



# NBNERR NEWS

A newsletter from the Narragansett Bay National Estuarine Research Reserve

A partnership of the National Oceanic and Atmospheric Administration and the Rhode Island Department of Environmental Management

Vol.1 No. 1

Winter/Spring 2005

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## National Estuarine Research Reserve System



The National Estuarine Research Reserve System (NERRS) was created by the National Oceanic and Atmospheric Administration (NOAA) as a result of the Coastal Zone Management Act of 1972. The NERRS is currently a network of 26 protected sites across the coastal United States and Puerto Rico and protects over 1 million acres of estuarine and upland habitats. The reserve system strives to provide

sites for long-term research and monitoring, education, and stewardship and works to improve coastal management through education and training of our coastal decision makers. To learn more about NERRS and other reserves, please visit [www.nerrs.noaa.gov](http://www.nerrs.noaa.gov).

Narragansett Bay National Estuarine Research Reserve  
PO Box 151  
55 South Reserve Drive  
Prudence Island RI 02872

## What's Happening At NBNERR

### Seals and Shorebirds

Saturday April 23rd

Seals are abundant around Prudence Island this time of year but as always, we can't guarantee that they will be hauled out, hanging out, and waiting for our arrival. With or without the seals, the day will still be eventful. This tour includes a visit to the NBNERR Learning Center and South End Reserve. After lunch we will explore the center of the island where you will see a one-room schoolhouse, light house, historical cemetery, pulpit rock and the beautiful western coastline. The island is also a great place for winter birds and winter birders. Common species include mergansers, common goldeneyes, buffleheads, brants, and white-winged scoters. Bring your lunch, binoculars, and remember to dress warmly. You will depart on the 10 am ferry from Bristol, RI and return on the 4 p.m. ferry from Prudence. Cost includes round trip ferry pass, island transportation, and tour. For ferry and parking information please call the PI ferry Company at (401) 253-9808. ASRI members \$25, Non Members \$27. For more information and to register, call Kim at 401-683-6780 ext.1

### Seal Monitoring Volunteers Needed

NBNERR monitors seals to support a statewide monitoring effort lead by Save The Bay. The most common seal seen in Narragansett Bay is the harbor seal. This year we had an unusual visitor; a hooded seal hauled up on a west side beach. Typically, seals haul out on both the north and south ends of Prudence Island on exposed rocks during low tides. If you would like to count seals on NBNERR property on Saturday, April 9th, please contact Matt Rehor at 401-683-6780 ext.7 or by email at [matt@nbnerr.org](mailto:matt@nbnerr.org)

### Earth Day at AEEC

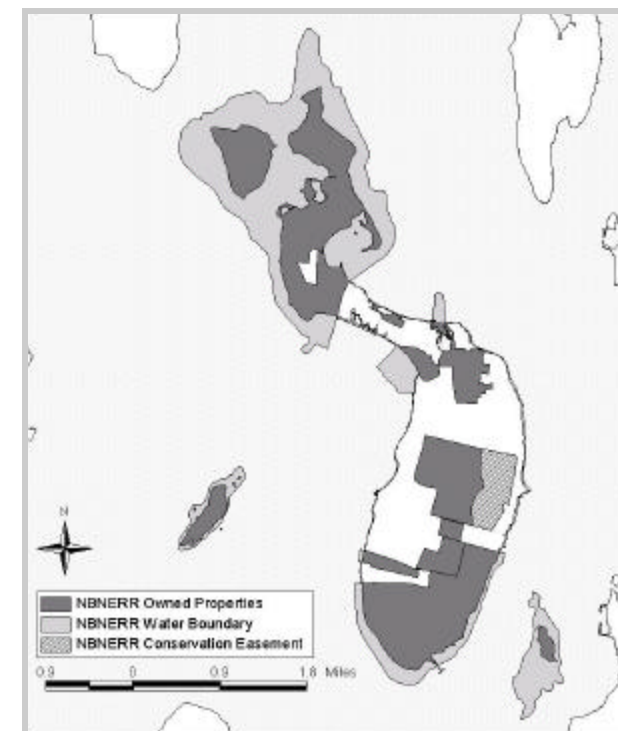
Saturday April 23

Unable to make it to Prudence Island for the seal trip? Then check out the Earth Day Celebration at the Audubon Environmental Education Center (AEEC). This year's theme is "renewable energy". Activities will include storytelling, puppet shows, games, face-painting, rock wall climbing, bluegrass music, and guided walks. This will also be your opportunity to check out NBNERR's traveling exhibit and learn about our osprey partnership project with the Audubon Society of Rhode Island. The AEEC is located at 1401 Hope St. Bristol, RI. For more information, please call AEEC at 401-245-7500 or check out [www.asri.org](http://www.asri.org).

### North End Coastal Cleanup Tuesday May 3

Join us on Prudence Island for our annual north end clean-up in honor of Earth Day. The clean-up will begin at 9:30 am at the north end gate and end at 11:30 am. Following the clean-up we will meet at the NBNERR Learning Center for lunch. Trash bags will be provided. Please bring your own gloves, sun block, and insect repellent. If you would like to participate or want more information, please call Kim at 401-683-6780 ext.1 or email [kim@nbnerr.org](mailto:kim@nbnerr.org).

## Narragansett Bay National Estuarine Research Reserve Celebrating 25 Years



The Narragansett Bay National Estuarine Research Reserve (NBNERR) was designated in October 1980, making us the first reserve in New England and ninth Reserve in the country. NBNERR is a partnership between NOAA and the Rhode Island Department of Environmental Management (RIDEM) and is located in the center of scenic Narragansett Bay.

NBNERR manages approximately 60% of Prudence Island as well as Patience, Hope, and Dyer Islands with property boundaries that extend out into adjacent coastal waters.

The goals of NBNERR are to (1) provide sites for long-term research and monitoring, (2) provide education on estuaries and associated upland habitats, and (3) be stewards of and encourage others to be stewards of our properties.

To learn more about our Reserve visit:  
[www.nbnerr.org](http://www.nbnerr.org)



## Meet the NBNERR Staff



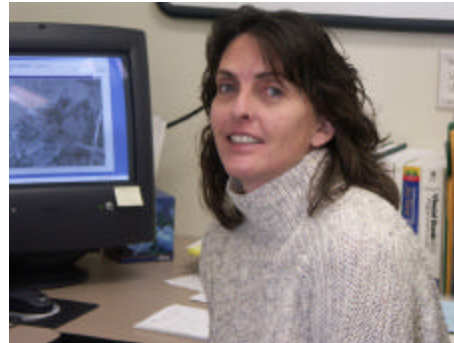
My name is Kenneth Raposa (Kenny) and I am the Research Coordinator here at the Narragansett Bay National Estuarine Research Reserve (NBNERR). I began working at the NBNERR on Prudence Island in 2000 soon after receiving my Ph.D. in biological oceanography from the Graduate School of Oceanography at the University of Rhode Island. Originally, I was hired as a post-doctoral fellow, but by late-2001, I was established as the reserve's Research Coordinator. I bring with me to this position my background and interests in estuarine and salt marsh ecology, nekton (fish and crustacean) ecology and habitat use, and coastal wetland restoration. I live with my wife and two dogs in North Kingstown and commute to Prudence via ferry in winter and by boat from Wickford the rest of the year. My goal in this first edition is to provide you with a general overview of our NBNERR research and monitoring program.

To learn more about NBNERR Research, see page 3.

**If you are interested in doing research and/or monitoring on Reserve property, please contact Ken at 401-683-6780 ext.3 or by email at: [Kenny@nbnerr.org](mailto:Kenny@nbnerr.org)**

My name is Matt Rehor and I am the Reserve's Wildlife Ecologist and Water Quality Technician. I started working at NBNERR in August of 2002, as a water quality technician for the System-wide Monitoring Program (SWMP). After a short time, I also became the Reserve's Wildlife Ecologist. This involves basic research and monitoring of our upland habitats. Currently I'm conducting a weekly wildlife driving survey which helps identify what species are utilizing the island as well as seasonal trends and habitat preferences. All species of mammals, waterfowl, and other select birds are recorded. Seasonally, I have been monitoring our reptiles and amphibians. Early spring through early fall I have a series of transects in various habitats looking at salamanders. These amphibians are good indicators of ecosystem health because of their sensitivity to global change. I have also been marking and recapturing Eastern box turtles to see what habitats are preferred by this species and I've used turtle traps around the island to help us identify which aquatic species are found here including spotted turtles, painted turtles, and snapping turtles. In the last two years I have erected four osprey platforms around the island and have witnessed the osprey's return to Prudence. I also built and installed the osprey platform for the Audubon Environmental Education

Center in Bristol. I will continue to assist the RI Department of Environmental Management's (RIDEM) Division of Fish and Wildlife with annual spotlight counts for deer, help with the deer check-in station, and collect samples for Chronic Wasting Disease. I'm also permitted by RIDEM to possess and euthanize chronically ill deer here on Prudence.



My name is Robin Weber and I have called Prudence Island home all my life. Spending at least part of every summer (except two) on the Island in my youth, I have been a full time resident of Prudence for many years. I earned a Bachelor of Science degree in Environmental Biology from Framingham State College and a Master of Science degree in Remote Sensing and Geographic Information Systems from Colorado State University. I began working part-time at the NBNERR in 2001. My work at the Reserve has included the calibration and deployment of water quality monitoring dataloggers, data management of both water quality and weather data, and various mapping projects. As the staff at the NBNERR continues to grow, my focus will shift from a primary involvement in the System Wide Monitoring Program (SWMP) toward monitoring and stewardship of the Island's habitats and resources.

To learn more about water quality monitoring, see page 3.



## Kid's Corner

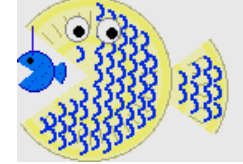
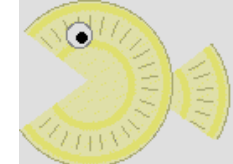
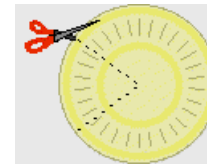
### What is an estuary?

**Estuaries are partially enclosed bodies of water along our coasts that are formed when fresh water from rivers meets and mixes with salt water from the ocean. Narragansett Bay is an estuary.**

**Estuaries serve as nursery grounds for two-thirds of the fish and shellfish we eat!**

**Follow the directions below to make your own fish.**

**Supplies needed:** Paper plate, Scissors, Glue (or tape or a stapler), Googly eyes (optional), Crayons, paint or markers



Step 1: Cut a wedge out of a paper plate. The wedge will be the tail; the hole will be the mouth.

Step 2: Glue (or use tape or stapler) tail to end of fish and glue googly eye on fish (two if it's a flounder!)

Step 3: Color in the fish, drawing scales, lips, and so on. For an extra touch, make a tiny fish out of construction paper and hang from the large fish's mouth with a string or thread.

**Activity from [www.EnchantedLearning.com](http://www.EnchantedLearning.com)**

### Keep Your Eye On the Sky



Photo by Tim Curry



The ospreys have returned to Prudence! First sighted on April 1, the ospreys have been alternating between the two nest platforms in Nag Marsh.

Nesting platforms with secondary perches are now at several locations around the island including Nag Marsh, Coggeshall Cove, and Potter's Cove.

Based on state records, 2004 marked the first year ospreys nested successfully on Prudence Island in over 30 years.

Typically, ospreys will return to the same location to nest the following season, so watch the Nag Marsh platforms closely.

Two young ospreys fledged their nest during the third week of August 2004. The young will remain in their wintering grounds until their 3rd summer when they are ready to breed. Amazingly, they return to the same general area where they were born.

To learn more about the Prudence Island Osprey Project, please contact Matt Rehor at: 401-683-6780 ext.7 or by email at: [matt@nbnerr.org](mailto:matt@nbnerr.org)



## Research

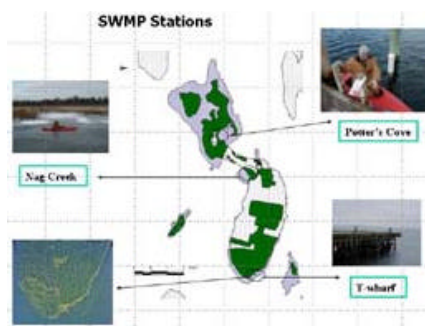
The NBNERR was established in 1980 to provide a protected natural setting for conducting estuarine research, monitoring, and education with the ultimate goal of improving coastal stewardship and management. Towards that end, all 26 reserves in the system, including ours, support an active research program under the guidance of a Research Coordinator.

The staff members at the reserve that work on research and monitoring efforts include myself, Robin Weber (geographic information systems and remote sensing), Matt Rehor (water quality and wildlife), and Tom Kutcher (natural resources). Some of the projects that we are working on as a staff include restoring the Potter Pond salt marsh at the north end of Prudence Island, monitoring wildlife, mapping vegetation, monitoring water quality and nutrients, and conducting baseline vegetation surveys on Prudence. We are currently developing a Site Profile which will be completed by spring 2006. This document will be an ecological description of NBNERR and Narragansett Bay to help researchers, students, and the public to better understand our site. We also recently submitted proposals to collaborate with other agencies to map eelgrass throughout the bay and another to examine habitat use by box turtles here on Prudence Island.

Research and monitoring is often conducted at our reserve by visiting scientists and students. Easily the most active visiting researcher is Dr. Mark Bertness from Brown University. Mark and his colleagues and students have been conducting a variety of projects examining salt marsh ecology and the ways in which human activities are affecting our marshes. You are probably all aware of this work as you have seen his miniature greenhouses and cages in Nag marsh over the last few years. These are part of experiments designed to determine the interactive effects of sea-level rise, eutrophication, and global warming on salt marshes, and also to examine what happens to marshes when top predators are removed. Aside from Mark, other researchers that are currently working at NBNERR include those from the Environmental Protection Agency, Roger Williams University, the University of RI, and others.

Of course, this is just an introduction to the research occurring at NBNERR. I look forward to sharing more detailed descriptions of our projects with residents and visitors of Prudence Island so that everyone understands the excellent scientific research that is happening here.

## System-wide Water Quality Monitoring Program



The first program designed and adopted by the National Estuarine Research Reserve System (NERRS) was intended to provide baseline data for the investigation of both short-term variation and long-term trends in estuarine systems as a whole. The System Wide Monitoring Program (SWMP, pronounced "swamp") began in 1995 with a requirement of all Reserves to deploy and maintain two water quality dataloggers (or sondes). The requirements of SWMP have been expanded over the years and now include the maintenance of four water quality dataloggers, a weather station, and monthly nutrient sampling. This represents well over a hundred data collection stations throughout the Reserve system. Additional phases of the NERRS SWMP will include standardized biological monitoring and real-time data access.

With 26 Reserves located throughout the coastal regions of the continental United States, the Great Lakes, Alaska, and Puerto Rico, all estuarine types are being represented. Because of SWMP it is now possible to compare between estuarine types, regionally within estuarine types, and year to year variation within a single estuary. The measured parameters include various water quality parameters (temperature, salinity, pH, dissolved oxygen, turbidity, and chlorophyll), weather parameters (air temperature, wind speed, wind direction, barometric pressure, relative humidity, photosynthetically active radiation, and rainfall), and nutrient levels (ammonium, nitrate, nitrite, silicate, and ortho-phosphate). Taken together these measured parameters make it possible to investigate the interconnectivity of meteorological events, the frequency and occurrence of both man-made and natural inputs to the system, and the ways in which these occurrences impact the estuarine environment. One of the greatest strengths of SWMP is a consistency in methodology at all Reserves which makes these types of comparative studies and investigations possible.

This article was only intended as an overview of the NERRS System Wide Monitoring Program. Please check future additions of this newsletter for a more detailed description of the Narragansett Bay NERR SWMP and other water quality monitoring efforts including the Bay Window Program and the Integrated Ocean Observing System (IOOS).



## Education

Education and Community Outreach at the Reserve is governed by the following goal: To increase the understanding and appreciation of Narragansett Bay and the Narragansett Bay Watershed, associated upland habitats, and estuaries in general. In order to accomplish this goal, NBNERR works to (1) provide hands-on experiences, accurate, up-to-date information, and educational products related to Narragansett Bay and issues that impact the Narragansett Bay Watershed and properties of the Narragansett Bay National Estuarine Research Reserve; (2) promote understanding among coastal decision-makers within the Narragansett Bay watershed and the Northeast by providing useful materials, tools and techniques that enable them to make better informed management decisions; and (3) collaborate with other organizations to develop and implement estuarine education and interpretation programs. This education effort is made possible through a partnership with the Audubon Society of Rhode Island (ASRI). To learn more about ASRI, please visit their website at [www.asri.org](http://www.asri.org).

The Reserve offers education programs throughout the year both on and off site including seal tours, coastal plant walks, a National Estuaries Day celebration at Mystic Aquarium and more. The majority of our on-site programming is offered during the summer months with the help of Cheryl Tavares, a seasonal naturalist with the RI Department of Environmental Management and Jordana Civetti, an education assistant hired through the Audubon Society of Rhode Island. Watch for the summer calendar of events in the next issue of NBNERR News. The NBNERR Learning Center, located on the south end of Prudence, houses exhibits on the history, geology, plants, animals, and habitats of Prudence Island as well as seasonal exhibits by islanders, local artists, and partners such as the Prudence Island Historical Society.

Other education efforts of the Reserve include the Narragansett Bay Watershed Coastal Training Program (NBWCTP—see description below), teacher workshops, nature camp, participation in large scale events such as the RI Spring Flower & Garden Show and Earth Day, the Reserve website: [www.nbnerr.org](http://www.nbnerr.org), coastal clean-ups, a one-pager series on stewardship efforts, brochures, other educational products, and more.

Tell us what you would like NBNERR to offer through our education program. Please complete our survey at : <http://www.surveymonkey.com/s.asp?u=86640950036>

## NBWCTP

**What public programs would you like to see offered at NBNERR?**

**Help us develop our community education outreach plan by participating in our on-line survey.**

**Go to:**  
**<http://www.surveymonkey.com/s.asp?u=86640950036>**

**Survey opened: April 15th**

**If you would like a hard copy of the survey, please contact Kim Botelho at 401-683-6780 ext.1 or by email at [kim@nbnerr.org](mailto:kim@nbnerr.org).**

**To learn more about NBNERR please visit our website at:**

**[www.nbnerr.org](http://www.nbnerr.org)**

The Narragansett Bay Watershed Coastal Training Program (NBWCTP) is one of 26 Coastal Training Programs being implemented throughout the National Estuarine Research Reserve System. It is a national effort focused on providing coastal decision-makers with the information and tools they need to make better management decisions in order to ensure the health of our bays and watersheds. Coastal decision-makers, as identified through this program, are individuals who through their profession or volunteer position make decisions that directly impact the health of the bay (estuary) and watershed. These may include municipal staff and volunteers, elected officials, land use planners, regulatory personnel, fishermen, landscapers, etc. These individuals may deal with non-coastal, upland issues within the watershed that will inevitably impact the health of the estuary.

NBWCTP's goal is to see municipalities within the Narragansett Bay Watershed applying diverse techniques towards protecting and maintaining the quality of Narragansett Bay's natural resources. The NBWCTP will strive to achieve this goal by developing educational programs and products based on priority issues identified by decision-makers throughout the Narragansett Bay Watershed. NBWCTP is a partnership effort between NBNERR, RI DEM, RI Sea Grant, Coastal Resources Management Council, the University of Rhode Island, RI Rivers Council, GrowSmart RI, the Audubon Society of Rhode Island, and others. An advisory council will soon be established to determine the future direction of NBWCTP.

To learn more about this program, please visit: [www.nbwctp.org](http://www.nbwctp.org).

Stewardship at NBNERR is an integrated program combining land management, research, monitoring, education, and community-based efforts. The entire Reserve staff consults regularly on stewardship and natural resource issues in order to promote healthy ecosystems within the Reserve boundaries, in Narragansett Bay, and in the Narragansett Bay Watershed.

### What is Stewardship?

**Stewardship** is managing the land and its resources. At NBNERR, examples of stewardship include restoration projects, protecting rare/threatened/endangered species and habitats, control of invasive species, long-term research and monitoring projects that assist us in better resource management, trail maintenance, beach clean-ups, and providing the community with information and tools that will help them to protect the environment.

Stewardship takes on many forms here at the Reserve, such as the protection and enhancement of natural resources like rare plants, animals, and habitat types; the monitoring and inventorying of landscape cover and its change; interpretation of research and monitoring data for management applications and for transfer of information to coastal decision-makers and educators; the restoration of degraded habitats; and the control of nuisance and invasive species. Subsequent issues of this newsletter will feature articles that describe specific stewardship projects, our involvement in them, and some information on how you may be able to get involved. I hope you will enjoy reading about how we are trying to maintain and restore health to our beautiful bay, its islands, and its watershed, and will consider joining us in our enthusiastic stewardship efforts.

### Matt's Wildlife Hotspots

Matt Rehor, NBNERR's Wildlife Ecologist, monitors a variety of wildlife species during weekly surveys of Prudence Island. Matt will provide you with seasonal hotspots for wildlife in each issue of NBNERR NEWS. For more information please contact Matt at 401-683-6780 ext.7 or by email at: matt@nbnerr.org



#### Site 1: Mill Creek Drainage

Species: Red-breasted Merganser  
Brant  
Canada Goose  
Common Goldeneye  
American Black Duck  
Mallard  
American Crow

#### Site 2: T-Wharf North

Species: Harbor seal  
Red Fox  
Raccoon  
Mink  
American Black Duck  
Mallard  
Canada Goose  
Common Goldeneye  
Mute Swan

### Look What's Coming...

#### Results of the Potter Pond Restoration

#### Meet Henry, our Graduate Research Fellow

#### Bay Window

#### Meet New Reserve Staff

#### Summer Calendar of Events

#### Rare plants of Prudence Island

#### And more...

### Wish List

Fishing poles and other fishing gear  
Canoe and paddles  
12—15 passenger van  
Foam core  
Laminating film

Donations for NBNERR are accepted through our partner in education, the Audubon Society of RI. To make donations, please contact Kim Botelho at: 401-683-6780 ext.1 or by email at: kim@nbnerr.org



Hello, my name is Kim Botelho and I have been working as Education Coordinator of NBNERR since August 1997. I received a Bachelor of Science Degree in Environmental Science with a Biology Concentration from the University of Dubuque in 1995 and have been in the environmental education field ever since. At NBNERR my responsibilities include coordinating on and off-site education programs, exhibit design and installation, overseeing the Narragansett Bay Watershed Coastal Training Program, website design and maintenance, etc. Although I have an interest for all things in nature including marine life, insects, mammals and more, I am particularly interested in RI flora. I am currently enrolled in the Native Plant Studies program offered through the New England Wildflower Society (NEWFS), serve on the education committee of the RI Wild Plant Society, monitor rare plants for NEWFS and monitor invasive plants for the Invasive Plant Atlas of New England. I have lived year round on Prudence for over three years now and love the opportunity it provides for nature and scenic photography, wildlife viewing, and long walks with my chocolate lab.

To learn more about NBNERR education, see page 5.



Hi. I'm Tom Kutcher, the Reserve's Natural Resources Specialist. I'm a native Rhode Islander and I have been living close to Narragansett Bay just about my entire life; on Warren River as a kid, in Bonnet Shores and Narragansett Pier while in college, and currently just south of Wickford on Bissell Cove and Hamilton harbor, where, if I had a better arm, I might be able to chuck a rock into the Bay from my yard. I continue a lineage that has depended on the Bay for sustenance during hard times, and for recreation during easier ones. My decision to become involved in environmental science stemmed from my feeling that the Bay has provided for me and my family for generations, and that I'd like to return the love by trying my best to give something back. Since I greatly enjoy being on our beautiful bay and working with other dedicated, caring people, my position at the Reserve was a great fit for me. As Natural Resources Specialist, I work on incorporating a natural resource and stewardship component in and around our other programs and represent the stewardship function at the national level by attending meetings and serving on system-wide stewardship committees.

To learn more about NBNERR stewardship, see page 6.

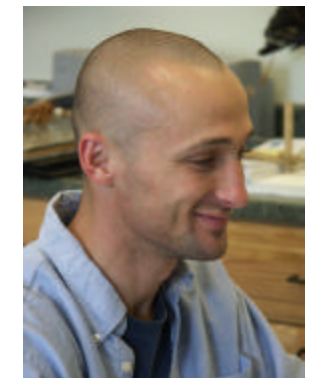
### A Fond Fairwell.... NBNERR staff would like to thank:



Roger Greene—Reserve Manager



Allan Beck—Principal Environmental Scientist



Brian McCormick—Coastal Training Specialist

**For their enthusiasm,  
their dedication to the  
environment, and their  
contributions to the Reserve.  
You will be missed!**