



# WaterWatch

THE NORTH AND SOUTH RIVERS WATERSHED ASSOCIATION  
Protecting our Waters Since 1970



## Growing to Meet the Needs in Your Community

### \$200,000 Matching Gift Challenge Announced!

Through 2020 the NSRWA is growing to meet the needs in your community to protect our waters by doubling the number of people we educate and engage. By the end of August, through the generosity of donors like you, we were halfway to our \$600,000 campaign goal to support that growth. In early September, we were pleasantly surprised with a generous \$200,000 matching gift challenge from the Bloomwhistle Charitable Fund that will help us get closer to our goal!

Because we wish to grow our donor base to support the growth of the organization, through the end of this year, all gifts from new donors and current donors who increase their giving over last year will be matched by the Bloomwhistle Charitable Fund. Our goal by the end of the year is to raise an

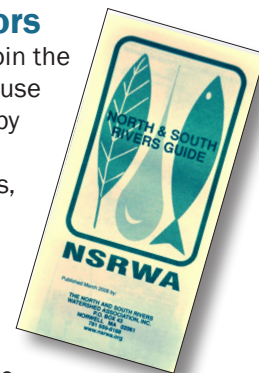
additional \$50,000. Please be as generous as you can!

### Investing in Local Water Education

Part of our strategy to increase our reach in the region is to engage middle and high school students in local water stewardship programs in their own communities. To do this we are creating a new full-time environmental education position that we will have on board this fall. The educator will take over our existing 5<sup>th</sup> grade Water All Around You program, Estuary Explorers pontoon boat program, and will allow us to provide more outdoor family programming like guided boat rides, hikes, and paddles. Many of these are offered for free or at a subsidized cost to schools and families. Check out our upcoming programs at [nsrwa.org](http://nsrwa.org).

### Connecting People to Their Local Outdoors

Many people join the organization because they are inspired by our great work to protect local waters, but they often find out about us because they want to explore the nature of the South Shore. Since 1991 we have offered, as a new member benefit, our North & South Rivers Guide Map, which highlights open spaces to hike, boat access points, tidal offset information and historical points of interest. We are updating this paper map with all the open space parcels that have been



See Growing, *Continued on Page 3*

# ANNUAL MEETING

Friday, November 2, 2018 at 7:00pm  
South Shore Natural Science Center

## WaterWatch Lecture Series

Wednesdays, January 9-March 6  
**FREE ADMISSION!**  
At the South Shore Natural Science Center

## NORTH AND SOUTH RIVERS WATERSHED ASSOCIATION

*Serving the communities of the South Shore. Our purpose is to Protect Our Waters.*

*We believe that an educated and engaged citizenry will result in healthy rivers and watersheds, thus  
Educate + Engage = Healthy Rivers.*

*Our goals for 2020 are to:*

*EDUCATE; to serve as the primary source of watershed information in the region and to provide each student with at least one first-hand watershed experience.*

*ENGAGE; to strengthen our river based recreation and volunteer service programs to connect people to the rivers and watershed, and become a primary source of information for family outdoor activities.*

*HEALTHY RIVERS; to inspire a community of stewards dedicated to a healthy and vibrant watershed through our own on the ground restoration projects to show people what a healthy river system is and how it supports the health of their community.*

### OFFICERS

*President: Sally Caverly  
Vice President: Deborah Lenahan  
Treasurer: Rick Mayfield  
Secretary: Barbara Carney*

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*Environmental Educator  
Brian Taylor*

*Lead Pontoon Boat Captain  
Willard Boulter*

*Yoga at the Rivers Edge and Columnist  
Kezia Bacon*

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# Letter From Our President

The past year marked unprecedented growth for the North and South Rivers Watershed Association (NSRWA). Together, we educated our community, spread our message far and wide, and significantly expanded our financial support. It has been an honor to serve as president of the board of directors during this exciting time.

As I prepare to turn our organization over to new leadership, I am looking back at all we have done to protect our waters in a relatively short time. As a result of everyone's hard work, we:

- Educated over 2,500 students and adults annually through our programs
- Reached over 30,000 community members with our messages of environmental responsibility
- Expanded our print and social media outreach
- Added board members, staff and volunteers
- Established an advisory council
- Increased the breadth and depth of our financial support

Financial support is an especially notable area of growth. We proudly accepted a newly announced \$200,000 matching gift challenge from the Bloom-whistle Charitable Fund. This generous gift will help us secure a stronger member-giving base that will help us sustain our recent growth. What a pleasure it was for me to meet the gentleman behind this gift, introduced to me by our Director of Development, Gabriela Silva. I hope you will all make it to the annual meeting to hear him speak about his challenge to us.

In addition, our Campaign for Growth, initiated last year, is a success. We are halfway to our \$600,000 goal thanks to member donors, corporate sponsors and matching gift donors. The Bloomwhistle Charitable Fund gift makes our goal of \$600,000 attainable.

I would also like to take this opportunity to introduce a slate of new board officers



who, if elected, will take the helm at our annual meeting on November 2<sup>nd</sup>. Recently retired professor and long-time board member Peter Hainer is slated to become our new president. Board member and environmental attorney Kevin Cassidy is slated to join Peter as vice president. Current treasurer Rick Mayfield (who spearheaded our strategic plan) and current secretary Barbara Carney, if reelected, will complete the list of board officers. Peter has great respect for our association's history and grassroots spirit. He is the perfect choice for president.

Lastly, I thank my fellow board members, the NSRWA staff, our advisory council, our members, and our volunteers for their support of our association. The best thing about serving on the board of the NSRWA is working with like-minded people who share the common goal of protecting our waters.

See you on the rivers!

Sally Caverly  
President, NSRWA

**Save the Date**  
**NSRWA New Year's Day Walk**  
Tuesday, January 1, 2019 at 1:00pm  
Stay tuned for more information. Location to be announced



# Growing to Meet the Needs in Your Community (Continued)



Brian, at the Manice Education Center in the Berkshires, searching for macro-invertebrates in a fresh water pond with students from New York City. He is explaining how the life found in the pond helps us identify pollution levels in the water based on the presence of pollutant intolerant indicator species.

## Meet Our New Environmental Educator Brian Taylor

We would like to welcome our new Environmental Educator, Brian Taylor! Brian is originally from Kalamazoo Michigan. He went to college at Western Michigan University and graduated with a B.S. in Education as well as achieving a state teaching certificate. After teaching in a public school for a year, he decided to take his teaching experience outside and began working for several outdoor education programs. These included Nature's Classroom in New Hampshire, Sierra Nevada Journeys in Northern California, and The Coosa River Science School in Alabama. He then became the Assistant Director of the Manice Education Center in the Berkshires of Western Mass. After being in a major leadership position for about two years, he started to miss actually being in the field teaching. In his search for reconnecting directly as an educator he found out about the North and South Rivers Watershed Association. Brian said, "I now am fortunate enough to be part of an amazing organization that is both teaching great things, as well as doing great things. I look forward to bringing forth a well-rounded teaching background with a love and passion for the environment. I am eager to teach, and excited to learn. I hope to have a positive impact on both the people I work with, as well as the land and water the organization is involved with."

## Growing

Continued from Page 1

acquired since 2006, many of which we have worked to protect and are along our rivers! We will be unveiling this new guide later this year.

Simultaneously, we are revamping our website to include the same listings

found on our paper map to connect people to our local natural treasures, making easier for you to find your favorite outdoor spaces online and to learn more about them! One doesn't need to go far to enjoy all that the nature of the South Shore has to offer. We will be launching our new website in the spring of 2019 with our added Explore South Shore feature. Stay tuned!



## Ambassadors Program Continues to Grow!

Since Lisa Lenon's introduction of this new outreach program in early 2018, our volunteer Ambassadors program has reached an impressive 700+ people to let them know what NSRWA is doing to protect our waters and increase awareness of our outdoor activities and educational programs. Our Ambassadors have staffed tables and booths at more than 20 community events and have delivered presentations to 16 community groups so far this year.

Great numbers, yes, but what's it really like to get out there and spread the word? Ambassador Charlie Naff, a long-time volunteer and former board member, who has done more than half of the presentations, says "It's an honor to be part of it!... I love it!" Charlie, whose passion and enthusiasm for NSRWA is palpable, brings his presentation to libraries and community groups. He reports that he gets terrific response from every group. The attendees "are just so interested in the information about our purpose, mission, goals, and results."

The Ambassadors have also been promoting our new discounted Senior pontoon tours, and we are getting a tremendous response.

It goes without saying that we couldn't do this without volunteers like Charlie. If you see yourself as someone who can help us grow and reach new audiences in your community, let us know. Contact Lisa at [admin@nsrwa.org](mailto:admin@nsrwa.org) or call our office. You can also help by letting us know about any group that needs speakers or an event that is looking for exhibitors.



# Education - The Water All Around You Program

## Do You Know as Much as a 5<sup>th</sup> Grader?

Do you know exactly where your water comes from? And where it goes? Are you aware of the impact of big development projects in your area? Do you feel that you know enough to be a good steward of your community's water resources? If you can't answer 'yes' to each of these questions, you might want to ask a fifth grader.

For the past 10 years, NSRWA has reached 5<sup>th</sup> graders (and the 2<sup>nd</sup> graders in Marshfield) in 26 elementary schools in 11 South Shore towns with our highly-regarded Water All Around You program. With a series of six hands-on learning stations, the students gain a greater understanding of their local water resources and water conservation. Each of these stations offers a great foundation for taking a closer look at the issues around water quality, water quantity and related environmental issues for adults as well as kids. Since we don't all have fifth graders, let's take a look at some of the Water All Around You stations.



### Where in the Watershed are You?

Have you ever taken a bird's (or drone's) eye view of exactly where you are located in the watershed? Students start this program by looking at a topographical map to locate their local water resources to see where their water comes from. They trace how all areas of their water sources are connected as water moves through the watershed. Many discover that their town may have many watersheds and that watersheds are not limited by town boundaries.



### Water Across the Land

Water Across the Land asks us to consider what happens when rain water falls to earth and lands on impervious surfaces? Station 2's 3-dimensional model reminds students that a watershed is like a basin or bowl causing stormwater to migrate to the lowest point, generally a river, pond or ocean. Students are asked to identify all the impervious surfaces – roads, roofs, parking lots – that prevent water from being absorbed back into the soil and to think about all the pollutants – oil, trash, fertilizer, dog poop – that this water picks up as it flows to the nearest natural bodies of water.

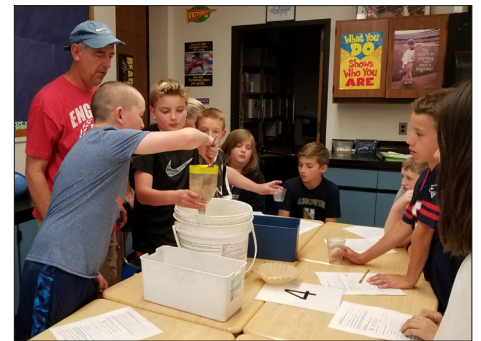


### The Water Beneath Your Feet

With a layered cross-cut groundwater model (think ant farm), students follow the path of water as it moves underground to surface water and see some of the ways that it can become contaminated: faulty septic systems, underground gas and oil tanks, chemicals from lawn care, animal droppings. This activity emphasizes that the water you drink may have come from a town far away, so it is critical to ensure that groundwater from all towns is not contaminated.

### Cleaning Dirty Water

This activity shows how dirty water is cleaned as it passes through rocks and dirt that can filter many pollutants out of water under the surface, highlighting once again how impervious surfaces don't allow for filtering. This activity creates



a great opportunity talk about the stages of water cleansing in home septic systems and town water treatment facilities to make water safe for discharge or drinking.



### Spending Your Water Allowance

In order to have enough water, Mass-DEP recommends people to use no more than 65 gallons of water per person per day. How do you compare? Students complete a team activity that compares water usage with and without water-saving devices and quickly learn that there is not enough water for lawn watering.

Thank you to our WaterSmart towns for making this program possible. Without their financial support this and other programs would not be possible. The WaterSmart program is a partnership with Aquarion (Hingham and Hull), Duxbury, Hanover, Kingston, Marshfield, Norwell, Pembroke, Rockland, Scituate, and Weymouth.



# Healthy Rivers - Dam Removals Move Forward



## Reconnecting the South River

Ultimately our goal is to reconnect the South River from Veteran's Park up to past the Temple Street dam in Duxbury and restore fish habitat for brook trout, river herring and shad. To accomplish this three dams need to be removed: Veteran's Park and Chandler Pond dams in Marshfield and Temple Street dam in Duxbury.

This spring we were able to move forward with our partners in Marshfield and Duxbury to discuss Veterans' Memorial Park and Temple Street dams. In Marshfield we worked with the town, abutters, veterans, and state and federal agencies to gain consensus on a plan that could meet the needs of all and remove the dam on the South River at Veterans' Memorial Park in Marshfield. The major issue at hand is how to keep the elements of the park that honor our veterans some of which are failing --like the lagoon, fountain, and water wheel--and still remove the dam. We think we have a solution but it will require further engineering work. Our next step is to raise more funding to complete the studies needed to design and permit this restoration project.

Farther upstream on the South River at Temple Street we worked with our partners and the town of Duxbury to investigate how and if any flooding would occur as a result of the removal of that dam. The results indicate there is a small increase in downstream flows during smaller rain events that will need to be further clarified to alleviate any flooding concerns. The next steps involve tying the engineering work at both the Veterans' Park and Temple Street dams together with previous work done at the Chandler Pond dam and fundraising for that work.



## First Herring Brook Flow Stopped in August

This year was a tough year for the First Herring Brook in Scituate and the fish that rely upon it. In early August the town decided to stop releasing flows from their reservoirs in order to conserve their water supply. Unfortunately, that means any herring that might have made it into the reservoirs cannot return to the ocean until streamflow releases resume; in addition any other aquatic creatures in the brook will simply not survive. This action was not part of the streamflow release plan that the NSRWA and the town agreed upon but due to high summer demand, drier than normal conditions, and failing infrastructure, the town felt they needed to take this step. We will continue to work with Scituate to gather data, advocate that the health of the river must come before lawn irrigation, and work on water conservation policies and projects that allow streamflow to be released that safeguards the drinking water supply.

## Hanover Mall Dam Removal Moves Forward

With two dams already removed on the Third Herring Brook in Hanover and Norwell, we have been focusing on the last dam to be removed owned by the Hanover Mall. Fortunately, the redevelopment of the Hanover Mall is well-timed. The mall's current owners have contributed to matching our federal grant dollars to a recently completed feasibility study (it is feasible!) and permits that will be needed for the dam to be removed.





# The Health of Our Estuaries

## Interconnected Estuarine Projects



Just like the ecosystem of the estuary, the projects that we work on are related to each other through the positive and negative impacts that different organisms and environmental conditions have on each other. Here are some of the recent projects that share connections:



### Green Crab Trapping

Throughout the summer Calli Bianchi, an NSRWA intern, trapped green crabs off her dock to try to determine patterns in green crab growth and abundance, whether green crabs could be trapped intensively enough to cause local depletion, and to find a potential local market for them. Calli found that green crabs could be locally depleted, especially in creeks, where the average number of crabs caught within 48 hours fell from 147 on June 27<sup>th</sup> to 48 on August 7<sup>th</sup>, a 67% reduction in abundance. She also investigated potential markets for green crabs like bait and crab broth.

**Connection** – Green crabs have been implicated in the loss of mussels and eelgrass in our estuaries, as well as loss of salt marsh due to burrowing. Green crabs are an invasive species that have recently been having more intense impacts for reasons that are not yet fully understood.

### Mussels in the North and South Rivers

In August we went back to the North River to check on the mussel beds that were enhanced in September 2015. Three years later, the mussel placement area had sorted into three areas - where mussels

had settled on harder surfaces they had survived well, where they had fallen close together in mudflat it appears they initially survived long enough to create a reef but then died (possibly due to burial and/or sediment movement), and where they were more spread out on mudflat they had also died but not formed a reef. If we place mussels again, they will likely be used to enhance the existing mussel beds, plus added to the remnant shells (cultch) in the intermediate area from the reef-forming mussels.

**Connection** – Mussel populations have declined and may not be able to survive as settled spat due to predation by green crabs, so placing larger mussels is a way to combat that predation.



### Eelgrass Monitoring

In response to declines in eelgrass habitat, in mid-August a team of volunteers and MassDMF staff surveyed 250 points throughout Duxbury, Kingston and Plymouth Bays to assess whether eelgrass was present. This is part of an effort to integrate citizen science into more frequent mapping of eelgrass beds. The surveys were conducted from boats using a frame-mounted camera to photograph the bottom. The data will be analyzed later this fall.

**Connection** – In some locations, eelgrass habitat has been replaced by mussel beds. They cannot co-exist because mussels prefer and create a hard bottom and eelgrass prefers a soft bottom.



### 2018 River Herring Counts

Some of the most hotly anticipated data each year are the herring count results. This year saw a slight increase in numbers of fish in the Herring Brook and South River compared to last year and a decrease in the Third Herring Brook. Unfortunately, no fish were seen in the First Herring Brook. The population estimate for the Herring Brook, based on volunteer counts, was 119,662 +/- 7,563, an increase from 114,350 +/- 22,688 in 2017 and the highest number recorded since counts started in 2012. In the South River, 66 herring passed the ladder at Veteran's Memorial Park with approximately 750 seen downstream compared to 57 passing last year and approximately 1,000 downstream.



# Engagement - People in the Watershed



## Goodbye and Thanks to Don Salvatore

Don Salvatore, our part-time educator will be leaving us this fall to move on to the next stage of his retirement. Don is known to many for his work coordinating the Water All Around You school program, the Estuary Explorers program, pontoon boat tours and much more. A lifelong lover of science and the natural world, Don retired nine years ago from his “dream job” as science educator at the Museum of Science and has since played a critical role in the development and growth of our educational programs. But when you ask him how it all started with NSRWA, it’s quite simple. He wanted to know more about the river so he volunteered as a water tester. “I just love the river,” he told us, “and the people working to protect it are my kind of people. I’ll do whatever I can to help.” And so he has.

As a recent participant in an Estuary Explorer trip said, “Don is very cool.”

We wish Don the very best in his future endeavors. We’ll miss him and his knowledge of the natural science and history of the South Shore!



## Local Citizens Make a Difference with Plastic Bag Bans

Inspired by the Marshfield plastic bag ban, citizens in Pembroke and Scituate have taken up the cause. Jean Ryer (right) of Marshfield has been working with Jaime Sullivan (left) and Stephanie Hagan (center) of Pembroke to get the ban on the ballot. Please get out and vote to support these bans in **Pembroke on October 23**, and **Scituate on November 14**, and help protect our local waters!

## Liz Boston Teen Art Squad Answers Our Call

Through the magic of social media, the Teen Art Squad learned of our call for artists to help us raise water conservation awareness by customizing a rain barrel. The Art Squad is a group of teen artists who meet at the Liz Boston Art Studio in Weymouth, and under the guidance of artist Liz Boston, create art for non-profit organizations like schools, churches and local municipalities. These art projects enable them to earn their community service points. The NSRWA rain barrel project was totally on-mission for them! Their rain barrel, beautifully painted as a team effort, was on display in the Weymouth Public Library.

Liz tells us that the kids “had a lot of fun” with the project, but even more importantly, it has led to a bigger relationship with NSRWA. The group has since taken an Estuary Explorers pontoon boat trip to the Spit with Don Salvatore. The kids really enjoyed the time on the river and the water salinity experiments Don did with them. See the Art Squad on Instagram @teenartsquad.



## Listen to Sara’s New Podcast, “The Estuarine Gradient”!

Our Watershed Ecologist, Sara Grady, has started a monthly podcast through Marshfield Community Television that will cover multiple topics related to the estuaries of the South Shore and beyond. The first episode is up on our website and another should be coming shortly! Sara will also be accepting ideas for future topics. Just email your ideas to [sara@nsrwa.org](mailto:sara@nsrwa.org).



# WaterWatch

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## Planet Subaru Donates Program Vehicle to NSRWA



Planet Subaru of Hanover donated \$18,147 to the NSRWA which was used to purchase a program vehicle. The money was raised as part of the Share the Love® campaign run by Subaru of America, Inc.

“Being chosen as one of Planet Subaru’s hometown charities is a real honor – and it couldn’t have come at a better moment in our evolution! Our strategic plan calls for a program vehicle to support our in-school education and community outreach events. This car will help us reach more people with our message to protect our waters. Partnering with Planet Subaru makes sense – they share in our vision of engaging people outdoors so they will learn to love and protect it,” said NSRWA Executive Director Samantha Woods.

## Thank You to Our 2018 Corporate Sponsors!

