



Mystic Messenger

Mystic River Watershed Association

Your Community • Your Watershed

Spring 2016



20TH ANNUAL MYSTIC RIVER HERRING RUN & PADDLE MAY 15, 2016



Join the Mystic River Watershed Association and fellow community members on Sunday, May 15th for our signature annual fundraiser. The *Mystic River Herring Run and Paddle* celebrates the return of the herring to their freshwater home and the recreational value of the Mystic River.

Run or walk on a flat 5K course along the Mystic River bike path starting at 9 a.m., or canoe, kayak, or stand-up paddleboard a 3, 9, or 12 mile course up the Mystic River beginning at 11 a.m. Boat rentals are available in advance. Compete in both the 5K and 12 mile paddle race and be eligible for the Iron Herring Award. **Register today at MysticRiver.org!**

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Update from the Executive Director

Much concern is expressed these days that in the US a small percent of our population owns an extremely large percent of all things that can be owned. A 2013 Credit Suisse Global Wealth Databook reported that the richest 10% of US citizens control 75% of the nation's private wealth. This inequity creates great distortions and pain in our nation's economic, political, and social life. However, even as we work to address this challenge, it is important to remember with gratitude what we all enjoy. The things we own together represent an incomparable treasure that can provide an important antidote to the trend of growing wealth and income inequality.

Public resources, institutions and properties – national monuments and parks, peaceful communities and public lands, libraries and schools – are all precious and require our stewardship and appreciation to endure.

This is especially true of our natural resources. The Clean Water Act makes it clear, for instance, that the waters of the United States belong to the people of the United States. We have fought hard to secure these rights and protections and without attention these rights can slip away.

The Mystic River Watershed Association is fighting hard to ensure that our local water bodies and shared natural resources are protected and preserved. Your participation in this effort is no small thing and not without important consequence. Clean water, clean air and a healthy local environment have immeasurable value. If you doubt this is true ask someone who no longer owns these things.

I recently met to discuss MyRWA's mission and approach with students at the John F. Kennedy School of Government at Harvard University who are interested to improve and advance philanthropic and non-profit work in their home cities in China. During a break I asked these young people what was most surprising to them on their first visit to the US and to Boston in particular. The answers were various but all agreed on one thing – the American sky. They were amazed how clear and blue it was day after day and how clearly the stars shone at night.

This earth is certainly a beautiful place but we are only here on a temporary basis. It is a mistake to think we own something that is only on lease to us. We come to this place to go and will one day leave all we own behind. Nature's treasures need our care and will endure. Let's do what we can to respect the gifts we share while we are together. See you on the river!

EkOngKar Singh Khalsa

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20th Annual Celebration at the Mystic River Herring Run and Paddle

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This event is fun for all ages! Register by May 1st to receive an organic T-shirt. Participants are eligible for fabulous local prizes and refreshments will be provided. All proceeds benefit the Mystic River Watershed Association. The festivities include food, music, children's activities and a Mystic River bicycle tour departs at 11:15 a.m. led by *Bike to the Sea*. We hope you'll join us for this fun, community day along the Mystic River!

Can you volunteer? Volunteers make the day a success – contact Beth at 781-316-3438 to get involved. The day's events are made possible with generous support from (as of April 28th):

Platinum Sponsors: Assembly Row, Charles River Canoe and Kayak, Exelon Corporation, Preotle, Lane and Associates, Rockland Trust, Wynn Boston Harbor

Gold Sponsors: Dennis K. Burke, Distrigas/ENGIE, Diversified Automotive, Gentle Giant Rowing Club, Law Office of Michael A. Fager, Leader Bank, Mystic River Engineering, The Bulfinch Group, Utility Contractors Association of New England

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MyRWA thanks our many sponsors and volunteers as well as the City of Somerville and the Massachusetts Department of Conservation and Recreation for hosting the event!

Avon Street Hooky

“Walking in the marshy area
was always an adventure”
Advent. All ways. Frogs in
Pockets, chirping at the Ides
Frightening the Mrs, pranking ‘long
Little Creek, netting minnows
Homespun silver back of the mill
Milling about the sheet metal door
“Where a black gel-like substance
... confined by dirt berms...”
lurked;
Best to visit pre-washday post-school
To hoard the dyemen’s noon debris
—two cents a pop—recycling
well before its time
Wheeling and dealing for refunds,
A spin around the bases,
Then up the bank to home—
Al, Nick, Hank, Hue & Jim—
Walking all ways in the March afterschool
It was
an adventure
Was when I
first heard grammar
Flow forth like a verb.

—R.H. Russell
March 23-25, 2016
[for Hue Holley]



Moonrise over the Mystic.
© Michael Fager

GET YOUR OFFICE OUTSIDE

MYSTIC RIVER WATER CHESTNUT REMOVAL IN 2016

2015 BY THE NUMBERS:

21 EVENTS | 966 FABULOUS VOLUNTEERS | 94,160 lbs. OF INVASIVE PLANTS REMOVED



Are You Ready for a Rewarding Day on the Mystic?

By Véronique Vicard, Water Chestnut Program Coordinator

The Water Chestnut Removal Program is back on the Mystic this summer!

Water chestnut is an invasive plant – originally from Asia – that colonizes the river's surface, impedes boat navigation and threatens aquatic life. This weeds population has exploded in the Mystic River in recent years. To address this growing problem MyRWA began to remove

water chestnut through mechanical harvesting and handpulling efforts in 2010. Our work is making a difference! We can see results on the upstream portions of the river – but we need YOU to help maintain and expand our success in combatting water chestnut. Each plant produces 10 to 15 seeds that can germinate up to 12 years later, creating a substantial seed bank that needs careful management year after year.

"Thank you so much for allowing us to help you with the removal of water chestnuts. Everyone had such a blast and we will definitely do it again next year!"
- Genocea participant

The good news is that removing water chestnut is a fun and rewarding group activity! The Water Chestnut Removal Program offers a unique opportunity for corporate and community groups to spend a teambuilding day on the river, improving

the health of the Mystic River watershed while taking advantage of the recreation and enjoyment available of being on the river. **Can your company or group help clear water chestnut this summer?**

Events are organized on weekdays and weekends during the morning, afternoon and evening. However, we recommend a morning event to avoid the warmer afternoon temperatures and to allow you to enjoy a well-deserved picnic lunch along the river. For more information and to schedule an event, contact Véronique at (781)-316-3438 or waterchestnut@mysticriver.org.

Looking to volunteer on your own?

Three community events are scheduled for June and July; event registration will open a few weeks before each event. All supplies are provided for these free, family-friendly events.

Please check our website for more information, event photos and community event registration details: MysticRiver.org/water-chestnut-removal-project/.

Construction may begin this fall on a fish ladder at the Central Falls dam in Winchester Center.
© David Mussina

Swimming Upstream: Bringing Herring Back to the Aberjona

By John Kilborn, Winchester resident

The Mystic River watershed has one of the largest upstream runs, or migrations, of river herring in Massachusetts. Efforts are underway to make the run even larger, maybe the largest in the Commonwealth.

Each spring, schools of herring swim up the Mystic River from the Atlantic to spawn and reproduce in the fresh waters of the Mystic River watershed. The adults lay eggs and quickly return to the ocean. The eggs hatch within days, and the juvenile fish grow and migrate back to the ocean in late summer and fall. Most of the fish return to the same waters where they were born.

Herring will swim far upstream to spawn. But, until recently, they were blocked by the dam constructed in Medford's Mystic lakes in 1864. In 2011, the state constructed a fish ladder that allowed the herring to bypass the dam and swim farther upstream. This ladder opened up



a large area of habitat suitable for herring reproduction. In 2015, the number of fish using the ladder almost doubled, perhaps as a result of the additional habitat.

Now the fish are blocked upstream by the Central Falls dam located in the center of the Town of Winchester. Last June, thousands of fish were stuck in front of the dam, and observers said that it looked as if you could cross the river on the backs of the herring! When the dam's floodgates were opened, the fish quickly swam up river—all the way to Horn Pond in Woburn, which could provide significant new breeding habitat.

For the past few years, local volunteers, Town of Winchester officials, and the Mystic River Watershed Association (MyRWA) have been working to install a fish ladder in Winchester's Central Falls dam. MyRWA tested the quality of the upstream water for two years to ensure that it was good enough for spawning and fish growth. Although the upstream river, the Aberjona, has some impairments, none are significant enough to stop the migration.

The good news is that construction of a fish ladder for Winchester's Central

Falls dam may begin this November 1st. Agreements for the construction are not yet complete, but a final design for the ladder is being prepared. In addition, the Commonwealth's Division of Marine Fisheries will be making improvements to a spillway in Horn Pond to ease fish passage into the Pond. If the fish can get up to Horn Pond, the Mystic River watershed has the potential to support the largest run of herring in Massachusetts!

These new fish ladders will provide critical assistance in helping to restore the rivers and the watershed to their former condition. Historical records from the 1860s and 1870s confirm that there was an active herring run into Winchester. "Great numbers" of herring were taken for food and other purposes. In 1870, Winchester built a fishway over the Central Falls dam and, in 1872, it was reported that the herring "swarmed in our waters last spring." There were so many that they crowded each other out and jumped onto the wet grass to spawn!

With the help of MyRWA, these efforts will restore the watershed and bring back the herring migration to its past glory, and we can all see those fish in their "great numbers."

Wynn Resorts remediates a 33 acre parcel along the Mystic River in Everett. Shown here is an aerial view of the three main areas of contamination.
© David Mussina



Goodbye Arsenic and Lead!

By Beth MacBlane, Communications & Outreach Director

For decades the former Monsanto chemical site on the banks of the Mystic River stood vacant and overgrown and its cleanup was only a pipe dream. The site cleanup cost – tens of millions of dollars – was beyond the grasp of most developers, despite significant riverfront revitalization at Gateway Plaza in Everett and, even more impressively at nearby Assembly Row in Somerville.

The site housed chemical manufacturing companies from the late 1800s until 1983 and was even used to store rock and tunnel muck from the construction of the Deer Island Sewage Treatment Plant. As was typical in early chemical manufacturing, leaks and spills of hazardous materials occurred, contaminating the soil, groundwater and sediment at the site. Testing of the 33

acre site found high levels of lead, arsenic and copper as well as an area of very low pH in the groundwater. As a result of all the contamination that remained from past industrial uses, this site's shoreline has been inaccessible and unusable to the public for more than 100 years and has been leaching contaminants into the Mystic River daily. For much of the past three decades the site languished.

Wynn Resorts however saw the potential of a waterfront property with great views of Boston, took an interest and the rest is history.

Wynn pledged to clean up the site (expected to reach \$30 million) and to expand green space and public access to the Mystic River, all with their own funds. In 2013, early in the public comment period, MyRWA made a number of recommendations including a revised approach to the shoreline – one that would include a restored saltmarsh and coastal bank restoration, expanded green space and increased climate resiliency to the site. MyRWA is happy to report that the Wynn team incorporated these suggestions and intends to create a “living shoreline,” providing great benefit to river ecology and serving as a model for this type of

tideland restoration throughout the Mystic River watershed. In addition, in response to comments from MyRWA and other advocates, the size of public open space was increased and greater connectivity to other public parks near the site is included in Wynn's plans.

The Remediation

Remediation efforts began at the Monsanto site in fall 2015 and included in-situ solidification/stabilization, soil excavation, placement of an uncontaminated soil cap and the removal of contaminated sediments. Three main areas of contamination at the site were identified through extensive sampling and monitoring efforts:

Area 1: High lead and arsenic concentrations are documented from approximately 8 feet below ground surface. No specific source for the elevated arsenic and lead levels has been identified, and the impacts appear to be random and related to fill material. Contaminated soil will be excavated and disposed of off-site.

Area 2: High concentrations of arsenic and lead have been identified in this area from about six feet to 15 feet deep. Migration of contaminants from the soil to groundwater

and then to the water-side portion of the site has been documented. The elevated concentrations of arsenic in soil and groundwater will be addressed through a combination of the excavation and disposal of soil off-site.

Area 3: Groundwater pH is less than four in this area. Additionally, dissolved arsenic, cadmium, chromium, lead, nickel and zinc, along with total cyanide, have been detected above the Massachusetts Contingency Plan standards. The concentrations of lead and arsenic are elevated in soil and groundwater from about four feet to 15 feet with migration of contaminants from the soil to groundwater and then to the water-side portion of the site. The goal is to reduce groundwater concentrations and contain the arsenic and lead at this location using in-situ solidification/stabilization. This cleanup method binds contaminated waste in a solid block of material, such as cement, and traps it in place. In-situ solidification/stabilization prevents the contaminated waste from leaching above safe levels into the surrounding environment (i.e. the Mystic River). Using this method, 333 cells were filled, each about 15 feet by 10 feet by approximately 11 feet deep.

MyRWA believes that, properly completed, the cleanup will put this important riverfront property into productive use and will provide substantial benefit to Mystic River communities and to the river itself. Currently, the land-based site cleanup is nearly complete – a few truckloads of soil need to be moved off-site and further clean up will begin when work in the tidal areas gets underway.

The clean-up of the Monsanto site is a success for the health of the Mystic River, and MyRWA is proud to have played a role in this restoration effort. MyRWA would like to thank MyRWA member and photographer David Mussina for getting this complex project on film. As work moves ahead we will continue to document this transformation on our website.



To excavate the deeper layers of contaminated soil in Areas 1 and 2 groundwater had to be removed. Four wells in Area 2 were dug so groundwater could be pumped from the site.
© David Mussina



MyRWA staff and committee members enjoyed a site tour in January. © Julie Hambrook Berkman



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Get Social with MyRWA!



Upcoming Events

MyRWA Committee Meetings

Tuesday, June 7, July 5 & August 2

7 p.m. to 9 p.m. Tufts University, Lincoln Filene Center,
Rabb Room. Free and open to the public.

20th Annual Mystic River Herring Run and Paddle

Sunday, May 15th

8 a.m. registration. Blessing of the Bay Boathouse, 32
Shore Drive, Somerville. See MysticRiver.org to register.

Community Water Chestnut Removal Events

Saturday, June 18, July 16 & July 30

9 a.m. to 1 p.m. Location to be determined. Register at
MysticRiver.org.



The first swan of summer.
© Rusty Russell