

Fall 2011

Welcome to the Massachusetts Bays Window, the newsletter of the Massachusetts Bays National Estuary Program. Our quarterly newsletter reviews the latest Massachusetts Bays Program (MBP) projects and accomplishments. For more information about the MBP, please visit www.massbays.org.



Save the Date for these Upcoming Events

<u>EVENT</u>	<u>DATE</u>	<u>DETAILS</u>
Stormwater LID workshop – Cape Cod	October 19	Contact Jo Ann Muramoto
Herring River Warden Network Meeting	October 19	Contact Jo Ann Muramoto
RFR due for MassBays 2012 Grant	October 21	More information in article below
NSRWA Annual Meeting	November 4	More information here

Round TWO! Mass Bays Research and Planning Grants 2012

Following last year's successful Research and Planning Grants, the Mass Bays Program (MBP) will offer another round of funding through the 2012 Research and Planning Grant Program. Up to \$125,000 is available for estuarine protection and restoration initiatives located within the 50 coastal communities in the MBP planning area. The MBP is again encouraging proponents to submit projects focusing on applied research, planning, or capacity building initiatives that will assist the MBP in implementing priority action items, such as protecting and enhancing coastal habitat, reducing and preventing stormwater pollution, protecting and enhancing shellfish resources, managing local land use and growth, managing municipal wastewater, managing marine invasive species, monitoring marine and estuarine waters, and adapting for projected impacts of climate change.

Up to \$25,000 may be requested for each project and a minimum of 25% match of the total project cost (cash or in-kind) must be provided. To view the Request for Responses, see the [Comm-PASS website](#) and search for document number "ENV 12 CZM 03." **Applications are due by October 21, 2011.** Projects must be completed by December 31, 2012.

Mass Bays Research and Planning Grants 2011 PROGRESS



Projects funded by the 2011 Mass Bays Research and Planning Grant Program are making great progress. The *Bays Window* will provide timely updates on these projects, which are highlighted by the MBP logo in the articles below. We are thrilled to be a part of these innovative and exciting initiatives.

Mass Bays Program Comprehensive Conservation and Management Plan Update

The MBP is in the process of updating the Massachusetts Bays Comprehensive Conservation and Management Plan (CCMP). The new CCMP will assess progress since the last [update](#) (2003) and set conservation and management targets for the next 5 years. This time around, the MBP is taking a different tack, and shifting its focus to regional priorities, setting goals for each of our [five regions](#) as well as the Program as a whole. As part of the update process, the MBP will hold listening sessions in each of the MBP regions in the coming months, so stay tuned. The CCMP Update will be completed by December 2012.

In the Regions: Cape Cod

Encore for Stony Brook Watershed Restoration

The Stony Brook Restoration Project, as discussed in the [Spring newsletter](#), has already resulted in the improvement of over 386 acres of salt marsh and river herring spawning habitat and the preservation of hundreds of acres of open space in Brewster, MA. Now even more restoration work is underway in this important mid-Cape watershed including restoration of 21 acres of tidally-restricted salt marsh at Freeman's Pond and improvement of the Lower Mill Pond dam, fish ladder, and water control structure.



Freeman's Pond is located on a tributary to Paines Creek (aka Stony Brook) near Paine's Creek Beach. The Freeman's Pond salt marsh restoration project will restore tidally-restricted former salt marsh around the pond by replacing an undersized 3-foot-wide culvert with a 10-foot-wide box culvert to restore tidal flow. Permitting is underway for this project and construction is anticipated in 2012. Funding is from the National Oceanic and Atmospheric Administration grant for the Stony Brook salt marsh restoration project (permitting) and the Cape Cod Water Resources Restoration Project (construction and design).

Lower Mill Pond is located near the upper end of the Stony Brook watershed and is the first of five ponds encountered by herring migrating upstream. The restoration work at Lower Mill Pond involves improvement of the existing fish ladder, dam reconstruction, and rebuilding the water control structure. Because the dam controls the water level in all five headwater ponds that provide 386 acres of diadromous fish habitat for river

herring and American eels, dam removal is neither feasible nor desirable. Planning is underway for this project and construction is planned for the end of 2013. This project is funded through the NOAA-ARRA grant for Stony Brook, local partners and the town.

APCC and the MBP worked with a number of partners to make this encore project a reality, including NOAA, the National Resources Conservation Service, the Department of Ecological Restoration (DER), the Town of Brewster, APCC, the Cape Cod Conservation District, and the Division of Marine Fisheries, with many other local, regional and state partners. The MBP relies on these and other valuable partnerships to complete exciting and critical work all over Massachusetts Bay.

APCC Wins MET Grant to Monitor Marine Invasive Species

Non-native, invasive species cause millions of dollars in damage to sensitive coastal ecosystems, including valuable fish and shellfish habitat, by outcompeting, smothering, or preying on native species. In North America, there are an estimated 598 non-native marine invasive species. In 2003, a rapid assessment survey found non-native invasive species in Cape Cod waters including the tunicate *Didemnum vexillum*. *Didemnum* was first discovered in the Gulf of Maine in the 1980's, and today covers large expanses of Georges Bank and other nearshore and subtidal coastal areas of Massachusetts.



Didemnum vexillum (Mary Carmen, WHOI)

In June, the Massachusetts Environmental Trust (MET) awarded APCC a grant for \$15,600 to set up a regional volunteer monitoring program that will monitor for non-native marine invasive species along the Cape Cod coast. This program will serve as an early warning system to coastal managers. Partners in this project include the Woods Hole Oceanographic Institution and the Office of Coastal Zone Management's [invasive species monitoring program](#). With the addition of the Cape Cod Region, each of the MBP's Regional Coordinators now leads a robust marine invasive species monitoring effort, covering the coast from the Cape to the Upper North Shore. For more information or to volunteer to monitor on Cape Cod, contact Dr. Jo Ann Muramoto at jmuramoto@apcc.org.

Making Connections: Herring Warden Network



The annual migration of river herring, including alewives and bluebacks, from the ocean to the spawning grounds in freshwater bodies is a welcomed harbinger of spring. Almost every town on Cape Cod is home to at least one current or historic herring run. However, the once abundant fish stock has been declining steadily for decades. Many factors may be responsible for the decline – overfishing, poaching, predation, bycatch, and habitat degradation. In one of many efforts to restore and protect the herring population, the Massachusetts Division of Marine Fisheries (DMF) delegated authority to towns to appoint a herring warden.

Eleven Cape towns within the MBP area have herring wardens whose work directly supports the protection and enhancement of coastal habitats. The Cape Cod Commercial Hook Fishermen's Association (CCCHFA), in partnership with the Town of Wellfleet's Herring Warden, is currently creating a River Herring Warden Network with funding from the MBP Research and Planning Grant Program. The network will pool the valuable information and experience collectively held by the Cape herring wardens. This multi-part project is well into development. So far a comprehensive list of herring wardens and herring run committees in Cape Cod, South Shore and Buzzards Bay communities has been compiled. A survey of stakeholders was successfully conducted and feedback gathered regarding the content of a proposed website. The website will provide an online forum for informal discussion and serve to link volunteers and advocates to herring wardens. CCCFHA will develop a Best Management Practice manual that will advise herring run restoration and improvement projects Cape-wide.

In the Regions: South Shore

Stream Restoration Prioritization

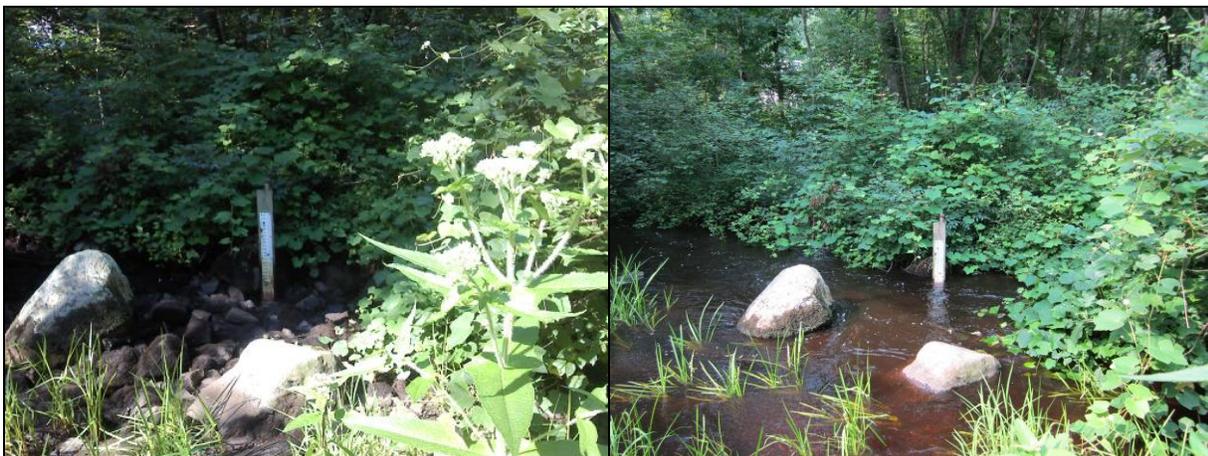
Over the past year, the North and South Rivers Watershed Association (NSRWA) embarked on an effort to identify major impediments to stream flow and continuity along the South Shore. Funded by the MBP, this "Stream Prioritization Project," recently concluded with a report highlighting targets for restoration in the North and South Rivers watershed. The full report can be viewed [here](#). Stream restoration rankings were based on a combination of culvert field surveys using the University of Massachusetts's River and Stream Continuity Project protocols and existing data on biological and physical characteristics such as the presence of anadromous or rare fish species. The highest ranked sites were those with the greatest physical impediments located in high-quality habitat. Although some priority projects would involve construction, some "low-hanging fruit" exist where culverts could be unclogged or flashboards removed to improve stream flow and health. The next steps will be to increase the number of culverts included in the report (only about a quarter of the culverts in the watershed were surveyed) and to conduct biological sampling to update natural resource scores. This report will serve as the foundation for stream restoration in the North and South Rivers Watershed in coming years.



Severe barrier in a system with otherwise good habitat. Cross Street on Indian Head River (NSRWA)

Balancing Ecological and Municipal Water Demands at First Herring Brook

With the help of the NSRWA, the Town of Scituate completed an operational plan for the management of the First Herring Brook, a tributary to the North River. The plan, which will be implemented this fall, balances the town's water withdrawals with the ecological integrity of the brook. Water releases from the town Reservoir into the brook and water withdrawals from the downstream Old Oaken Bucket Pond are controlled by the Town's Water Department. First Herring Brook is the only "herring brook" in the watershed that currently lacks a spring herring run. As such, it is identified as a restoration priority for the region by the NSRWA. Ensuring adequate and consistent flow in the brook will restore the riverine system so that it may again support a herring run.



First Herring Brook summer water flow (1) between and (2) during a typical town water release. Water releases increase flow from approximately 0.1 cubic feet per second (cfs) to 10 cfs. (K. Conroy, NSRWA)

The operational plan recommends regular and consistent water releases to meet target baseline ecological flow conditions. The release amounts are based on modeling and stream flow monitoring efforts by the NSRWA. Ongoing monitoring of stream gauges will allow the Town and the NSRWA to carefully implement the plan. The operational plan is just one of many steps that the Town is taking to ensure the availability of water for Scituate residents while maintaining the ecological integrity of the system. Other water management techniques employed include establishing a one-day-per-week lawn irrigation restriction, installing radio water meters, and finding leaks in the system.

In the Regions: Salem Sound

Greenscapes North Shore Program Helps Communities Prepare New Stormwater Permit



In an effort to improve water quality by reducing nutrients found in stormwater runoff, the [Greenscapes](#) North Shore Program is embarking on a new venture. The Program will help the 17 North Shore community Greenscapes partners address the Community Outreach and Education component of the EPA's municipal stormwater regulations.

Under a new set of regulations (expected this fall), EPA will require many municipalities, including 48 of the 50 communities in the MBP planning area, to increase their efforts to manage stormwater discharges. As part of these regulations, these communities must provide targeted stormwater education messages to four different constituencies: businesses, institutions and commercial facilities; developers and construction companies; industrial facilities; and homeowners. Messaging must be evaluated to determine its effectiveness. Be on the lookout for innovative outreach initiatives including new Greenscapes materials related to stormwater management. For more information, please contact Barbara Warren at Salem Sound Coastwatch at barbara.warren@salemsound.org.



Coming Soon! – Salem Sound to Boston Kayaking Guide



The Department of Conservation and Recreation (DCR) awarded Salem Sound Coastwatch (SSCW), the MBP's Coordinator for the Salem Sound Region, a Recreational Trails Grant to develop an interactive map of publicly accessible, recreational water trails for small, non-motorized watercraft such as kayaks and canoes. As water quality in Salem Sound improves, public interest and support for water-based recreation has increased, but often these interests are thwarted by lack of access or local knowledge of the access locations. SSCW will be using Eight Towns & the Bay's (8T&B) online "[Kayaker's Guide to the Great Marsh](#)" as a model to extend the North Shore water trails network from Manchester to Boston and include water trails in Salem Sound, the Rumney Marshes Area of Critical Environmental Concern and Boston Harbor. The kayaking guide will delineate scenic paddling routes; point out areas to avoid due to shallow water or dangerous currents; specify water travel times; and show access points and associated parking facilities. The kayaking guide hopes to encourage greater recreational use of the region's rivers, harbors, and estuaries and deepen appreciation for these nearshore resources. Look for the new Kayaking Guide for the 2012 kayaking season!



Kayakers along rocky intertidal coast (B. Warren)

Division of Marine Fisheries and Massachusetts Bays Program Transplant Eelgrass in Manchester Harbor

On July 6 and 7, the Massachusetts Division of Marine Fisheries (DMF) and the MBP transplanted eelgrass into “mooring scars” in Manchester-by-the-Sea. Mooring scars are created when a chain, which attaches a moored boat to its anchor (usually a large granite block) scours a large circular patch in an eelgrass bed, a critical habitat in Massachusetts estuaries. These scars, which can often be 30 feet or more in diameter, can significantly reduce the size of the bed and have other adverse impacts such as degraded water quality due to sediment resuspension.

In October of last year, the project team, which also includes the Nature Conservancy and SSCW, replaced 8 traditional block and chain moorings in Manchester Harbor with “conservation moorings.” This emerging technology eliminates the chain and all contact with the substrate and the associated eelgrass bed. DMF and the MBP transplanted eelgrass into the scars around the new



(1) Eelgrass ready for transplant and (2) new eelgrass growth in a mooring scar surrounding a conservation mooring. (T. Evans)

conservation moorings to determine whether this new technology is functioning properly, and whether the eelgrass requires a “jump start” to re-colonize the scar. Another more recent installation placed seven conservation moorings in eelgrass beds within Provincetown Harbor. DMF and the Environmental Protection Agency will monitor the recovery of the Manchester and Provincetown beds over the coming years. The MBP Program Director, Jay Baker, is spreading the word about this demonstration project by giving presentations to interested groups. Read the story in the [Vineyard Times](#). This project is funded by a grant from the Association of National Estuary Programs and the National Oceanic and Atmospheric Administration. For more about the project, see the Winter 2010 MBP [Newsletter](#).

In the Regions: Upper North Shore

New Release: Pepperweed Handbook

With funding from the MBP, Eight Towns and the Bay (8T&B), in collaboration with Mass Audubon, the US Fish and Wildlife Service, and the Gulf of Maine Institute compiled a new technical resource for the identification and control of perennial pepperweed in the North Shore. The [Perennial Pepperweed Control Handbook](#) is directed at local organizations looking to lend a hand in the fight against pepperweed. For more information contact Peter Phippen at PPhippen@mvpc.org.

Getting to the Root of the Problem: *Phragmites* colonization in Great Marsh



The health of the Great Marsh, the largest salt marsh in New England, is threatened by the rapidly increasing spread of the exotic common reed (*Phragmites australis*). Extensive scientific research and observations indicate that an atypical mode of invasion is occurring. While *Phragmites* typically invades the upland edge of the marsh and spreads from there, large patches of *Phragmites* are sprouting in the inner section of the Great Marsh in seemingly random locations, threatening the most sensitive marsh habitats. A team of scientists from the University of New Hampshire (UNH), in collaboration with the Parker River National Wildlife Refuge, is working to identify the root of the problem and the factors accelerating the infestation. Funded by an MBP Research and Planning Grant, the UNH team is investigating the effects of water and soil chemistry on the growth of *Phragmites*, the short and long-term efficacy of current vegetation management practices such as chemical treatment and physical removal of the plants, and root and rhizome characteristics that may help *Phragmites* spread rapidly and gain a foothold in the marsh.



Field sampling in the Great Marsh



This project will complement ongoing efforts led by 8T&B, the MBP's Upper North Shore partner, to map and control the *Phragmites* invasion throughout the Great Marsh. 8T&B recently received a grant from the Massachusetts Department of Conservation and Recreation to expand its management efforts northward into the Black Rock Creek and Black Water River marshes in Salisbury. The efforts of UNH and 8T&B address both the immediate need to control the spread of *Phragmites* in the Great Marsh and also assist the MBP and our partners in developing long term management strategies for this invasive plant.