



NBEP Quarterly Report

December 2011

NARRAGANSETT BAY
ESTUARY PROGRAM

Communications & Outreach



The December Journal, which published on December 7, features articles about solid waste including the Los Angeles “Trash TMDL”, updates on RI Resource Recovery, a primer on producer responsibility, HEALTH’s pet waste study and much more. NBEP has completed 4 excellent on-line NBJ editions for 2011 with support from the program’s many partners. The 2012 schedule is: Spring (March 5, Issue #22) with a theme of “Celebrating the History of the Narragansett Bay”; Summer (May 7, Issue # 23) featuring articles on monitoring and Indicators, Fall (Sept 10, Issue #24) likely focused on restoration and climate change and Winter (Dec. 4, Issue # 25). To view the latest issue go to www.nbep.org/bayjournal-currentissue.html.



2012 Watershed Counts Presentation:

Watershed Counts will present at the RI Legislature on April 24 in coordination with ECRI Lobby Day. The presentation will highlight several important indicators that will be selected with your assistance. Watershed Counts also plans to present in the spring in Massachusetts. Plans for this presentation are still being developed.

Funding:

Watershed Counts received two grants over the summer. A two-year EPA Healthy Communities Grant will support development of freshwater quality indicators. A one-year Rhode Island Foundation grant will support the continued development of the invasives indicator as well as new indicators for marine water quality, protected land and an economic indicator.

Website:

www.watershedcounts.org. Watershed Counts has created a password protected portion of the website for posting meeting agendas/minutes and background materials. Click on “Contact Us”, “Login”. Username: watershed Password: narrbay.

Indicator Updates: Each Watershed Counts indicator listed below includes the name of a lead entity in parenthesis. Lead organizations were selected because of their expertise in the indicator area and their willingness to provide leadership for Watershed Counts. As always, if you are interested in more active participation, please do not hesitate to let us know. We welcome all interested participants!

Indicator Updates:

Each Watershed Counts indicator listed below includes the name of a lead entity in parenthesis. Lead organizations were selected because of their expertise in the indicator area and their willingness to provide leadership for Watershed Counts. As always, if you are interested in more active participation, please do not hesitate to let us know. We welcome all interested participants!



* **Climate Change** (RI CRMC, Jim Boyd). The RI Climate Change Commission (RIGL 23-84) will have its first meeting in December. Watershed Counts will build from the Commission’s early work and will convene a workshop to consider the Climate Change indicator assessment in early 2012.



* **Beach Closures** (RI HEALTH, Amie Parris). Watershed Counts hosted a workshop on Beach Closures on October 27, 2011. The presentation, agenda and meeting report are posted on Watershed Counts. The number of beach closure events decreased in 2011. Updated charts and data tables will be included in the 2012 Watershed Counts report.



(Indicator Updates Continued)



* **Imperious Cover** (RI DOT, Allison Hamel). Watershed Counts is considering highlighting progress on Low Impact Development (LID) projects. The RI Stormwater Solutions web site includes an inventory of LID projects that can be used to track progress. We welcome any additional suggestions for tracking changes in imperious cover.



* **Freshwater Flow** (RI DEM, Alisa Richardson). Watershed Counts is exploring the development of stream flow metrics from USGS gage data.



* **Invasives** (RINHS, David Gregg). A list of invasive indicator species (freshwater, terrestrial and marine) ordered by prevention and management goals is being developed with input from a wide range of stakeholders. Watershed Counts will host a workshop on January 12, 2012 to review, discuss and finalize the list and finalize a status/trends and management metric. The metrics will be vetted through on-line polls before presentation in April.



* **Protected Land** (TNC, Kevin Ruddock). Stakeholders with expertise in land protection (Audubon, TNC, RIDEM, RI Land Trust Council) will meet on November 23 at 1:00 PM at TNC to identify how to describe a protected land metric using available data.



* **Natural Resource Economics** (Save the Bay, Topher Hamblett). Watershed Counts partners asked for metric(s) to characterize some aspects of the economic value of the Narragansett Bay natural resources. Watershed Counts will host a workshop on December 19 from 10 AM - noon at Save the Bay to explore this indicator.



* **Marine Water Quality** (NBNERR, Bob Stankelis). A subcommittee of the RI Environmental Monitoring Collaborative formed to work on coordinating marine monitoring will assist with development of marine water quality indicator(s). NBNERR is starting by compiling a comprehensive list of available data and then convening a working meeting in mid-January with an initial indicator for review in March.



* **Freshwater Quality** (Watershed Associations -- WPWA, Denise Poyer; WRWC, Alicia Lehrer; TRWC, Carolyn LaMarre; BRC, Tammy Gilpatrick). The freshwater quality indicator working group was briefed on Rhode Island's assessment methodology for the RI Integrated Report (previously called the State of the State's waters).

Program Planning & Management

Narragansett Bay Region Plan:

A revised approach to the development of the Narragansett Bay Region Plan (CCMP update) has been reviewed and accepted by the NBEP Executive Committee. The NBEP, working with the R.I. Statewide Planning Program and the R.I. Bays, Rivers and Watersheds Coordination Team, has invested significant effort in the development of a plan that would integrate and meet NBEP, RIBRWCT and SPP planning requirements in a single document. This work has provided many benefits in that it has informed different planning efforts, engaged Massachusetts stakeholders in bay ecosystem planning, and increased connections and communication between the project partners, watershed stakeholders and state agencies. However, as this effort has progressed, it has become clear that differences in scale, scope and timing, as well as bi-state coordination challenges, are preventing that intended single product at this time. The project partners are committed to integrated planning and will continue working in that direction but, due to factors mentioned above, have agreed to complete this iteration of the plan to meet federal Clean Water Act - National Estuary Program requirements and timelines. The partners recognize that this is an iterative process and that this plan is a good first step toward the goal of better integration. The NBEP will provide a revised plan completion schedule and outline at the December 2011 Management Committee meeting.

NEP Briefing for EPA Office of Water Director, Nancy Stoner:

EPA's Office of Water requested a briefing by representatives of the National Estuary Programs (including NBEP Director Richard Ribb) on their work and accomplishments in implementing Clean Water Act major programs. Richard serves on the Executive Committee of the Association of National Estuary Programs and is periodically asked to participate in EPA, Congressional and other federal organization meetings. The briefing will take place on December 9, 2011. Richard will also attend meetings regarding the NEP that day with Office of Management & Budget staff and with staff from Senator Jack Reed's office and the Senate Committee on Environment and Public Works.

Restoration

Pawtuxet River Restoration:

Over the past quarter, NBEP and its partner Pawtuxet River Authority worked on completing the Pawtuxet River restoration project following demolition of Pawtuxet Falls Dam. On September 30 we hosted a public ribbon-cutting event attended by Gov. Chaffee, Sens. Reed and Whitehouse, Cong. Langevin, and leaders of most of our partner organizations. In October we oversaw installation of native wetland plants along several miles of riverbank. At present we are focusing on certifying completion of the dam removal and plantings through oversight of EA Engineering, and are continuing to support the PRA on all aspects of fiscal management. Certifications for payment require extensive work in order to meet agency requirements. We are now working to identify additional restoration opportunities on the lower Pawtuxet. For example in November we submitted a pre-proposal to CRMC to connect the Pawtuxet restoration with the RWP Ponds restoration by restoring Belafonte Brook in Cranston and Providence.



Pawtuxet Dam removal ribbon-cutting event.

Roger Williams Park Ponds Restoration:

NBEP continues to support the City of Providence in an innovative project to restore water quality to Providence's most important urban ponds complex. Our work this quarter has focused on overseeing development of a restoration master plan, water quality management plan, and BMP priorities by Horsley Witten and Loon Environmental. We are working with EPA Narragansett and URI-GSO on water quality and sediment sampling, and USDA to develop a waterfowl control plan. A detailed analysis by the project team determined that the watershed boundaries were significantly different than those identified in the state's pond TMDL. We continue to coordinate an interdisciplinary steering committee and hosted a major public meeting in November which was attended by about 75 stakeholders and accompanied by a front-page story in the Providence Journal. More information on this project is available at nbep.org/rwppondsrestoration.



Roger Williams Park Ponds Restoration public meeting, at the Casino.

River Restoration Working Group:

NBEP continues to work with Save The Bay to chair a working group on river restoration under the auspices of the R.I. Habitat Restoration Team. We hosted a meeting of the committee in October and are now working with the committee to develop recommendations for river restoration policy and management.

Narrow River Restoration:

U.S. Army Corps of Engineers requested that NBEP serve as local sponsor for coastal restration planning in Narrow River. The initial focus of the project is on restoration and protection of wetlands affected by boat traffic and sea level rise on the northern end of the John H. Chafee National Wildlife Refuge.

Watershed Activities

Coalition for Water Security/ Coalition for Transportation Choices:

Sheila Dormody, lead partner for both coalitions, has left CWA and has taken the job of Sustainability Director for the City of Providence. The Coalitions will miss her leadership. CWS is monitoring development of the Water Resources Board's strategic plan. CTC has grown in size, now representing 50 organizations. During this quarter, CTC has focused on International Walk to School Day (leadership from Audubon Society of RI), Complete Streets (led by Sierra Club and AARP) and developing a legislative agenda for 2012.

Blueways Water Trails:

NBEP worked with the Blueways Alliance and 9 watershed groups on a successful application to the RI Foundation to support development of paddle maps for each watershed. Initial meetings have been held to scope out the mapping parameters and the team will develop a rfp for map-making and layout in the next couple of weeks. The grant will result in 2 new maps for each watershed which will be available for download from watershed web sites and from ExploreRI.org.

Ecosystem Science

Dissolved Oxygen Surveys:

Brown University has a computer programmer and a GIS person who have converted the raw data into GIS-compatible format in the past, but Bay Window funds were inadequate to cover a Brown summer intern and Brown man-hours to complete data-processing for the DO surveys. Therefore, the dataset is still mainly in raw format, and only a subset of maps have been completed so far as these Brown staff/faculty find time to chip away at it. Brown will be providing a full excel or text datafile with all measured values by depth (Sal/Temp/Chla/DO) by station for the 305b integrated assessment report. All data has been available as text files on the Insomniac website (www.geo.brown.edu/georesearch/insomniacs) for all previous years, and Brown expects to have the 2011 data tables available this winter for download on the website.

Based on the survey data, summer of 2011 did not exhibit significantly extensive or severe hypoxic waters up to the end of August 2011, although hypoxia did occur in Greenwich Bay and the lower Providence River. The area of hypoxic waters is likely to be similar to the 2010 results.

The federal NOAA Bay Window and CHRP grants have supported the DO surveys but that funding has come to an end. During the past seven years, the survey team has conducted 36 surveys that occupied about 65 stations each survey, resulting in over 2000 station profiles of DO and associated water column properties.

Future funding for DO surveys:

The NOAA Coastal Hypoxia Research Project (CHRP) was awarded reduced funding for 2012. Brown University will be receiving a small amount of funds to continue collecting DO survey data that will be used for further refining the ecological model previously developed (Kremer and Vaudrey, UCONN), while the RIBRWCT will fund a DEM seasonal intern for NBEP as a match in the NOAA CHRP proposal.

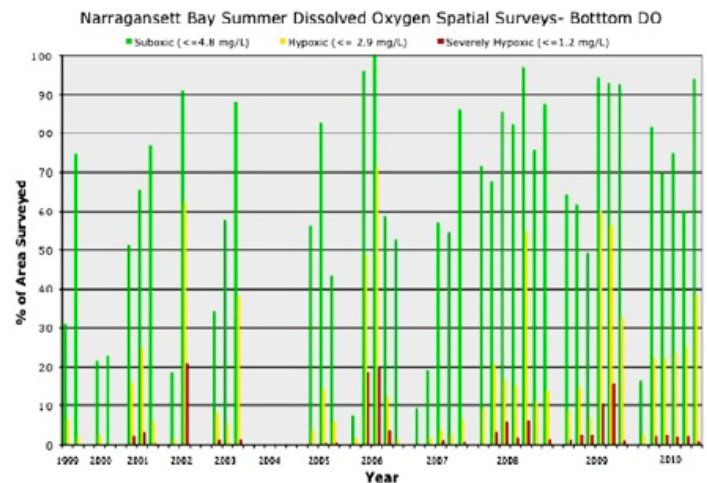
Macroalgae Surveys

NBEP was able to make two more helicopter-based macroalgae surveys on September 26 and October 25, 2011. Groundtruthing surveys identified dominant species occurring during the flights. Using the “macroalgal analytical tool” (see below), our summer intern, Melissa Palmisciano, completed a subset of pictures from 2006, and found that it provides accurate percent cover estimates for algae in the photos. She is now dedicating her Brown Sr. Thesis to this project. Dr. Giancarlo Cicchetti (EPA AED) has now completed post-processing the photos so that Melissa can use the photos with the new analytical tool. For NBEP, Melissa is now analyzing the 2011 photos to specifically examine the growth and transport changes in the “cleared” zones for the surveys completed at 1 month and 2 months post hurricane Irene.

The “macroalgal analytical tool” developed by Andrew Bird (M.S., Ocean Engineering) as an analytical plug-in tool for



Paddlers going over the newly removed dam on the Pawtuxet River.



Total area hypoxic (< 2.9 mg/L) and severely hypoxic (< 1.2 mg/L) in surveys 1999-2010. From Muray et al. 2011. NOAA Final CHRP Report.

Image J (open-source NIH image analysis program) was presented in the remote marine sensing session of the International Bi-Annual Coastal & Estuarine Research Foundation (CERF) conference in Florida, in November 2011. The oral presentation was well received at the meeting.

Dr. Deacutis (NBEP) has co-developed with Dr. Carol Thornber (URI) and submitted a NOAA ECOHAB proposal to continue this work in 2013-14. We expect to hear from NOAA in Mar 2012 if we were successful. This would help support the work the NBEP is doing in tracking trends of macroalgae as nitrogen loads are altered.

Sediment Microbial Community Changes During Hypoxic Conditions:

With funding from R.I. Sea Grant, NBEP will continue to work with Drs. Candace Oviatt and Bethany Jenkins to include nutrient measurements in the sediments simultaneous with DNA-RNA work. Technical Reviewers were highly enthusiastic about the proposed work, and indicated the results will likely have important implications for nutrient (nitrogen) cycling and nutrient load estimates in high-nutrient-load estuaries like Narragansett Bay.

Dr. Bethany Jenkins' graduate student, Shelley Brown, made an oral presentation of her results the CERF conference in Florida, in November 2011. Several hypoxia researchers were enthusiastic about her results, and have been in contact with us concerning this important finding. Dr Bob Diaz (VIMS), and internationally-recognized hypoxia expert, has strongly encouraged Shelley to publish and has also indicated that he would be willing to loan his "worm-cam" device to record time lapse visual evidence of such events as they develop on the bottom in the newly planned work. We are in discussion with him on what this would entail.

Assistance to RIDEM Regulatory Actions

NBEP Chief Scientist Chris Deacutis has continued to assist the RIDEM Waste Remediation Division in the Phase 2 Remedial Investigation and Baseline Ecological Risk Assessment of Site 17, Gould Island.

NBEP has also continued to assist the RIDEM Water Resources in the process of the 316a and 316b permit review for the Manchester Street Power Station. NBEP provided a review of the literature used to justify acclimation and avoidance temperatures in the thermal threshold matrix provided by the consultant to the Dominion Power Company, and suggested other citations.



Chris operating the camera out the window of the helicopter.



Microscopic view of a porcelain crab larvae, found during a sediment survey.