



WaterWatch

THE NORTH AND SOUTH RIVERS WATERSHED ASSOCIATION

Protecting our Waters Since 1970



Photos left to right: Luddam's Ford Park dam on the Indian Head River, salt marsh, Third Herring Brook after removal of Peterson Pond dam.

Growing to Meet the Challenges of Climate Change

We are living in unprecedented times. Last summer brought intense rains and this summer brought extreme heat and drought - our watersheds have whiplash! The NSRWA is growing to meet these challenges and make our watershed more resilient to a changing climate.

Growing Healthy Waters for Climate Resiliency

Removing aging infrastructure and restoring fisheries and habitats will enable people and wildlife to better cope with a changing climate. This year we launched the Indian Head River Restoration Project to examine the feasibility of removing two aging dams, clean up contaminated sediments behind them, and restore fisheries on this major tributary to the North River. Thanks to a \$410,000 grant awarded to the NSRWA by the Natural Resources Damages Trust Fund, we recently hired a part-time coordinator,



Becky Malamut

Becky Malamut, to work with the communities along the Indian Head River to jumpstart this project.

Growing Volunteer Engagement for Climate Resiliency

Growing and engaging our volunteer base of support is critical to strengthening our organization to meet the challenges of a changing climate. To bolster our capacity to find and train volunteers we recruited Theresa Delahunt, a volunteer herself, to be our Volunteer Coordinator. She has been invaluable in recruiting new volunteers, training, and placing them where they will be most happy and most needed. If you are interested in volunteering with us please fill out our online volunteer application and Theresa will be in touch!

Our new strategic plan set a goal to create a new engagement program with a focus on taking action to build climate resiliency in our watershed. Our new "Climate Conversations Lead to Action" program aims to do just that! We

are partnering with the Unitarian Universalist First Parish Church in Norwell to engage their parishioners and the public in a series of Eco Explorations. These events inform participants of the impacts climate change is having on our local salt marshes, freshwater supplies, streams, and forests, and how we can individually and collectively make these systems more climate resilient. The program will explore the barriers people have to adopting and participating in these changes and how we can overcome them together. Lastly, the program will engage the community in building a rain garden on the church's property in the spring to recharge clean water back into our watershed!

Growing Water Education for Climate Resiliency

Growing educational programs that support climate resiliency is also part of our strategic plan. With funding from the Scituate Education Foundation, we pilot-

See Growing, Continued on Page 7

NORTH AND SOUTH RIVERS WATERSHED ASSOCIATION

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.*

OFFICERS

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Vice President: Susan Darnell
Treasurer: Jack Zarkauskas
Secretary: Barbara Carney

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Indian Head River Restoration Coordinator
- Becky Malamut

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Boulter

Yoga at the Rivers Edge and Columnist -
Kezia Bacon

NSRWA

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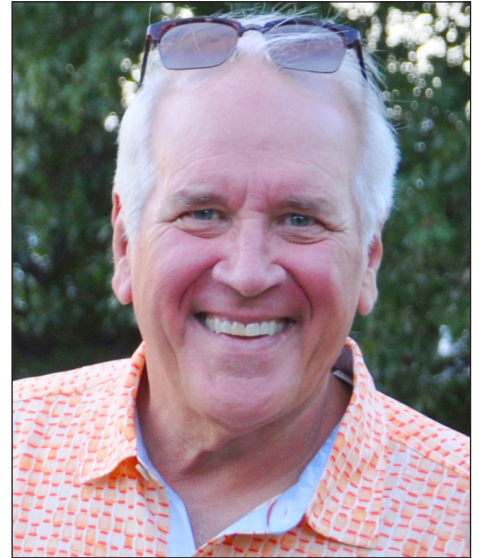
Letter from the President

Over the past seven years, I have had the distinct pleasure to serve on the NSRWA Board. I have watched as we have grown as an organization and become more engaged with our constituents with new programming like our Explore South Shore Challenge. We have brought educational programming to the next level, reaching more and more youth and providing them with experiences to last a lifetime. By increasing our citizen science programs, we have strengthened people's connection with our watershed while contributing vital data to ensure its health. As I reflect on all of these, I am simply grateful that we live in and share a love for our waters here on the South Shore, particularly the North and South Rivers.

The health of our organization and our waters would not be where it is without you, the volunteers and supporters that help us each day. There are three areas of focus that I would like to highlight and recognize just how important you are to the NSRWA.

Each year we present the Barbara Pearson Memorial River Champion Award to an individual or group of individuals who best exemplifies protecting our rivers and watersheds. This year the award goes to our South Shore Legislators and their teams including Senators Patrick O'Connor, Susan Moran, and Michael Brady and Representatives Patrick Kearney, David DeCoste, Josh Cutler, and Joan Meschino for helping us resecure funding for the North River Protective Order, which has been the bedrock of our efforts to protect this scenic corridor since 1978. It aims to protect public and private property, wildlife, fresh and saltwater fisheries, and irreplaceable wild, scenic, and recreational river resources throughout the North River and its connected tributaries.

I also am so grateful for the tremendous group of volunteers, nearly 600 of you this year, who provide us with the energy, dedication, and hands-on execution to fulfill our mission. Each year we recognize a volunteer of the year, and for 2022 we are recognizing Theresa Delahunt as our Volunteer of the year. Theresa is our Volunteer Coordinator who has worked tirelessly in recruiting and coordinating volunteers and ensuring that we had the support staff needed for every event and activity we hosted over the last year.



Lastly, we wouldn't have the scientific support to measure and monitor the health and evolution of our watershed without our Citizens Science volunteers. In 2022, this small army of 200 volunteers supported our staff scientist and our interns in the collection and reporting of the data needed to measure progress and change. One new effort we embarked on was measuring the slope of Duxbury Beach in partnership with UMass Stone Living Labs and Duxbury Beach Association. Our Duxbury Beach Profilers show what citizen science is all about - their tireless effort to measure the physical changes at Duxbury Beach during the entire year, even in the winter, will help provide data needed to help manage the beach as it faces challenges from storms and sea level rise.

I would be remiss if I didn't share how proud we are of our Executive Director, Samantha Woods, who is celebrating her 20th anniversary with the NSRWA. Through her leadership and conviction, she has navigated NSRWA through the changes and challenges needed to grow our organization and communities and to protect this great natural resource, the North and South Rivers.

We are thankful for another year of successful memories and milestones and the volunteers that have supported our vision with your tireless execution!

Thank YOU!

Rick Mayfield, NSRWA President



Sit-in protest of the closing of the North and South Rivers shellfish beds on November 1, 2021.

We Wish to Shellfish! Join Us for Another Sit-In

In August 2020, 600+ acres of recreational shellfish beds were closed in our rivers in order to comply with new commercial shellfish standards. The concern was the potential for virus contamination from the Scituate Wastewater Treatment Plant that discharges into the Herring River. We have been tracking this issue ever since and provide a timeline below of actions that have taken place since the closure. Ironically, due to the drought, water quality as indicated by our bacterial testing results was better than it has ever been. We use the same bacterial indicator as MassDMF for shellfish bed water quality - fecal coliform. Droughts have their silver linings.

Timeline of Closure

August 2020 - DMF notifies Scituate and Marshfield that recreational-only shellfish beds in the North and South Rivers will be closed unilaterally by MassDMF with no public input or discussion. Why? To comply with National and International Shellfish Sanitation standards that allow shellfish to be sold overseas and between states. The standards (not new state regulation) require a 1000:1 dilution closure area around a wastewater treatment plant outfall over the potential (not actual test results) for contamination from untreated viruses in wastewater.

June 2021 Public Meeting - MassDMF attended a Scituate Shellfish Advisory Board meeting and provided their reasons for the closure. Local shellfishermen and women who attended the meeting were dismayed that the closure was not due to any known contamination but rather the threat of contamination.



MassDMF asks for funding to model the North and South Rivers dilution and to monitor the Scituate wastewater treatment outfall for viruses.

July 2021 - NSRWA submits an official records request on the issue.

September 2021 - NSRWA and town representatives meet with the state's Commissioner of Fish and Game to explore alternatives for recreational shellfishing to be governed separately from commercial shellfishing.

November 2021 - NSRWA Shellfish Sit-In. A day later we received a response from the Commissioner of Fish and Game that separating commercial and recreational shellfishing oversight, in their view, is not possible.

February 2022 - NSRWA offers a legal and policy rebuttal to the Commissioner's response that allows the Commissioner to treat these activities separately. No response has been received.

April 2022 - NSRWA comments on Scituate renewal of wastewater permit requesting incorporation of virus testing

on a regular basis. MassDMF shares the results of virus testing from the plant from January 2021 to June 2021 that show very reduced virus in effluent mostly below limits of detection.

June 2022 - Local legislators Rep. Kearney and Sen. O'Connor obtain funding in state budget for the MassDMF to model North and South Rivers dilution rates.

September 2022 - Phone discussions with Jeff Kennedy of MassDMF reveal that the first attempt at modeling showed no shellfish areas in the North or South Rivers were outside the 1000:1 dilution line. Subsequent phone conversations reveal that further research (published in 2015) has been identified that may allow for a 300:1 dilution area to be applied for wastewater treatment plants that use UV in their treatment. Modeling of the 300:1 dilution area indicates that the South River and parts of the North River were outside of the 300:1 dilution area. However, the Herring River and mouth would be within the 300:1 closed area. MassDMF is sampling the Scituate Wastewater treatment plant effluent throughout the fall to ensure it has similar good reduction of virus as was seen in the first half of the year of 2021. DMF proposes a meeting with the Commissioner in October and a public meeting after that. If sampling shows good results, the shellfish beds may be partially reopened in January of 2023.

November 1, 2022 at 12:00pm at Driftway Park - Join us for another Shellfish Sit-In at Driftway Park to help us to continue to put pressure on the state to re-open our shellfish beds!



Students of Gates Middle School in Scituate were given native flowering plant kits to take home, grow, and observe visiting pollinators throughout the season.

Growing Educational Programs to Meet the Needs of Our Communities

Each year, the NSRWA is always looking for new and innovative ways to involve the community in water and environmental engagement. One notable program occurred in spring of 2022 entitled Grow Native Scituate. With grant support from the Scituate Education Foundation, the NSRWA was able to create and deliver a brand new program that engaged the Scituate 6th graders of Gates Middle School in native plant education. Acting as a pilot school, the students of Gates participated in the week-long program which included understanding pollination and local pollinators, native vs. non-native species, and how little things we can do at home can have a big impact on our local community. The program also included fun and hands-on activities like flower dissection, and mapping their yards at home to see what percentage is lawn vs. other more permeable areas. Towards the end of the week the students were then given kits of 4 native wildflower species that they were to plant at home, observe their progress, and document any pollinators that would visit them over the course of the spring

and summer. The NSRWA purchased the native plant kits from Blue Stem Natives, a local women-owned and environmentally focused native plant nursery in Norwell. The students will then share their findings in the fall, a fun start for science class as 7th graders.

Native plants are important to our ecosystem and community in so many ways. Not only are they a source of food and habitat for our local native pollinator species like bees, bats, butterflies, moths, and birds; but they are also adapted to our local climate. This means that once the plants are established, they do not need fertilizer or additional watering, and thus can help protect and save our water. Plus their roots can take in nitrogen and can, in fact, work at removing toxins from rain water before it enters our groundwater aquifers.

This program is a win-win for the watershed, the environment, and the community. The NSRWA is excited to expand Grow Native's reach and impact by "growing" the program into new schools around the watershed!



Eco Exploration #1 explored a salt marsh in Marshfield. Participants learned about how our actions, coupled with climate change, are currently disrupting this important ecosystem. Photo by Terri Birkeland.

Positive Change "STEMs" from Climate Conversations

Keeping with the Growing theme, the NSRWA has a new partner in the community. The Unitarian Universalist First Parish in Norwell awarded the NSRWA with its first grant geared towards environmental stewardship and sustainability.

The NSRWA is running a new program entitled *Climate Conversations Lead to Action*. Through this exciting new program, the NSRWA will lead three Eco Expeditions that explore different areas around the watershed. Each walk will include education on ways that these local ecosystems will be affected by climate change, including hands-on activities for youth. The walks will also include ways each of us can help preserve and protect our environment, as well as how our community can become more climate resilient.

The NSRWA will finish the program by working with the First Parish community members in building a rain garden at the church in the spring, to not only help reclaim rain water into our aquifer, but also serve as a demonstration of how easy and fun it is to build a rain garden at home.



Visit us online at nsrwa.org and connect with us on Facebook ([nsrwa](https://www.facebook.com/nsrwa)) and Instagram ([northandsouthrivers](https://www.instagram.com/northandsouthrivers))

The Vegetation Situation: Protecting and Restoring Habitats

The NSRWA logo has three components - a leaf, a water droplet, and a fish. The spotlight is often on those last two, and you may not realize just how much work we do with vegetation! Plants play a crucial role in coastal ecosystems - eelgrass provides carbon storage and habitat, salt marshes buffer our coasts and feed countless organisms, and the wetlands along our tributaries provide important water quality protection. In restored ecosystems, they are one of the first indicators of recovery. There are also invasive plants that reduce diversity and need to be managed. Here are some of the habitats that we monitor and restore:



Salt Marshes

Where we work: Cohasset, Scituate, Marshfield, Norwell

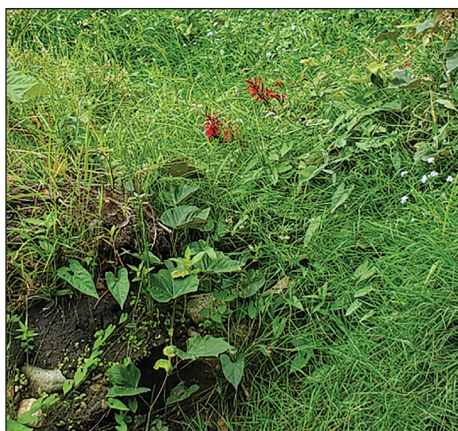
Salt marshes are the iconic vegetated habitat of our estuaries, bordering the rivers with grasses that are tolerant to being submerged and exposed to high salinity. They are one of two vegetated habitats chosen by the MassBays Partnership to indicate changes in estuary health. They are threatened by sea level rise and excess nutrients. Our citizen science "Salt Marsh Sentinels" project engages dock owners in monitoring the marshes near their own homes to track shifts in vegetation due to sea level rise. We also have permanent monitoring sites with data from 2000 and 2014 that we hope to monitor more often in the coming years. Our results thus far show that marsh vegetation type is shifting towards the upland with sea level rise. Finally, NSRWA/MassBays participates in a Salt Marsh Working Group where salt marsh experts are making a plan for restoration and management of marshes statewide.



Eelgrass Meadows

Where we work: Cohasset, Duxbury, Kingston, Plymouth

Eelgrass is a true grass that lives submerged in estuaries and provides food and shelter for fish and shellfish and helps stabilize estuarine sediment. Seagrass meadows (inclusive of both eelgrass and another species, widgeon grass) are the other vegetated habitat chosen by MassBays to track estuarine health. They are threatened by poor water quality especially when water clarity is impacted. We currently have two projects focusing on eelgrass. One, the Eelgrass Blitz, works with volunteer boat captains and community volunteers to use an underwater camera to document presence and abundance. Our results thus far show that Duxbury, Kingston, and Plymouth are continuing to lose eelgrass in some places, while others remain intact. The other project is a collaborative effort throughout MassBays to compare different technologies (satellite imagery, aerial photography, drone photography, side-scan sonar, and diver surveys) for determining the edges of eelgrass beds. Results from that will be available this winter.



Freshwater Wetlands

Where we work: Hanover, Norwell, Plymouth



Freshwater wetlands are a crucial part of the restored ecosystem whenever we remove a dam, providing new habitat along the stream channel. We have monitored the recovery of this habitat as it changes from the former bottom of an impoundment back into a riverine wetland at multiple sites. Over the years, we have documented the return of plants like sedges, rushes, and wildflowers at dam removal sites throughout the South Shore, while also working to control invasive species that could harm the diversity of those wetlands, like Phragmites and purple loosestrife. We are currently continuing post-removal monitoring at the former Peterson Pond Dam on the Third Herring Brook, and working with the Town of Norwell to manage purple loosestrife at Jacobs Pond through the release of Galerucella beetles for biocontrol.

Opportunities

You can help us with our vegetation work in a lot of different ways:

- Protect the existing wetlands and seagrasses along the entire gradient from fresh to salt by keeping fertilizer out of our water bodies, where it can weaken marsh peat and reduce water clarity.
- Maintain a buffer of vegetation between your yard and any wetlands.
- Volunteer formally with us as an eelgrass monitor or a Salt Marsh Sentinel.
- Keep an eye out for dead trees along the wetland/upland interface of the river corridor, which can be our first clue that sea level rise is having an impact.
- Don't walk on marsh or dune vegetation. If you are a boater, don't anchor in a seagrass meadow.



**Massachusetts
Bays** NATIONAL ESTUARY
PARTNERSHIP

Member Corner

This is What a Few of Our Members Said when Joining the NSRWA:



"In memory of my grandmother Jean Foley - who told stories of the start of the NSRWA - and would be so happy and thrilled to see it thrive!" ~ Jessica Foley



"My son Declan loves boating on the North River, thanks for taking such good care of our waterways!" ~ Kerri Nagle



"In hopes my membership will help preserve the North and South Rivers for future generations to enjoy! Also to keep the river healthy for birds and fish." ~ Dave Jordan



"I'll rely often on your website to find more and more things to love about the North and South Rivers. Thank you!" ~Lisa Sheldon

Join or renew your NSRWA membership today knowing your support empowers the NSRWA to work every day on your behalf for healthy watersheds. Our education and outreach programs, and our on-the-ground projects all help to ensure water quality and conserve water in communities on the South Shore. Together, let's restore local ecosystems and help to build climate resilience! Visit nsrwa.org to join or renew today.

Leaving a Lasting Legacy

Having grown up on the North and South rivers, spending thousands of days waterskiing, clamming, boating, fishing, hunting



and just chillin', NSRWA's responsible and forward thinking daily stewardship continues to maintain and grow this incredible resource in a good way for generations to come.

This well-run organization has inspired me to estate plan and donate a significant legacy financial gift when I pass on to help NSRWA carry the torch to keep the mission candle burning to live on. I encourage others to do the same.

With gratitude,
Brad White, Marshfield Hills

NSRWA's Legacy Circle honors those who have included the NSRWA in their estate plans. Their visionary support will ensure future generations may enjoy and rely on precious local waters. Email samantha@nsrwa.org for more information about naming the NSRWA as a beneficiary in your estate plans, and let us know if you've already included NSRWA in your estate plans so we may welcome you to our Legacy Circle.

A special thank you to our current Legacy Circle members:

- William and Susanne Bottiggi
- David DeGhetto
- Betsey and Robert Detwiler*
- Peter and Julie Kelly-Detwiler*
- Herb and Pauline Emilson*
- Craig and Danny Hannafin*
- Richard and Jackie Leach*
- Deborah Lenahan*
- Pieter and Susan Mimno
- Brad White
- Michael and Susan Wolfe*

*Founding members



Protect Our Local Waters with Your Required Minimum Distribution

Are you required to withdraw a minimum amount from your retirement plan account? Help advance our mission to protect local waters by asking your IRA custodian to make a distribution for you directly to the NSRWA. That distribution won't be counted as taxable income and will count toward your RMD, although it can't be taken as a charitable deduction. Ask your tax advisor and/or your IRA custodian for information specific to you. NSRWA's non-profit tax ID# is 23-7181992.

The 2022 Drought from Different Perspectives

The NSRWA asked different people for their perspectives on this year's drought:

"I was surprised that we were hit by drought again, so close behind last year's drought, and that it so quickly went to a severity level 3 in several regions.

It's concerning that streamflow is being impacted to such a great extent across the Commonwealth. We are seeing record low flows this year and the record extends back 80-130 years. That is surprising and concerning."

~ Vandana Rao - Massachusetts Director of Water Policy, Executive Director of State's Water Resources Commission



"The regional water drought combined with this past summer's town water ban has brought a new awareness and renewed interest to our water issues. Outside of planned updates to improve our town's water infrastructure the understanding that conservation is a large, necessary piece of solving the problem appear to be growing. It has also been incredibly helpful to collaborate and partner with organizations like the NSRWA to continue to spread the word and share information with our residents."

~ Tracy Marino, Pembroke Selectwoman



"We are experiencing a significant drought for the second time since 2016 where we have had at least a 10" water

deficit. From a waterwise perspective, it seems prudent to plan for this happening with greater frequency. As home gardeners, there are steps we can take to minimize water use and still maintain ornamental plantings and vegetable gardens. First - minimize your lawn and limit irrigation. As we have seen already with just a little rain, a brown lawn is not dead, just dormant. Plant native perennials and avoid cultivars. For sun Black Eyed Susan, Catmint, Coneflower, and Sedums are tough and hardy. In shade *Epimediums*, Solomon's Seal, *Hellebores*, *Heuchera* and *Hosta* all perform well once established. We all need to pull together to preserve our most precious resource - an adequate supply of clean and healthy water! ~ Craig Hannafin - Gardener



Get Out and Walk with the NSRWA this Fall and Winter

Fall into Nature Guided Walk Series

- Hobomock Trails, Pembroke - Sunday, November 6 from 10:00-11:30am
- Forge Pond Park, Hanover - Sunday, November 13 from 10:00-11:30am
- Couch Beach, Marshfield - Sunday, November 20 from 10:00-11:30am
- Chapman's Landing, Hanover - Sunday, December 4 from 10:00-11:30am
- Carolina Hill, Marshfield - Sunday, December 11 from 10:00-11:30am

NSRWA Walking Club

- Norris Reservation, Norwell, with Guest Host Tracy Daly - Saturday, November 12 @ 10:00am
- Webster's Wilderness, Marshfield, with Guest Host Roger Whidden - Saturday, December 10 @ 10:00am

Visit [NSRWA.org/events](https://www.nsrwa.org/events) for more information and registration or scan QR code with smartphone camera.



Growing

Continued from Page 1

ed Grow Native with 100 6th graders at the Gates Middle School. Our goal is to provide students (and their families) with alternatives to grass to reduce outdoor watering while at the same time enhancing native pollinator habitat - making pollinators and our water supplies more resilient to climate change. For more information on this exciting new program see page 4.

Growing Water Supply Solutions for Climate Resiliency

Growing our water supplies' resiliency to a changing climate is critically needed in our region as we see streams and water supplies critically low during increasingly intense drought periods like we are experiencing this year. To address this issue we formed a task force with our partners recently to address long term water supply

sustainability in the region and restore flows in damaged watersheds. Composed of the South Shore Chamber of Commerce, South Shore legislators, watershed associations, and regional planning agencies the group began meeting this fall and will continue to engage stakeholders on this issue. Climate change is simultaneously casting a spotlight on the mismanagement of our water and provides an opportunity for us to rethink our relationship with water to meet that challenge.



WaterWatch

NORTH AND SOUTH RIVERS WATERSHED ASSOCIATION
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- The 2022 Drought from Different Perspectives

Save the Date for the New Year's Day Walk

**January 1, 2023
1:00-3:00pm**

More information on the location to come. Check our Events web page for details.



Join or Renew Your Membership Online!

Scan QR code with smartphone camera (Free gift for first 100 people)



Planet Subaru Shares the Love with NSRWA

The NSRWA was once again chosen as the recipient of the Planet Subaru Share the Love® campaign. The \$16,500 donation is being used to get more people outdoors by supporting NSRWA-led outdoor programs, the website with information to get outdoors, and monthly blogs on ways to enjoy nature. These funds power the Explore South Shore section and Contest (QR code) of the NSRWA website to help people get the information they need to explore the outdoors on the South Shore.



WaterWatch Talks and Walks (Formerly WaterWatch Lecture Series)

**Save the Date - Wednesdays, January 11 -
March 1, 2023 at 7:00pm**

Join the NSRWA and Mass Audubon South Shore Sanctuaries for a series of hybrid lectures. There will also be optional walks to go with the series. More info to come.