



# NBEP Quarterly Report

## September 18, 2008

### Report from the Director

The environmental field is chock full of jargon and acronyms like TDR, TMDL, SEPs, and others. But one phrase that has been much discussed lately is ecosystem based management or EBM. EBM is a management approach that seeks to:

- Integrate ecological, social, and economic goals and recognizes humans as key components of the ecosystem.
- Consider ecological- not just political- boundaries.
- Address the complexity of natural processes and social systems and uses an adaptive management approach in the face of resulting uncertainties.
- Engage multiple stakeholders in a collaborative process to define problems and find solutions.
- Incorporate understanding of ecosystem processes and how ecosystems respond to environmental perturbations.
- Focus on the ecological integrity of coastal-marine systems and the sustainability of both human and ecological systems.

Most federal and state environmental programs now acknowledge that these are important principles to incorporate in their work. These principles also largely reflect the ways in which many of the National Estuary Programs (NEP) implement their watershed ecosystem work. The NEPs are the only federal program with a Clean Water Act mandate to identify and address problems in the 28 Congressionally-designated NEP watersheds and also to engage stakeholders in solutions for ecosystem problems.

The close relation of NEPs and ecosystem based management is one of the reasons that the Packard Foundation considers the NEPs to be a “good practical example of most of the EBM principles and techniques that Packard seeks to promote.” Recent discussions between NBEP director Richard Ribb (who currently serves as chair of the Association of National Estuary Programs) and the Packard Foundation have led to a potential collaboration between the NEP and Packard. Packard funds several EBM regional initiatives in the U.S. and is interested in working with the NEPs on enhancing the NEP EBM techniques. In discussion is a project in which Packard examines the operations of a subset of the 28 NEPs and then provides assistance and resources to more completely incorporate EBM into the way these pilot programs work. Leading the Packard project team is Carl Hershner, chair of the Coastal Management Department at the Virginia Institute of Marine Sciences. Dr. Hershner will hold a session on EBM and the NEPs at the upcoming November 2009 National Estuary Program in New York City. At this session, we hope to finalize the scope of work for the Packard/NEP collaboration.


The NBEP is seeking to be one of the pilot programs involved in the Packard project. We feel that the bi-state Narragansett Bay watershed offers both unique challenges and opportunities for the application of EBM principles and actions. And we have a number of ecosystem-focused planning initiatives already underway such as the revision of the Narragansett Bay Comprehensive Conservation and Management Plan and the development of the R.I. Bays, Rivers and Watersheds Coordination Team’s System Level Plan. Not to mention the individual watershed plans produced by NGOs in the Blackstone, Taunton, Woonasquatucket and other Bay watersheds.


## Program Management



<p><b>Update on Status and Trends and plans for Public Forum</b></p>	<p>A final version of the Status &amp; Trends document is now available. It was distributed to the NBEP Management Committee at its September 2008 meeting and is posted on the NBEP website, <a href="http://www.nbep.org">www.nbep.org</a>. The program is now moving forward on plans to work with partners in developing a February 2008 public forum to present the findings of the report and to facilitate discussion on Bay and watershed issues.</p>
<p><b>National Estuary Program Fall Meeting</b></p>	<p>The USEPA National Estuary Program holds its Fall national meeting in New York City this coming November. Representatives from the 28 programs and EPA staff from Headquarters and the EPA Regions will gather for the meeting which is focused on transferring lessons learned by the programs in technical, administrative and communications work. The NBEP will be presenting information on the Narragansett Bay fish passage projects in urban environments. Also in attendance will be representatives from NOAA's National Estuarine Research Reserves and Community-based Restoration Program to discuss NOAA/NEP collaboration opportunities.</p>

## Science

*Chris Deacutis*



	<p><b>Dissolved Oxygen Surveys:</b></p> <p>The NBEP has been collaborating with Brown University, Save the Bay, and URI to cover the upper half of Narragansett Bay at least monthly for dissolved oxygen surveys that cover the area from the Seekonk (tidal) River to Quonset Point. The NBEP covers the zone from Quonset up to and including Greenwich Bay.</p> <p>This summer, to examine the differences in oxygen distribution in the Bay across several neap (weak) and one spring (strong) tidal periods, we have completed a larger number of surveys than previous (monthly) summers. We completed surveys on the following dates:      June 16 (neap), July 16 (neap), July 25 (moderate neap), July 31 (spring tide comparison), August 14 (neap), August 26 (neap), Sept 11 (neap).</p> <p>Results have indicated summer 2008 was a typical year for hypoxia: some severe hypoxia in the bottom waters of the Seekonk and Providence Rivers and western Greenwich Bay, but no severe events enveloping large areas of the Bay as compared with summer 2006, when severe and expansive hypoxic to near anoxic (no oxygen) events occurred in July and August, covering over half of the Bay.</p>
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	<p><b>Dissolved Oxygen Paper</b></p> <p>A manuscript titled Narragansett Bay Hypoxic Event Characteristics Based on Fixed-Site Monitoring Network Time Series: Inter-Annual Variability, Geographic Distribution, Intermittency, and Spatial Synchronicity authored by Daniel L Codiga, Ph.D.; Heather E Stoffel; Christopher F Deacutis; Susan Kiernan; and Candace A Oviatt. The manuscript was submitted to the journal Estuaries and Coasts. We await review comments.</p>
	<p><b>Helicopter Surveys:</b> The NBEP, in collaboration with Dr. Giancarlo Cichetti of the USEPA AED, have flown helicopter surveys to photograph the macroalgae distribution on the western shore of Narragansett Bay from the Seekonk River to the mouth of the Bay (Point Judith). Flights have been completed for 6/2/08, 7/2/08, and 7/30/08. A red phytoplankton bloom was observed in Greenwich Bay and other areas of the Bay (see fig.). A water sample was taken during the 7/31/08 D.O. survey, and the bloom species was tentatively identified by Dr. Lucie Miranda as <i>Heterocapsa sp.</i>, possibly <i>H. rotundata</i>. This species genera is not normally associated with toxic blooms, and there was no evidence of fish kills in western Greenwich bay during the bloom. A helicopter survey is planned for the third week of September, with the possibility of an October survey depending on weather conditions. Jessica Morgan, our summer intern, has been processing the digital photographs and categorizing macroalgae densities. She has also mapped results for June and July of this summer. She is developing a poster to be presented at the New England Estuarine Research Society in October 2008.</p>
	<p><b>Workshops</b></p> <p>The NBEP is working with Dr. Warren Prell of Brown University to develop a Nutrient Cycling Workshop, likely to be held in the Providence area. We are in the process of contacting potential speakers..</p>
	<p><b>Indicator Development for Gulf of Maine Council on the Marine Environment</b></p> <p>Dr. Deacutis continues to be an active member of the Eutrophication Subcommittee of the science advisory committee for the Ecosystem Indicator Partnership (ESIP), part of the Gulf of Maine Council on the Marine. In addition, he has recently been invited to join the Aquatic Habitats subcommittee. More information on this regional effort is available at <a href="http://www.gulfofmaine.org/ESIPPlanning">http://www.gulfofmaine.org/ESIPPlanning</a></p>
	<p><b>Brown University Center for Environmental Studies</b></p> <p>Dr. Deacutis provided new graduate students at the CES with information on the NBEP as well as potential projects we are interested in. We are pursuing stronger ties with CES students (graduate and undergraduate) and hope they will be interested in future project collaborations with our staff.</p>

	<p><b>Fish Kills August 2008</b></p> <p>A number of fish kills were reported to the RIDEM and made the news. The NBEP field staff investigated 2 such kills in inner Wickford Cove in late August. The first (8/18/08) involved several hundred adult menhaden (<i>Brevoortia tyrannus</i>) found dead along the intertidal shore. We measured oxygen, but found levels adequate for fish. Inquiries to local residents revealed that the kill occurred ~ 4 days prior, coinciding with our August 14 oxygen survey, when we saw low oxygen in western Greenwich Bay. We surmised that low oxygen conditions probably occurred at the time of the kill. Fish had been chased into these shallow inner coves by predatory bluefish.</p>
	<p>A second kill was investigated on August 22, and we found over 1000 fish dead along the shore and bottom of the coves, with a large densely-packed school of adult menhaden being harassed by comorants in the inner cove. Many of the fish looked to be in poor condition, some with wounds on their sides and others with a "ratty look" suggesting they were diseased. Oxygen levels were measured by both our team and a group from URI MERL, who had measured levels in the early AM. Our results indicated that D.O. was low in the early morning that day (~ 0-.8 mg/L), low enough to cause potential deaths, but the later-day values were above lethal levels while fish were still exhibiting ongoing deaths. We suspect a combination of poor health and low (&lt; 2 mg/L) oxygen are involved in these kills. A sample of a live menhaden taken by the RIEM Water Resources staff was provided to Dr. Marta Gomez-Chiarri of URI, a marine pathologist. She indicated the fish was in very poor condition, with possible fungal and other infections. She corroborated the potential that poor health may be part of the fish kill situation taking place in upper Narragansett bay areas.</p>
	<p><b>Light Sensor Field Studies</b></p> <p>The NBEP has loaned out a PAR sensor to RIDEM Water Resources so the TMDL group can complete a salt pond study of light levels and relationship of phytoplankton to nutrient loads for a TMDL.</p>
	<p><b>Science Advisory Committee to the Bays, Rivers , and Watersheds Coordination Team</b></p> <p>A NBEP staff member (Dr. Deacutis) is part of the SAC, and has agreed to coordinate a response to Dr. Ames Colt's (Chair, RI CT) request to provide information on use of Ecosystem Based Management for RI governmental environmental needs. The SAC will provide a review of EBM models available and the level of monitoring data needed to successfully apply such models to fisheries management issues in the Bay.</p>

## Watershed and Community Outreach

Meg Kerr

 <p><b>Coalition for Water Security</b></p> <p>NBEP is a core member of the CWS</p>	<p><a href="http://www.coalitionforwatersecurity.org/">http://www.coalitionforwatersecurity.org/</a></p> <p><b>Funding:</b> The Coalition recently received funding from the Prospect Hill Foundation. Proposals are pending at the Rhode Island Foundation, the Prince Charitable Trusts and the RBC Blue Water Project. The Environment Council of RI Education Fund is the fiscal agent to the CWS. NBEP receives reimbursement from these funds.</p> <p><b>Legislation 2008:</b> Several water management bills were in play during the 2008 session (House Bill 7797, Senate Bill 2637 and Senate bill 2798) but none were passed.</p> <p><b>Municipal Outreach and Technical Assistance:</b> The CWS is working with the Washington County Regional Planning Council on a second regional forum that will likely be held November 12 at Corliss Auditorium. The forum will highlight water management issues from the local perspective, looking at supply and demand in an area of the state served primarily by groundwater resources.</p>
<p>NBEP is a lead partner in the Land and Water Partnership (LWP) – Empowering RI’s grassroots conservation organizations</p> 	<p><a href="http://www.landandwaterpartnership.org">http://www.landandwaterpartnership.org</a></p> <p><b>Infrastructure Collaborative.</b> <u>Donor/Member services</u> – the Salesforce template developed by the Land and Water Partnership has been implemented by the Wood-Pawcatuck Watershed Association, the Barrington Land Conservation Trust and the Woonasquatucket River Watershed Council. Implementation is on-going for the South Kingstown Land Trust. A training workshop is scheduled for October 7.</p> <p><u>Volunteer management:</u> The LWP continues to gather volunteer job descriptions for grassroots organizations, post them on the LWP web site and share them with Save the Bay’s volunteer coordinator. Member grassroots watershed organizations and land trusts were recently asked whether this service was helpful. Responses were enthusiastically in support.</p> <p><b>Workshops/Conferences:</b>  <b>March 21, 2009 – Land and Water Conservation Summit.</b> The date is set, Memorial Union has been reserved and planning for the sixth Summit, jointly sponsored by the RI Land Trust Council, the RI Association of Conservation Commissions and NBEP has begun!</p>
<p><b>Rhode Island Blueways Alliance</b></p>	<p><b>Funding:</b> The Blueways Alliance has received funding from the NE Grassroots Environmental Fund, the RC&amp;D Council, the RI Foundation and REI. The RINHS serves as fiscal agent to the RI Blueways Alliance.</p>

**NBEP is a founding member and lead partner in the Blueways Alliance**



**Paddling into Providence**

**Director Sullivan and his wife discuss the Roger Williams Paddle with Keith Gonsalves, president TMRWC.**



**Watershed Organizations**

**RI Blueways Alliance:** The Alliance incorporated with the State of RI in January 2008. We are reviewing our bylaws which will be adopted this fall/winter.

**PaddleRI:** The June, July, August celebration of paddling the Blueway, PaddleRI, was a huge success. We promoted 14 events and over 200 people participated, paddling on urban rivers, coastal ponds, rural rivers and Narragansett Bay. We plan to make the 2009 paddling celebration even bigger!

**Roger Williams Paddle Trail:** On July 19, the Ten Mile River Watershed Council led the inaugural paddle along the Roger Williams Paddle Trail – from East Providence to the Roger Williams memorial in Providence. DEM Director Sullivan, the Providence Journal’s Peter Lord and others enjoyed this first exploration of the trail. The Blueways Alliance has a grant from REI to document, map and celebrate this trail during the next several months. We will be working in partnership with the John H. Chafee Blackstone River Valley National Heritage Corridor Commission.

**ExploreRI.org:** Over 200 access sites are now available on ExploreRI.org. The site is being expanded up the Blackstone and Taunton Rivers.


**Taunton River Mapping:** NBEP is working with the Taunton River Watershed Alliance on updating and expanding their collection of paddling maps. We are working with cartographer Terry Meyer and interns working with the Alliance.

**Partnering with CRMC:** The Blueways Alliance met with CRMC and was invited to identify areas throughout the state (within the agency’s jurisdiction) where access for paddling boats could be improved. We plan to start with sites in the Providence area. We would also like to provide CRMC with guidance on designing paddle boat access in urban areas and are researching models from other regions.

**Friends of Easton’s Pond:** Citizens on Aquidneck Island who are concerned about pollution of their water supply and closures at Easton’s Beach held an informational meeting in August. NBEP organized a panel presentation of watershed organizations and Save the Bay to discuss the challenges and benefits of a watershed organization.

## Restoration and Communication

Tom Ardito/Lesley Lambert

<p><b>Pawtuxet River Restoration</b></p> 	<p>The Pawtuxet River Fish Passage team has just release an RFP for engineering and design work on the preferred design as selected through a public process conducted over the last year. A partial dam removal is planned that will allow fish to travel up the Pawtuxet to spawning areas upstream.</p>
<p><b>Narragansett Bay Journal</b></p>	<p>The September 2008 NBJ is in production for a broad watershed-wide distribution through newspaper inserts. This issue marks the transition from an all-paper NBJ to a mix of one hard copy issue and three digital issues per year.</p>
<p><b>NBEP Web site</b></p>	<p>The NBEP is working to revamp the NBEP website to accommodate new and enhanced uses. The Bay &amp; Watershed status and trends reports will reside on the site as well as the digital issues of the Narragansett Bay Journal. The program is also working on email communications methods that will bring readers to the online information in an effective and user-friendly manner.</p>

*The Narragansett Bay Estuary Program is one of the 28 programs in the National Estuary Program (NEP). The NEP is funded under Section 320 of the Clean Water Act and is administered by the U.S. Environmental Protection Agency with state host agencies University of R.I. and RIDEM.*

*For more information on the NEP, visit [www.nationalestuaries.org](http://www.nationalestuaries.org) and [www.epa.gov/owow/estuaries](http://www.epa.gov/owow/estuaries). All NBEP meetings are open to the public. To contact the NBEP, call (401) 874-6233 or visit [www.nbep.org](http://www.nbep.org)*