringe

4 subgroups, each at a different assigned station (W,X,Y,Z). See map for exact site.
Subgroup W (5 students) = corner of bridge and Narrow River Kayaks (cross street carefully, chaperone goes with this group)
Subgroup X (5 students) = corner of bridge and Narragansett Town marina
Subgroup Y (5 students) = next to boat ramp (where seining is)
Subgroup Z (5 students) = in front of Eddy home

Supplies needed per group of 20 students:
4 clipboards
4 pencils
4 data sheets
4 topo maps
4 refractor, in plastic box with pipette
4 thermometers
4 pH paper test strip kits (x 4 for the day = 16)
4 nitrate+nitrite nitrogen chemical test kit (x 4 for the day =16)
4 filter holders with filter (pre set up) and syringe for water
Boots or shoes that can get wet.

In each subgroup, each student is responsible for one test and for writing down the results on the data sheet.

Activity #2 = Water Quality Testing
Data Sheet
Date: June 9, 2015

Check which subgroup (location):

- Subgroup W = corner of Middle bridge and Narrow River Kayaks
- Subgroup X = corner of Middle bridge and Narragansett Town marina
- Subgroup Y = next to boat ramp (where seining is)
- Subgroup Z = in front of Eddy home (north of boat ramp)

Write name of each students in subgroup and the test they carried out:

1. **_____test:_____**
2. **_____ test:_____**
3. **_____ test: _____**
4. **_____ test: _____**
5. **_____ test:_____**

RESULTS:

salinity = via refractor = _____o/oo

temperature = via thermometer:
air = _____oC _____oF
water = _____oC _____oF

pH = via paper test strips = _____

nitrate+nitrite nitrogen = via paper (chemical) test strips
nitrate _____
nitrite_____

chlorophyll = via filter and water syringe – color of filter?_____

Activity # 3 = Fish Printing

Activity leader will explain procedure. Ten students in a group can make a print at a time, meanwhile the other ten students are looking at field guides and fish to identifying fish and fish parts and painting names, etc. on t-shirts. After 15 minutes, fish gets passed to another student. Activity leader needs to keep track of time for students

Techniques:

1. Fish Identification
    a. Use field guides to identify fish
    b. Use field guides to identify part of fish
2. Fish Prints
    a. Layout white t-shirt on table covered with newspapers or ground covered with newspapers.
    b. Brush paint onto fish.
    c. Press fish on t-shirt, press (use roller) all edges of fish.
    d. Pass fish on to another student.
    e. Use small brush to write name of fish on t-shirt and date.
    f. Write student's name on t-shirt.
    g. Add more art to t-shirt if you would like.

Supplies needed per group of 20 students:
10 different fish for identifying
10 fish field guides
20 t-shirts
20 jars of paint
20 paintbrushes (for writing and other artistic designs)

Activity # 4 = Pressing and Preserving Marine Algae

In the interest of time, marine algae was collected the previous day and held in coolers overnight with River water. There will be 4 stations set up for pressing and preserving seaweeds (marine algae). Each subgroup of 5 students will work at each station and will obtain marine algae from the cooler. They will take turns using the trays, but they have 30 minutes to make the prints.

Technique:
Each student will get 1 sheet of heavy paper and will put 1 (or 2 smaller) pieces of marine algae on it. Each piece of marine algae should be identified with the help of field guide books. Its name and the location where it was found, in addition to the student's name and the date should be written on the paper in pencil.

Supplies needed per group of 20 students:
4 field guides
2 coolers for holding algae
4 trays for floating marine algae in
4 trays for flat surface for patting dry the print
4 sponges and toothpicks – for arranging the marine algae
5 plant presses (one per group/homeroom)
20 pieces heavy paper (x 5 for the day = 100 sheets for the day)
Plant press (with newspaper sheets and ventilators)

Activity # 5 = Images of the Narrow River Estuary

30 minutes time slot, so spend 15 minutes walking along the marsh and then 15 minutes drawing. Activity leader needs to keep track of time for students so they know when to switch.

Techniques:
Drawing
Students will make 1 sketch. They can sketch a view of the River or can do a scientific illustration of an organism in the water bins (including those found during Activity #1). Be sure to label drawings with student's name & date, identify organism if possible. Students can use colored crayons to add color if they like. Sketches can be finished as school if need be.

Supplies needed per group of 20 students:
20 clipboards
20 drawing pencils
20 - 4 pack of Crayons
20 sheets heavy drawing paper (x 5 for the day =100 sheets for the day)

Figure 3. Middlebridge Outdoor Recreation and Education Center

Narragansett Bay Biota Gallery Animals: Invertebrates

Arthropods

- Amphipods
- Atlantic Horseshoe Crab
- Blue Crab
- Common Spider Crab
- Green Crab
- Hermit Crab
- Isopods
- Japanese Shore Crab
- Lady Crab
- Marsh Fiddler Crab
- Northern Lobster
- Northern Rock Barnacle
- Opossum Shrimp
- Rock Crab
- Sand Shrimp
- Shore Shrimp

Mollusks

- Bay Scallop
- Blue Mussel
- Common and Rough Periwinkles
- Channeled Whelk
- Eastern Oyster
- European Oyster
- False Mussel
- Hard-shelled Clam
- Long-finned Squid
- Northern Moon Snail
- Ribbed Mussel
- Slippershell
- Softshelled Clam

Bryozoans

- Nodding Head

Polychaetes

- Clam Worm

Cnidarians

- *Aequorea* spp.
- Lion's Mane Jellyfish
- Moon Jellyfish
- Orange Striped Sea Anemone

Porifera

- Red-beard Sponge
- Boring Sponge, Sulfur Sponge

Ctenophores

- Common Southern Comb Jelly
- Sea Gooseberry

Tunicates

- Asian Stalked Sea Squirt
- Atlantic Rough Sea Squirt

Echinoderms

Common Sea Star

- Purple Sea Urchin

Narragansett Bay Biota Gallery Animals: Vertebrates

Birds

- Bufflehead
- Common Goldeneye
- Common Tern
- Double-crested Cormorant
- Great Black-backed Gull
- Herring Gull
- Laughing Gull
- Red-breasted Merganser

Mammals

- Harbor Seal

Fish

- Alewife
- American Eel
- Atlantic Mackerel
- Atlantic Menhaden
- Atlantic Silverside
- Banded Rudderfish
- Bluefish
- Butterfish
- Common Mummichog
- Cunner
- Little Skate
- Northern Searobin
- Red Hake
- Sandbar Shark
- Sandtiger Shark
- Scup
- Smooth Dogfish
- Spiny Dogfish
- Striped Bass
- Summer Flounder
- Tautog
- Winter Flounder

Narragansett Bay Biota Gallery Plants: Aquatic

Sea grasses

- Eelgrass

Narragansett Bay Biota Gallery: Algae

Phaeophyceans (Brown)

- *Ascophyllum nodosum* (Common name: knotted wrack)
- *Desmarestia aculeata*
- *Ectocarpus siliculosus*
- *Fucus* sp. (Common name: rock weed)
- *Laminaria digitata* (Common name: fingered kelp)
- *Laminaria saccharina* (Common name: sugar kelp)
- *Leathesia difformis* (Common name: sea potato)
- *Petalonia fascia*
- *Scytosiphon simplicissimus*(Common name: sausage weed)

Chlorophytes (Green)

- *Bryopsis plumosa*
- *Chaetomorpha linum*
- *Cladophora sericea*
- *Codium fragile* (Common names: Oyster thief, green fleece, Sputnik weed, Dead man's fingers)
- *Enteromorpha* sp.
- *Protomonostroma undulatum*
- *Urospora penicilliformis*
- *Ulva lactuca* (Common name: sea lettuce)

Rhodophytes (Red)

- *Bonnemaisonia hamifera*
- *Champia parvula*
- *Chondria capillaris*
- *Chondria dasyphylla*
- *Chondrus crispus* (Common name: Irish moss)
- *Coccotylus truncatus*
- *Corallina officinalis*
- *Cystoclonium purpureum*
- *Dasya baillouviana*
- *Dumontia contorta*
- *Grateloupia doryphora*
- *Grinnellia americana*
- *Hildenbrandia rubra*
- *Lomentaria orcadensis*
- *Palmaria palmata* (Common name: dulse)
- *Phycodrys rubens* (Common name: sea oak)
- *Polyides rotundus*
- *Polysiphonia lanosa*
- *Polysiphonia subtilissima*
- *Porphyra umbilicalis* (Common name: nori)
- *Spermothamnion repens*