NARROW RIVER NOTES
Narrrow River Preservation Association: Preserving the Narrow River and the Watershed Since 1970 / Spring 2015

Pilot Program at Middlebridge Tests Methods for Enhancing Marsh Resiliency

On March 23, the R.I. Coastal Resources Management Council and U.S. Fish & Wildlife Service began a marsh restoration pilot study on the marsh just south of Middlebridge. The pilot is comparing two methods of "thin-layer deposition" in which a layer of sand is used to raise the elevation of the marsh surface and thus enable the marsh to keep up with sea level rise.

The pilot will compare the results of two 50 by 100 foot plots where a four-inch layer of sand (100 cubic yards) was added.

With the hydraulic method used for the first plot, water, air and sand were combined in a tank and pumped onto the marsh.

In the second plot, the layer of sand was spread using a Bobcat loader.

USFWS scientists will be measuring sediment levels, vegetation response and peat compression (soil bulk density) throughout the year to help inform suggested methods for larger scale thin-layer deposition of material dredged from Narrow River later this year.

The work is part of a multi-prong USFWS effort to restore estuarine conditions in the John H. Chafee National Wildlife Refuge in the Narrow River to enhance resiliency against sea level rise, climate change and future storm events. Other tools in the strategy include:

Photos by Craig Wood

- Dredging in selected locations to improve channel flow and promote eel grass growth
- Digging runnels and repairing existing ones to improve surface drainage (see pictures and story on page 4)
- Marsh edge protection using coir logs and bagged oyster shells (a method also being evaluated near Middlebridge)

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President's Cove

CVS Health Leads the Way for 2015 NRPA Events

After several years of our being without a major sponsor for the Narrow River Road Race, CVS Health has stepped forward with a very generous contribution to NRPA ensuring success of the event and leveraging the contributions of our base of regular sponsors and participants.

In making the grant, CVS Health's Jennifer Leigh expressed interest in associating the CVS brand with all of NRPA's efforts to promote a healthy environment. These include other recreational events such as the Turnaround Swim and educational programs such as What Lives in the River. So, CVS Health's support will be recognized at all 2015 NRPA events.

And we think any company that sponsors one of our events, or contributes gift certificates or other goods for the event, should be recognized throughout the year. This gives the sponsor greater exposure and means we will not be calling on the company multiple times throughout the year.

The 2015 events include the Narrow River Road Race (May 9), Narrow River Turnaround Swim (June 27), Pettaquamscutt Paddle (July 31), five free family-oriented programs at Middlebridge this summer including our participation in Gansett Days, September 18 through 20, and our 45th Annual Meeting on October 1. Visit the Calendar page on www.narrowriver.org for details.

Many thanks to CVS Health and the following companies and individuals that, so far, have joined CVS Health as 2015 NRPA Event Sponsors: Anchor Storage, Belmont Markets, Brickley's Ice Cream, Attorney Lawrence Goldberg, Rob and Peggy Leeson, Narrow River Kayaks, SmithCo Oil, South County Hospital Orthopedics Center, Wakefield Liquors and Wickford Factory Outlet.

Richard Grant

Richard Grant, NRPA President

MISSION STATEMENT

The Narrow River Preservation Association (NRPA) works to preserve, protect, and restore the natural environment and the quality of life of all communities within the Narrow (Pettaquamscutt) River Estuary and Watershed.

www.narrowriver.org

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United Way of Rhode Island

NRPA is part of the *United Way Workplace Campaign*.
Our donor option number is **6239**
If you plan to give to United Way, please consider designating a portion of your gift to NRPA.

SECA State Employees Charitable Appeal

NRPA is participating in the 2015 Rhode Island State Employees Charitable Appeal (SECA).
Our fund number is **6239**.

Rhode Island Rivers Council

Pilot Program

(continued from page 1)

These and other adaptive strategies for enhancing saltmarsh resiliency were explained by Wenley Ferguson of Save the Bay and Nick Ernst of USFWS on March 29 in the third and final presentation of the On Pettaquamscutt Winter Speaker Series. Copies of their PowerPoint presentations are available at the NRPA website (www.narrowriver.org), along with links to additional photos of the pilot project and USFWS documents describing its estuarine marsh resiliency program.

Kate DeBoer Earns Science Fair Award

Photo by Veronica Berounsky

South Kingstown High School student Kate DeBoer, shown above with her exhibit at the SKHS Science Fair in January, received a Narrow River Preservation Association Science Fair Award at the NRPA Board of Directors meeting on March 10. At the meeting Kate described her project, "Who Has the Best Water Quality?" in which she tested water from three different sources for pH, dissolved oxygen and salinity. After a question-and-answer period, Board member Veronica Berounsky presented Kate with a certificate, $50 prize and NRPA student membership.

NRPA gave Honorable Mentions to three of the 76 students who participated in the fair:

- Rosalind Lucier for her project, *Ticks: Temperature and Humidity*
- Liam McGill for *Effects of Solutions on Melting of Ice*
- Katie Mello for *How Food Preservatives Affect the Growth of Microorganisms.*

Volunteers Needed for NRPA River Watch

Monitoring the health of the watershed is the first and perhaps the most important job of any watershed organization, a role that NRPA takes very seriously. Since 1992, NRPA's volunteer river monitors have tested water in Narrow River and its major freshwater inputs from May through October as part of URI Watershed Watch.

"While many of the river monitors return every year," says NRPA River Watch Coordinator Annette DeSilva, "we are always looking for new volunteers. Being a water quality monitor is a great way to learn more about the water quality of the Narrow River, and at the same time provide a much-needed service to NRPA."

This year, new volunteers are needed to monitor sites on the river that require a boat, kayak or canoe for access.

All new volunteers receive both classroom and field training from URI Watershed Watch personnel. Manuals and all necessary monitoring equipment are provided.

For more information, contact Annette at desilva@uri.edu or 401 874-8860.

Applications for NRPA Lesa Meng College Scholarship Due May 1

Seniors graduating from one of the four high schools in the Narrow River Watershed (Narragansett High School, North Kingstown High School, The Prout School and South Kingstown High School) can earn a $1,000 NRPA Lesa Meng College Scholarship by writing an essay on an environmental problem and what an individual can do to mitigate it. But they must do so by May 1, when the scholarship application must be received by the school guidance department.

Applications are available from the schools' guidance counselors and at www.narrowriver.org (look for the link on the right side of the Home page).

An Old Technique and New Tools Help Salt Marsh Adapt

Large pools of fresh and salt water sit atop the marshes that surround Pettaquamscutt Cove, such as this area just north of Canonchet Farm, as the marshes contend with sea level rise and increased precipitation. It starts with small pools of impounded water that kill the grasses (Spartina alterniflora and Spartina patens) that are the building blocks of the marshes, the marsh surface drops and the pools widen killing more Spartina. The vegetation is replaced by algal mats (above right) and mosquito larvae. Colonial farmers dug ditches in an attempt to drain the marshes, but over time the trenches filled in and collapsed, and the water remains trapped on the surface.

Photos by David Smith

Starting on April 13, John Laauwe of U.S. Fish and Wildlife Service operated a low ground impact excavator (owned by RIDEM's Mosquito Abatement program) and Wenley Ferguson of Save the Bay wielded a long-handled shovel to clear out failed drainage ditches and dig runnels to connect the trenches to trapped water. By the second day of the project, a significant amount of surface water had drained from the southern end of the marsh. "Hopefully, the drained areas can re-vegetate and the marsh can become more resilient," says Wenley. "We will continue the work on the marshes north and south of Middlebridge." The excavator, which is equipped with wooden tracks to minimize impact on the marsh surface, cannot be used once nesting season begins in May. "So, it will be shovels only," says Wenley. "Volunteers are always welcome." If you are interested in helping out, contact Wenley at wferguson@savebay.org.

River Herring and Dams

It's a sure sign of spring in Rhode Island: the arrival of river herring to our coastal streams, rivers, and ponds. In the Narrow River Watershed, the river herring (which include alewife and blueback herring) make their way up through Gilbert Stuart Stream, Carr Pond and Mattatuxet River to spawn. It's not an easy journey for these anadromous species, made all the more difficult by a few man-made obstacles. Here Rachel Calabro, a Community Advocate at Save the Bay, describes a plan to remove one of the obstacles, followed by more information from Phillip Edwards of the R.I. Division of Fish and Wildlife about the number of herring making that run.

River Restoration at Shady Lea Mill

by Rachel Calabro
Community Advocate
Save the Bay

The dam at Shady Lea Mill, located on the Mattatuxet River above Carr Pond, is a barrier to river herring that travel up from the Gilbert Stuart fish ladder to the upper reaches of the watershed to spawn. The Gilbert Stuart fish run is one of Rhode Island's largest and healthiest runs, despite the fact that the stream is small and the fish must navigate a confusing fish ladder at Carr Pond dam. When runs are large enough, fish continue up the river to find additional habitat for spawning. These fish

Photo Courtesy of Save the Bay

are most likely blueback herring that prefer to spawn in stream habitat.

The dam at Shady Lea Mill is a liability to the mill owner and sediment has built up to the point that vegetation is beginning to take over the impoundment. Removal of the dam will return this area back into a stream and will make it suitable habitat for river fish. Save The Bay is working with EA Engineering, Science and Technology of Warwick to develop a design for removing the dam's spillway that will allow fish to migrate past the dam. Permits will be needed for this work from state and federal agencies and from the Rhode Island Historical Preservation and Heritage Commission. Funding for the project has been provided

by the Rhode Island Coastal Resources Management Council, the National Oceanic and Atmospheric Administration and the USFWS.

Shady Lea Mill is part of the Shady Lea Historic District, so care needs to be taken to maintain the historic integrity of the mill and surrounding area. The current design removes only the dam's spillway and none of the other elements such as the earthen embankment or abutments. The project will open up about one half mile of stream habitat.

The Mattatuxet River is a very small stream in its upper reaches, but these habitats are very important for the overall health of the watershed. Cold water fish such as brook trout need these areas to survive summer heat. River otter and other mammals use these small streams as refuge and to feed. This project will increase the overall health of the watershed and will provide a relief to the dam owner.

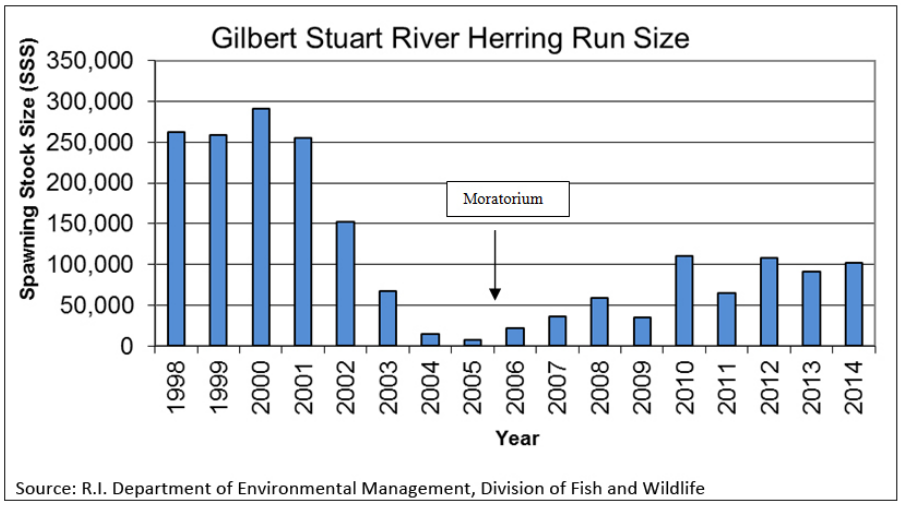
Migratory Fish in the Narrow River Watershed

by Phillip Edwards
R.I. Department of Environmental Management
Division of Fish and Wildlife

Two species of anadromous fish that spawn in the Narrow River Watershed are alewife and blueback herring (also collectively referred to as river herring). These fish hatch in freshwater and mature in marine waters. Once the eggs hatch, the larval fish remain in the freshwater of Carr Pond until summer and fall when the juveniles migrate to sea. They spend three to four years at sea before returning to their native freshwater systems to spawn, completing the life cycle. Rhode Island river herring stocks are capable of repeat spawning in successive years.

During the industrial revolution many dams were built to harness energy but these dams also prevented anadromous fish from reaching valuable spawning and nursery habitat. In many cases fish runs diminished or disappeared entirely. River herring are not capable of jumping, so even the slightest obstruction may be impassable. Since the passage of the Federal Anadromous Fish Conservation Act of 1965, the R.I. Division of Fish and Wildlife has taken a variety of steps, including partnering with various organizations on habitat restoration projects, to create self-sustaining runs of fish to selected river systems in Rhode Island without the aid of stocking or lifting. A secondary goal is to create river connectivity by providing continuous unobstructed passage for aquatic organisms and resident fish such as trout, catfish and bass.

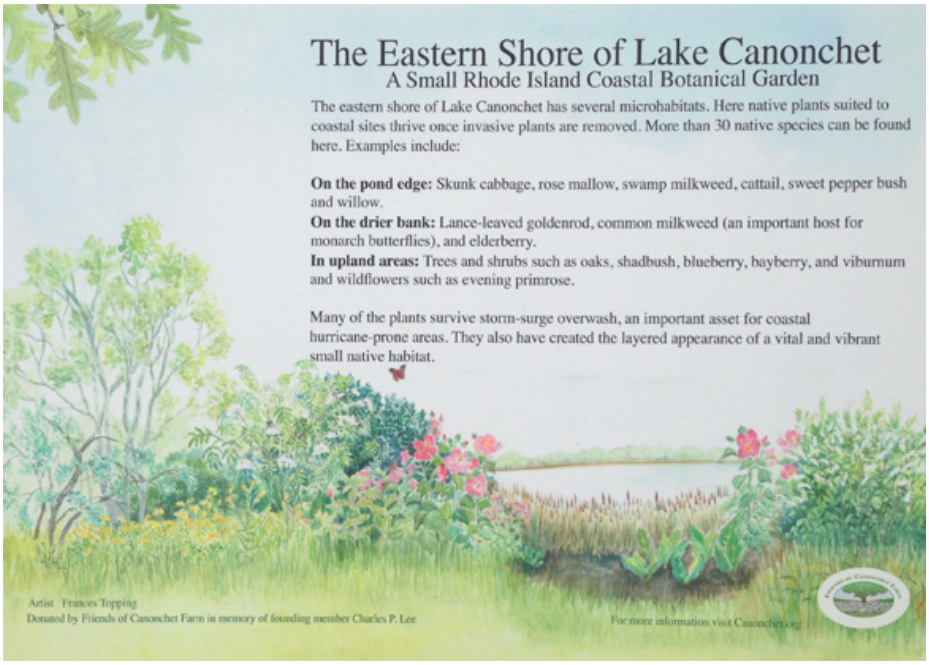
One such partnership is with the Gilbert Stuart Museum Association to restore river herring to the Narrow River Watershed. An Alaskan *steeppass* fishway was installed at the Gilbert Stuart dam in the 1960s. Since 1981, we have monitored adult fish each spring returning to Gilbert Stuart pond to spawn. The run size estimates are important in developing recommendations for future river herring regulations. In 2006, R.I. marine and fresh waters were closed to herring fishing because of drastic declines in spawning stock size. During this same time period, Massachusetts and Connecticut, also experienced declines in run sizes and imposed closures. Preliminary results in recent years show there has been some improvement in the Gilbert Stuart run sizes since the closure,



but the run sizes are still well below the estimated run sizes recorded prior to the decline in the early 2000s. The size of the Gilbert Stuart river herring run was below 8,000 in 2005 and was estimated at over 100,000 last spring. The river herring moratorium will continue in Rhode Island through 2015. Prior to the closure in 2006, the freshwater daily river herring limit was twelve fish per day and closed Sunday, Monday, and Tuesday with no marine regulations in place. During this time, river herring were primarily harvested for bait, but also for consumption.

We also monitor juvenile river herring exiting Gilbert Stuart pond during the summer and fall by net surveys and electrofishing techniques to obtain abundance and growth rate estimates. In addition to restoring river herring to the Narrow River Watershed, the Fish and Wildlife Division installed an eel ramp in 2000. The ramp allows juvenile American eel access from the sea to freshwater maturation habitat. Glass eels and elvers are collected each spring for twelve weeks at an eel trap located at the exit of the eel ramp. Glass eels develop into yellow eels where they will remain in fresh waters from five to 30 years. Once yellow eels are prepared to spawn, they transform to a silver eel phase. Adult silver eels exit the Narrow River Watershed and migrate to the sea in the fall, and are believed to spawn in the Sargasso Sea.

Return of the Natives



Photos by David Smith

The Friends of Canonchet Farm has installed an interpretive sign at Lake Canonchet across Boston Neck Road from the Narragansett Town Beach to celebrate the diversity of native plants along the edge of this coastal pond and to honor the memory of founding member Charlie Lee. The sign features an illustration by Frances Topping of the R.I. Wild Plant Society.

Native plants are thriving along the pond and Little Neck Pond to the north thanks in part to a Friends of Canonchet project, now in its fourth year, to remove invasive species such as Japanese knotweed and Black swallow-wort. Last year, volunteers worked more than 1,300 hours on the restoration project. Work got under way again on April 10 and will continue on alternating Fridays and Saturdays until Memorial Day when volunteers will work on Tuesday evenings during the summer.

Contact Kathie Kelleher at friendscanonchet@aol.com for more information about volunteer opportunities and other Friends of Canonchet Farm activities.




Mark Your Calendar for NRPA Events (Details and Registration at narrowriver.org)

Narrow River Road Race, Saturday, May 9
Narragansett Town Beach North Pavilion
Boston Neck Road, Narragansett
Check-in and Registration 8:30 a.m.
Start 10:00 a.m.

Narrow River Turnaround Swim, Saturday, June 27
URI Campanella Rowing Center
166 Walmsley Lane, North Kingstown
Check-in and Registration 7:45 a.m.
Start 9:00 a.m.

Pettaquamscutt Paddle, Friday, July 31
Narrow River Kayaks
94 Middlebridge Road, Narragansett
Check-in and Registration 5:00 p.m.
Sunset Tour 6:30 p.m.

Five Explorations at Middlebridge
Presented with Narrow River Land Trust
Adjacent to the Middlebridge Marina
95 Middlebridge Road, Narragansett

- **What Lives in the River**
Saturday, June 13, 9:00 a.m. to 11:00 a.m.

- **Art on the River**
Saturday, August 15, 9:00 a.m. to 11:00 a.m.

- **Two Gansett Days Events** Sunday, Sept. 20
What Lives in the River, 9:00 a.m. to 11:00 a.m.
Tour of the Salt Marsh 11:00 a.m. to 1:00 p.m.

- **Garrison House Acres Walk**
A Land Trust Days event
Saturday, September 26, 10:00 a.m. to noon

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