

QUARTERLY NEWSLETTER OF THE JACQUES COUSTEAU NATIONAL ESTUARINE RESEARCH RESERVE

LIFE ON THE *edge*

JC NERR Aids Municipalities in “Getting to Resilience”

The Coastal Training Program has continued to improve resiliency in towns up and down the New Jersey coastline.

This work has focused on the use of NJ Floodmapper to explain future risks and hazards posed from sea level rise. The use of mapping products is often the first step in facilitating municipalities through the Getting to Resilience website (www.PrepareYourCommunityNJ.org) which guides municipal leadership in discussing their community’s current and future risk preparedness.

The Resilience team is made up of Lisa Auermuller, Jenna Gatto and Chris Huch. Together, the team has facilitated the Getting to Resilience process with Tuckerton, Little Egg Harbor, Seaside Park, Somers Point, Brick, Highlands, Long Beach Township, Millville, Maurice River, Highlands, Ventnor City, Atlantic City, Atlantic Highlands, and South Toms River.



Above: Jenna Gatto discussing Getting to Resilience.

A busy summer for the Resilience Team has included attending the Ocean, Atlantic, Cumberland, and Cape May County FEMA Resiliency Meetings, hosting a Getting to Resilience “train the trainer” for staff at the NJ Resiliency Network, and presenting the Sea Bright Getting to Resilience Recommendations Report findings during a public community meeting. Conference presentations were made at the NJ Emergency Preparedness Association Conference with the National Weather Service and at the NJ Wildlife and Conservation Conference. Additionally, resilience staff has been asked to become part of the Shore Region and Delaware Bayshore Region Threat and Hazard Identification and Risk Assessment (THIRA) and a State Preparedness Report (SPR) workgroup.

The Resilience Team at JC NERR continues to plan additional resiliency assistance with communities, ensuring a continued busy schedule in the months to come.



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MANAGERS MESSAGE

A great deal of change is occurring within the National Estuarine Research Reserve System. Our federal partner, NOAA, has completed a major reorganization of its coastal programs that are now consolidated in the Office for Coastal Programs. This will result in more staff resources being made available to support the reserves, along with improved opportunities for collaboration and coordination. In addition, the University of Michigan has been selected to administer the NERRS Science Collaborative, a source of competitive grant funding for the reserve system. A request for proposals is expected to be announced by the end of January 2015. NOAA also has placed more emphasis on regional collaboration among its coastal partners. As a result, JC NERR staff will meet with its Mid-Atlantic counterparts at the end of January 2015 to develop collaborative program and funding opportunities, most of which will focus on sea level rise, community and coastal resilience, and integration of long-term sampling programs. Finally, a new reserve is expected to join the system in 2015-Hawaii. The new site will be located at Kaneohe Bay on the island of Oahu and administered by the Hawaii Institute of Marine Biology. Given the interest of other states to join the reserve system (i.e., Connecticut and Louisiana), efforts also have begun to develop a blueprint for build-out of the reserve system including a review of selection criteria, core programs and associated costs.

As we move into 2015, reserve staff will devote much time and attention to expand the community resilience programs, integrate the monitoring program with other long-term data sets centered on the Mullica River-Great Bay system, advance the Tucker-ton Peninsula as a “sentinel site” for environmental change, and identify suitable sites for habitat restoration. These initiatives will be described in detail in the next iteration of the JC NERR Management plan which will cover the years 2015-2019.

Mike De Luca



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Volunteer Involvement with Research and Field Sampling

Volunteers have been involved with an assortment of research projects this past spring and summer within the Reserve. This past April, JC NERR volunteers again joined Stockton College students and local commercial crabbers to assist in processing crab pots for a 2 year funded study 'Derelict Crab Trap Removal in the Mullica-River Great Bay Estuary'. The goal of this project was to identify and map lost crab pots in the Mullica River-Great Bay Estuary with sonar surveys, remove and dispose/recycle retrieved crab pots, return usable pots to the commercial crabbing community, identify areas of frequent crab pot loss, and educate recreational and commercial fisherman and boaters about crab pot loss and hazards of this type of marine debris. With over 1,000 crab pots retrieved, JC NERR volunteers assisted with breaking down, recycling and the inventory and processing of pots for data - including condition, cause of loss, weight and fish or crab bycatch.

As the Rutgers University Marine Field station (RUMFS) continues in its third year of larval fish sampling in the Barnegat Bay under the NJ DEP's 10-point plan to address the ecological health of the Bay, volunteers have continued to show immense



From right to left: A crabber retrieves a lost crab pot from the Mullica River-Great Bay Estuary; Retrieved crab pots stacked and ready for processing (Photos courtesy of M. Reding and K.. Unkert); Volunteers examine a Northern puffer fish (*Spoeroides maculatus*) caught at Graveling Point. (photo courtesy of Terry Moore); Volunteers carry the seine net out to a designated sampling area at Graveling Point (Photo Courtesy of Steve Luell)

support for this research initiative that takes place during nighttime hours. Larval fish sampling is done using a plankton net, and takes place at Little Sheepshead Creek in the Mullica River-Great Bay estuary and three additional sites in the Barnegat Bay - Oyster Creek Generating Station, the Rt. 72 bridge in Manahawkin, and Rt. 37 Bridge in Toms River.

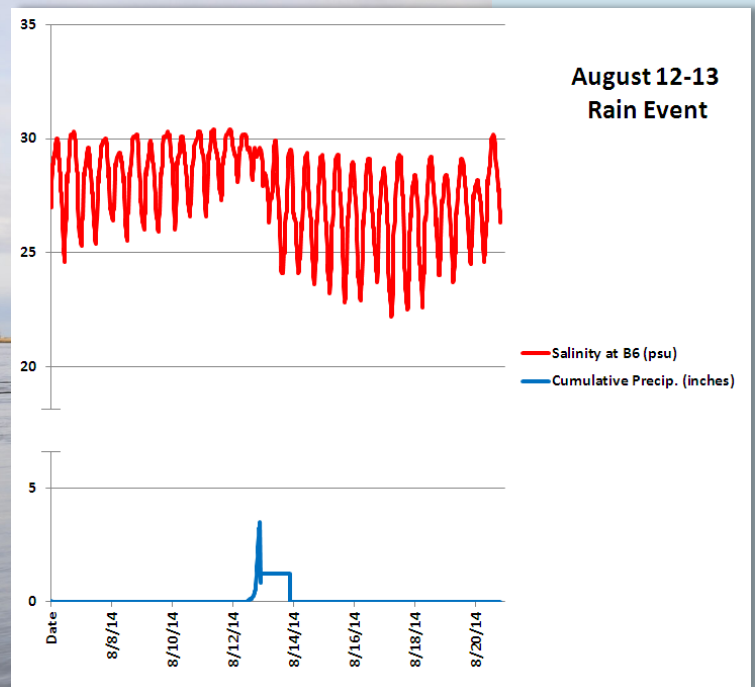
Field and lab work can take up to 6-8 hours a night with 4 crews of technicians and volunteers sorting samples to extract larval fish. Sampling this past April garnered 61 combined total volunteer hours in one night - thank you to all of our volunteers who provide support and for your continued dedication to the project!

As part of a RUMFS research project initiated in Summer 2012, volunteers again began seining this May in the Mullica River-Great Bay estuary off of Great Bay Blvd in Tuckerton and at Graveling Point in Little Egg Harbor. Seining collects juvenile fish and crabs, and data collected are added to RUMFS' long-term data set for analysis. This past summer we had a volunteer lead who head up the field work portion of seine sampling - thanks to Alison Shepherd who enthusiastically took on a leadership role for this project! And thank you to all the volunteers who worked through heat, gnats & greenheads to come out and seine! As always, we appreciate all of the time and effort that our volunteers dedicate to the Reserve, and we look forward to working with our volunteers this coming winter! -Kim Capone, Volunteer Coordinator

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The JC NERR Captures the Effects of a Significant Mid-August Rain Event

Light sleepers (and even not-so-light sleepers) may recall the midnight deluge that soaked the state, inundated low-lying properties, and even flooded out some roads and highways overnight August 12-13, 2014. The JC NERR's meteorological station, located near the Garden State Parkway overpass, recorded some impressive precipitation values, eventually tallying the rainfall for the event at 119.6mm (4.7 inches). Even more noteworthy were the lingering effects caused by the introduction of all that rainwater into the Mullica River watershed. The JCNERR's B6 water-monitoring station, located just inside Little Egg Inlet, documented depressed salinity values not only during the event, but for over a week after as the supply of fresh water percolated through sediments, into the river, and eventually to the sea. Explore these and other System-Wide Monitoring Program data at www.nerrsdata.org



Above: Water monitoring station B6 with the Salinity and Precipitation data it collected on August 12-13, 2014.

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A Busy Summer at Life on the Edge

This summer has brought record traffic through the JC NERR Life on the Edge exhibit. The recent food truck festival, as well as many festivals around the year, brought thousands of people to the area. The Tuckerton Seaport and Baymen's Museum serves as the "front porch" where culture and eco-systems are shared through exhibits, programs, and people.

The Seaport and the JC NERR help build a stronger community by demonstrating shared responsibility by bringing environmental and cultural issues to the very people whose way of life is affected by sea level rise, increased storm frequency and intensity, coastal inundation, species range shifts, habitat and shoreline erosion. Natural and man-made environmental changes have molded the area's cultures over time, the people of the region have re-shaped the landscapes, communities, buildings, watercraft, tools, and traditions in response to their visions, and economic needs. The residents of the region face challenging issues: increasing population and development of rural landscapes; recreation superseding trade and seafood harvesting; traditional communities dispersing and ways of life disappearing; newcomers arriving with diverse backgrounds, interests, and expectations. These transformations are redefining the way citizens interact with the estuary. Today the people who use and enjoy the coast's natural resources are a diverse group: business people, watermen, cranberry and blueberry farmers, lifelong residents, newcomers, recreational boaters and fishers, developers,

Together the JC NERR and Seaport have been involved in the durability of heritage and an ethic of stewardship and sustainability of the natural resources of our shared coastal community. The Seaport and the Life on the Edge exhibits are a dynamic representation of the people and place unique to the Jersey Pine Barrens and Great Bay/ Barnegat Bay providing a seamless connection between the coastal community's natural and cultural history.

and tourists. They hold widely varying opinions over which of the natural and cultural resources are most important and worth preserving. What shapes their views are their respective histories, with each group seeing the area's challenges and solutions through the lens of their own experience. What will bring them together is a better understanding of those varied experiences and perspectives.

Appreciation of how our lives are intertwined with the benefits the estuary can guide everyone to take responsibility and to initiate actions that support local environmental, cultural and sustainable practices. A museum is a trusted

medium, and the public is more apt to believe what they learn there than in other forms of media. Innovative approaches to community outreach have been the hallmark of the Seaport offers numerous points of entry across a variety of topics and time periods while seeking to serve the diverse learning needs of many audiences. "The history of the Seaport's development parallels that of the area's history- it's a tale of determi-

nation, adaptation, survival and excellence. The Seaport has thrived as an outstanding example of an American "community museum"- a place for locals and newcomers to gather, socialize, cooperate and learn about the surrounding landscape, seasonal cycles, attitudes and way of life. A broadening community of stakeholders, recognize the seaport's importance as a cultural anchor for the region and as an essential instrument to preserve the fast-altering traditions of life on the Bay."* Alongside the Seaport, the JC NERR strives to be a catalyst for stewardship of our shared coastal community.

Ida Louise Scott, Interpreter

From the Interpreter

Visit the Life on the Edge Exhibit at the Tuckerton Seaport!

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UPCOMING PUBLIC PROGRAMS

ECOLOGICAL EVENINGS

Thresher Sharks!

February 10, 2015 7:00 -8:00 PM

Hear about tracking Pelagic Thresher Sharks in the Philippines from JC NERR Researcher Tom Grothues. These sharks live deep in the open sea, but they regularly make early morning visits to one tiny reef jutting up from the seafloor to a depth that divers can reach them and attach tags. Tracking and video close-ups helped reveal the ecological importance of this place.

Jersey Shore Folklife

March 26, 2015 7:00 -8:00 PM

The Jersey Shore Folklife Center documents, supports, and presents the diverse communities and traditions of the Jersey Shore and the Pinelands. Jaclyn Wood, Program Director, Tuckerton Seaport and Director of the Folk Life Center, works to keep the arts and heritage of the Barnegat Bay region alive. Come discover the how and whys of working with community members to preserve Jersey Shore traditions.

Shore Birds Citizen Science

April 28, 2015 7:00 -8:00 PM

Spring Migration along DE Bay is a spectacular event with hundreds of thousands of shorebirds. The southbound migration during Autumn is much different. Spread out over several months, it is just as critical to the survival of shorebirds as the Spring migration. Educator and citizen scientist Ron Smith will share sightings, stories and data from 10 years of monitoring shorebirds on North Brigantine Beach. Come as a participant, a fellow conservationist, a birder and, perhaps, a citizen science recruit.

History of Research in the Barnegat and Great Bays as Seen from Rutgers University Marine Field Station and its Predecessors

May 21, 2015 7:00 -8:00 PM

This presentation will chronicle the history of research in

Barnegat and Great Bays and the facilities involved from the late 1880s to the present. Some of the earliest estuarine research conducted in the U.S. will be described from when the facility served as an active lifesaving station to its current use as a research and education facility of Rutgers University and the JC NERR. Speaker: Ken Able

FAMILY FUN

Something Smells Fishy

March 6, 2015 7:00- 8:00 PM

Spring is coming! What better way to celebrate than a fun filled fishy evening! We'll discover the fish that live in Great Bay and the nearby ocean. We'll explore how they survive and are adapted to specific habitats. You'll also get the chance to try your hand at fish printing. Fun for the whole family.

Creatures of the Muck

May 7, 2015 6:30-7:30 PM

Some say mud, some say muck; researchers say sediment. Whatever you call the estuary and ocean floor it hides loads of life. Join us as we explore the creatures of the muck. We'll collect, discover and identify a variety of sediment dwellers with the help of Rutgers University scientist Rose Petrecca who studies these creatures.

Build A Better Backyard Series: Create Your Own Pollinators Garden

April 18, 2015 10:00-11:30 AM

Worldwide, approximately 1,000 plants grown for food, beverages, fibers, spices, and medicines need to be pollinated by animals in order to produce the goods on which we depend. Huge declines in these vital species are being observed. How can you help? Plant a pollinators garden. We'll give you the know how, resources, and materials to get you started on creating your own beautiful garden that both you and the pollinators will enjoy.

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LUNCH AND LEARN SERIES

Horseshoe Crab Research at the Center for Aquatic Sciences

January 14, 2015

Join us for this unique opportunity to learn from the next generation. Teen Interns from the Center for Aquatic Sciences at Adventure Aquarium will discuss their preliminary research on the role of horseshoe crab larvae in coastal and estuarine food webs of South Jersey.

Optimal Management of Beach-Nesting Bird Habitats in the Wake of Severe Coastal Storms

February 11, 2015

Recovery of threatened beach-nesting bird (BNB) populations is inhibited by a lack of suitable habitat as a result of coastal armoring and significant human disturbance. Severe coastal storms can create additional nesting habitat, but preservation of these areas are often overlooked by efforts to "restore the shore." We modeled pre- and post-Sandy habitat suitability for four BNB species, and we discuss how these data can be used to protect critical habitats and improve coastal resiliency through the promotion of functional beach ecosystems. Speaker: Brooke Maslo, Assistant Research Professor, Rutgers University

History of Decoys with Grave Conrad

March 11, 2015

Been attending Lunch n' Learn and found yourself admiring the decoys? Here's your chance to learn more. Join Seaport Vice President and former President of the New Jersey Decoy Collectors Association Grove Conrad, to learn about all about New Jersey decoys and decoy collecting.

RJ Walker

April 8, 2015

The RJ Walker was an iron hulled, paddle wheel US Coast Survey vessel lost after a collision at sea approximately 10 miles offshore Atlantic City light in 1860. The wreck site was identified and confirmed in the summer of 2013. In early 2014 an expedition was put together under the leadership of Steve Nagiewicz of Atlantic City High School and the Explorers Club and Dan Lieb of the NJ Historical Divers Association (NJHDA). Stockton and Vince Capone of Black Laser Learning were asked to contribute to mapping the site with side scan and multi-beam sonars and by remotely operated vehicle (ROV). Speaker: Steve Nagiewicz, Atlantic City High School

Barnegat Bay Hydrology

May 13, 2015

U.S. Geological Survey hydrologist Robert Nicholson will discuss recent advances in understanding water circulation in the dynamic Barnegat Bay ecosystem. Discover how freshwater flows, nutrients, and sediment from tributary streams mix with tidal flows from the ocean to produce valuable and diverse estuarine habitats.

For the most up-to-date information about the JC NERR :



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**Jacques Cousteau NERR &
Jacques Cousteau Reserve— Coastal Training
Program**

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JC NERR Partners

National Oceanic and Atmospheric Administration, NOAA, Office of Coastal Management • Rutgers, The State University of New Jersey • New Jersey Department of Environmental Protection • New Jersey Pinelands Commission • Edwin B. Forsythe National Wildlife Refuge • Richard Stockton College of New Jersey • Tuckerton Seaport • NERRS Science Collaborative • National Park Service

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The JC NERR promotes informed use and management of the Mullica River—Great Bay Estuary through scientific research, education, and stewardship.



JACQUES COUSTEAU COASTAL CENTER

*130 Great Bay Blvd
Tuckerton, NJ 08087*