



WaterWatch

THE NORTH AND SOUTH RIVERS WATERSHED ASSOCIATION

Protecting our Waters Since 1970



Keeping Fish Out of Hot Water in Norwell and Hanover

The Third Herring Brook will be able to keep its “cool” with new protections provided from being designated a Coldwater Fisheries Resource (CFR) by Massachusetts Division of Fisheries and Wildlife. CFR-designated streams support fish that require cold water such as native brook trout, slimy sculpin, black-nosed and longnose dace, and white suckers. These fish are rarely found in our area anymore because we pipe hot runoff into our streams from pavement, have old dams in our rivers, and withdraw too much water from our streams particularly in the summer.

Fish Tagging – Not A Game

Last year our ecologist, Sara Grady, and Massachusetts Division of Fisheries and Wildlife Biologist, Steve Hurley surveyed the Third Herring Brook and found that native eastern brook trout were using the brook in the area where

we had removed the Tack Factory dam in 2017. Prior to dam removal, we had known of remnant populations in tributaries to the Third Herring Brook. We speculated that with the dam removed and temperatures reduced (the former pond temperatures were well over 80 degrees in the summer!) the populations would be reconnected. We monitored their movements by inserting electronic tags into the fish and found they are using the mainstem of the brook after hundreds of years of being cut off!

Science Raises the Standards

Finding these fish meant that the entire Third Herring Brook from Jacobs Pond down to the North River is now officially protected as a Cold Water Fisheries Resource. Any future development or redevelopment along the brook will be held to a higher standard for treating and recharging stormwater

runoff from pavement to protect this critical and increasingly rare resource – cold, clean, flowing water.

Future Development

Recently, the designation was put to the test with two redevelopments on Route 53 - the Hanover Mall and a Cumberland Farms. Both redevelopment projects will now be required to recharge their stormwater runoff into the ground to slow and cool the water as it runs off the pavement. It is rare to see this series of events happen in such a short time, from dam removal in 2017, to scientific monitoring results in 2018, to protection enacted in 2019.

Please note: Catch and release is advised for any brook trout captured in the Third Herring Brook system to help protect and restore our limited wild brook trout resources.

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.*

Our goal for 2020 is to double the number of people we educate and engage.

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NSRWA

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All Good Things are Wild and Free

On the last glorious weekend of the summer, we set out Sunday morning at 3:30 a.m. to fish for striped bass in the North River. Fishing with flies from a canoe, we were hoping the fall blitz was still on as we set out with red LED headlamps (fish allegedly can't see red light) and made our way through the shadows of boats and docks from Roht Marine. There was a waning moon, lots of stars and utter silence.

Recognizing shapes was hard. Was that the marsh edge or a jetty or catwalk? Just before the gut by the red house in the river was a catwalk to the right with a light at its end, throwing a greenish circle in the water. All we heard was the sound of our canoe. One hundred feet from the catwalk the water suddenly exploded with bait fish and striped bass, "schoolies." It was so bizarre we had to look twice to understand what we were seeing. The light attracted the bait and the remaining juvenile stripers (the big fish were gone to Duxbury Bay and the Canal) were in a feeding frenzy.

We paddled into the chaos, with sudden splashing sound and fury, feeling like we were in a wildly boiling pot of water. Schoolies were leaping a foot out of the water, too many to count. We pulled the canoe over to the rocks and threw our flies in. My fishing buddy caught one and I watched my fly bounce on the back of another. Suddenly it was over. It stopped. Utter silence returned and all that was left was the moving tidal water under the light. We fished until 10:30am, first in the marsh in the dark and then way out on the sand bar at the mouth in waist deep water watching the sun rise out of the sea. Not another bite, but the amazing beauty of the marsh and a Spit completely devoid of human life. As the sun rose, we heard the sounds of birds; the marsh was full of cranes and blue herons, mergansers and gulls. Paddling back, I thought of Thoreau's book subtitle, "all good things are wild and free."

In spite of being "skunked" for the weekend I couldn't help feeling embraced in beauty and majesty of our rivers; in this special place to have this amazing experience. I thought especially about the almost 50-year effort of our NSRWA to protect that wildness and keep the rivers clean and free. I thought of our recent efforts to remove the dams on the Third Herring Brook at the YMCA and



Tack Factory Pond and how a combination of good solid science has informed our advocacy and commitment to protect our natural resources.

The dams gone, nature has not forsaken us, and she is rebuilding the wild again. Native brook trout have returned to the stream which has led to the designation of this tributary as a Coldwater Fishery. Resulting from many years of hard work and the collaboration of our Executive Director Sam Woods with Steve Hurley from the Commonwealth's Division of Fisheries and Wildlife, and the dedicated members of the Sea Run Brook Trout Coalition, this designation has required the Hanover Mall redevelopment (and all other future development) to treat their stormwater to a much higher standard, to preserve these efforts and give nature a chance to restore the wild and keep it free for us all.

This year at our annual meeting we will honor Steve Hurley and the Sea Run Brook Trout Coalition with the Barbara Pearson Memorial Award. Science informing advocacy and policy and working with fellow stewards of the environment works and protects our natural resources so all of us can discover the wild and free of nature even in the dead of night on the last weekend of summer.

Peter Hainer
President, NSRWA Board of Directors

Healthy Waters Don't Happen On Their Own



Juvenile and adult bald eagles taken from the NSRWA pontoon boat by Quint Waters.

Bald Eagles Back on the South Shore

What a thrill to see bald eagles return to the North River, after a 100+ year absence! What brought them back? By providing protection, habitat, and food, we made them welcome.

Bald eagle populations declined rapidly in the 1900's due to widespread use of the pesticide DDT, which disrupted reproductive function. DDT was banned in 1972, and the bald eagle was listed as an Endangered Species in 1978, but it took decades – and interlocking layers of action – to rescue our national symbol from near-extinction.

One action was rebuilding population. Locally, this began in 1982 with a joint effort by the Division of Fisheries and Wildlife and Mass Audubon. Over time, the number of nesting pairs increased from 1 to 38.

Another action was conserving their habitat. The 1978 North River Protective Order prevented overdevelopment. This, combined with acquisitions of conservation land in the river corridor, assured plenty of the bald eagle's preferred territory – forested areas with expansive views, near large bodies of water.

A third action was restoring food sources. As dams were removed and rivers flowed freely, migratory herring and trout returned, attracting bald eagles and other natural predators.

As we consider the impacts of climate change, it's important to remember that our actions absolutely make a difference. It doesn't happen overnight. It requires time, effort, and action from federal, state and local governments, as well as non-profits and individuals like you.



Clean Enough for Future River Restoration?

A public meeting was held in September to seek input for three alternative clean-up proposals of the contamination at the Fireworks Site located on the Drinkwater and Indian Head Rivers in Hanover/Hanson.

The contamination at this site stems from multiple uses including the manufacturing of fireworks and munitions for World War II. The main contaminants of concern include mercury, lead and volatile organics. Since 1995 the Massachusetts Department of Health has issued a health advisory that fish caught in waters from Forge Pond dam in Hanover to the Route 3 overpass should not be eaten due to mercury contamination. Extensive munitions and ordinances were also left on the site and are currently being removed.

The clean-up is expected to cost from \$78 to \$121 million. The costs will likely be borne by the responsible

parties including MIT, the Department of Defense, and others who operated at the site. The alternatives currently being considered include removing the contamination in the waterways, land and groundwater either to targeted levels that are protective of public health and the environment or approaching natural levels. The costs difference between the most likely two alternatives is approximately \$5 million.

We are concerned that the aging Factory Pond dam, which holds back the contaminated sediment now, could fail in the future, allowing any remaining contamination, if not removed, to move downstream. The alternatives should review the structural integrity of the dam in larger storm events and the clean-up should not prohibit future dam removal and river restoration efforts.

The proposed plans and our concerns can be found at nsrwa.org.

Eelgrass Blitz Engages Local Boaters

In total 1,279 acres of eelgrass beds are believed to have been lost in Duxbury, Kingston, and Plymouth Bays between 1995 and 2017. Eelgrass beds are ecologically important to the health of estuaries because they trap atmospheric carbon, hold sediment in place, and provide critical food and shelter for a variety of marine organisms.

Over 5 days in August, as part of our partnership with the Massachusetts Bays National Estuary program, we enlisted 20 volunteers, 2 interns and 5 captains with boats to survey 119 sites in the Bays to document the presence and health of eelgrass. The data will be compared to previous year's mapping to determine if

any additional eelgrass has been lost. Stay tuned to our e-news for results!



MassBays South Shore Coordinator and NSRWA Watershed Ecologist Sara Grady waits to take photos of the estuary bottom with a drop camera thrown by volunteer Nicholas Hudanich.

Engaging Our Communities with Art and Music

Nature enthusiasts hear our message loud and clear, but what about those for whom the word “conservation” tends to elicit a yawn? This year – in an effort to reach different audiences – we’ve become more creative in our approach, engaging people through art and music.

Fish Out of Water Campaign

Our Fish Out of Water campaign employed public art to illustrate the importance of water conservation. This summer we collaborated with 11 area artists to customize fish-themed wall hangings, which were displayed in local libraries, businesses and community centers. Over 850 free raffle tickets were entered, with the winners taking home beautiful and thought-provoking works of art.

Did you know that the water we use in our homes and yards is the same water that feeds our rivers, streams and ponds? Especially in the summer, when household water use doubles, regu-



Fish Out of Water by Howie Green, Boston

larly irrigating your lawn contributes to reduced streamflow and drought, which can trap migratory fish upstream. The Fish Out of Water campaign, sponsored by our WaterSmart program, helped to spread awareness of the impact of household water use on the world around us.

Peace, Love, and Scitstock

Music was another vehicle for spreading the word. On September 7th, the Bergsten family hosted Scitstock (think “Woodstock”). More than 350 people brought their picnic baskets and lawn chairs and gathered in a grassy meadow to enjoy an evening of live local music. The event organizers very kindly donated all of the proceeds to NSRWA and helped us connect with an audience that might not ordinarily be tuned in to our cause.

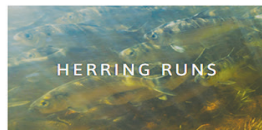
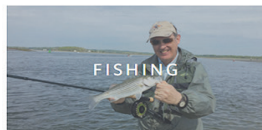
This kind of exposure is priceless. As Executive Director Samantha Woods explains, “Environmental issues are often framed by our scientific understanding, but we know that humans are motivated by their emotional responses. Art and music inspire us, foster creativity, and help us express our values. Engaging people in caring for the environment through art and music allows us to emotionally connect them to our work.”



EVENTS MEDIA JOIN CONTACT

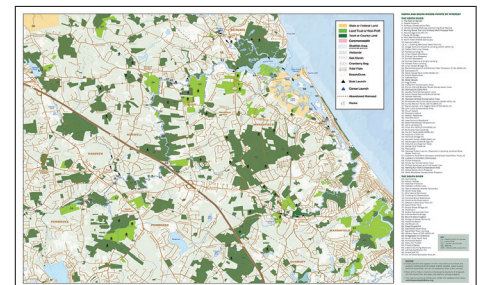


WHAT WE CARE ABOUT • PROTECT OUR WATERS • GET OUTDOORS • GET INVOLVED • GET WATERSMART • GIVE TODAY!



Explore South Shore Phase 2 Begins

NSRWA has begun work on Phase 2 of our Explore South Shore website. Last spring we identified 105 points of interest along the North and South Rivers and their tributaries, and created web pages with photos, trail maps, tide and parking information, plus lots of details on each property’s history, wildlife, and interesting features. This year we will expand Explore South Shore to include many more hiking, boating, fishing, and paddling spots on the South Shore. We will be focusing on our watershed towns, but also including regional destination properties and some of our other favorites. Visit www.ExploreSouthShore.org, and discover new ways to explore the natural world of the South Shore.



Find Your Next Adventure with the New Guide Map!

Whether you enjoy walking local trails, fishing, kayaking, boating, or swimming, you can find your next adventure with the new NSRWA Guide Map!

Current NSRWA members will get their Guide Map in the mail. Not a member, no problem – join or renew today! We will send you a free map with your membership packet.

NSRWA’s newly updated Guide Map has more than 90 places for you to visit – from salt marshes to tide pools, local woods to historic points of interest. Our Guide Map shows you where to go for a walk, access points to launch your kayak, and helpful information about parking and much more. Plus, when you pair it with the information on ExploreSouthShore.org, you can learn even more about things to do outdoors.

Education Expands to Meet Community Needs

In addition to continuing the success of familiar programs like Estuary Explorers and Water All Around You, the NSRWA's environmental educator, Brian Taylor, has ushered in a new era of programming. Now that Brian is about to round-out his first full year with the organization, let's take a look at what new groups and programs he's brought to the watershed.



Summer campers from Sunset Point Camp in Hull had fun discovering life in the tide pools during NSRWA's Estuary Explorers. Sunset Point is part of the Catholic Charities of Greater Boston, providing youth with a great overnight summer camp experience. The NSRWA was so excited to bring them out on the North River for the first time!



River Adventures Rocks!

In past years, NSRWA has partnered with the South Shore YMCA to offer several summer kayaking programs called River Adventures Camp. This year was a big step forward because our educator, who is a lifeguard, wilderness first-responder, and experienced river guide took the lead on the trips. Brian planned week-long day programs bringing South Shore area youth on outdoor adventures that included 5 days of kayaking and swimming. Through this program, the campers experienced the rivers to their fullest by discovering local flora and fauna, promoting environmental stewardship, building confidence as paddlers and outdoor adventurers, and having fun exploring nearly 20 miles of our rivers!



New South Shore Guides

This year we formed a new partnership with the Norwell Recreation Department. Through this collaboration, the NSRWA offered a week long recreation camp entitled South Shore Guides. This new program brought local Norwell youth on outdoor adventures in and around their watershed including fishing on the North River, hiking and canoeing around Jacobs Pond, and even a pontoon ride out to the Spit. Through this program, local youth learned about our watershed, and how to be responsible outdoor adventurers. We are excited to offer more programs like these with other towns in our watershed!

Pembroke Students Discover Nature in Their Own Backyards

By developing new programs and reaching more youth, NSRWA has been able to better serve the needs of the public, instill water and environment-based stewardship, and advance our mission forward. One such program reminds us that we don't need to be "nature people" to have an eye-opening outdoor experience. Our environmental educator, Brian, answered the call from a teacher at Pembroke Middle School looking for a field trip for her



Pembroke Middle School students look in amazement as they see river herring during spring migration through a park in their town.

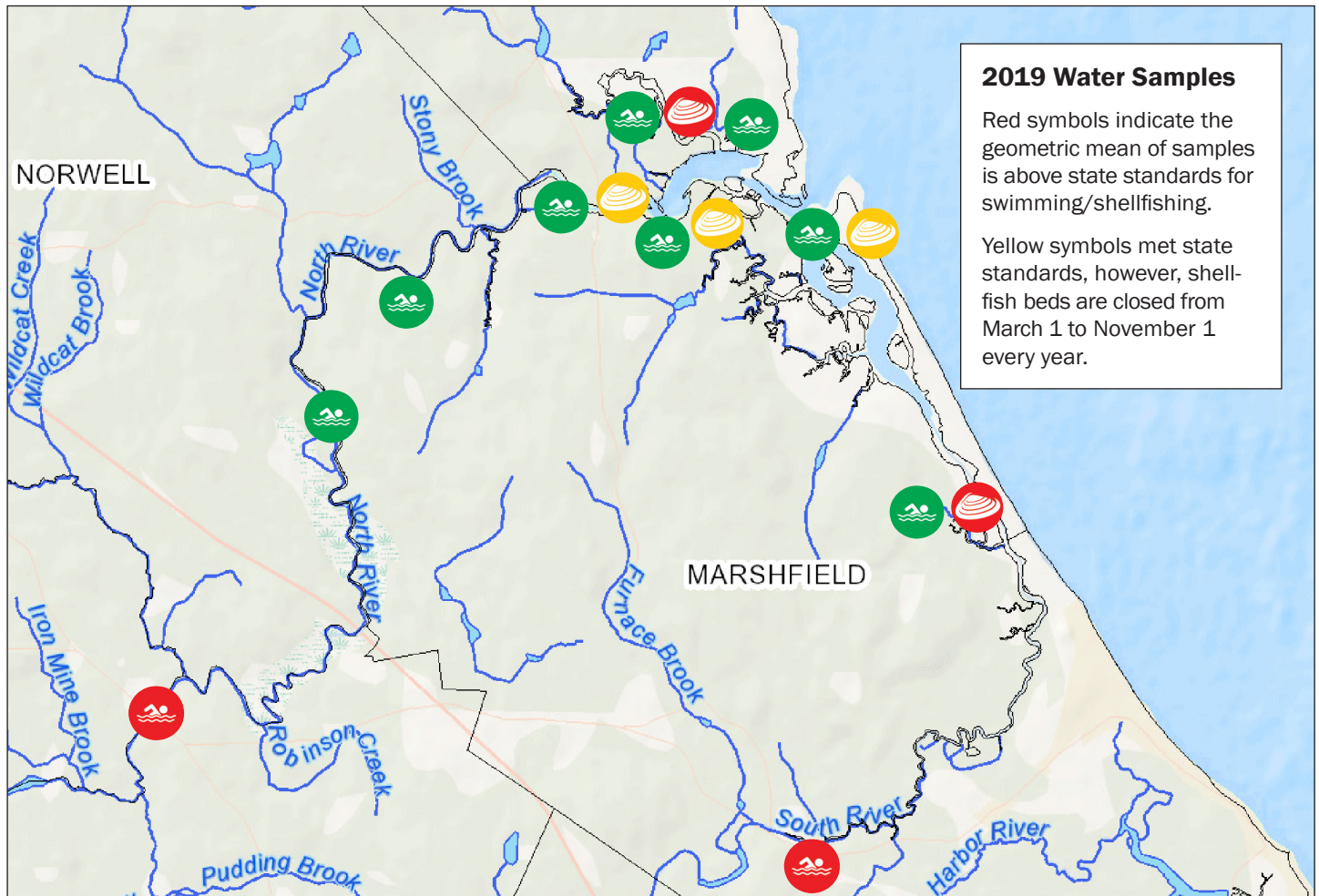
"I've lived in Pembroke my whole life, I never knew this amazing migration was happening right here in my town!"
~ Pembroke Student

seventh grade engineering club. Thanks to the help of the Pembroke Herring Commission, the students were able to discover how the commission uses unique waterway designs

and technology to electronically count the herring as they pass by on their migration up stream.

Through this program, these future engineers were able to understand the importance of these fish within their ecosystem, as well as discovering how certain engineering practices can be utilized to benefit their environment and community.

Measuring the Health of Our Estuaries



2019 RiverWatch Monitoring Shows Influence of Stormwater

This year, thanks to a MassDEP Watershed Monitoring Grant, we were able to test shellfish growing areas weekly through September. The grant also funded additional headwaters sampling that showed high bacterial counts

in the upper tributaries, especially Longwater Brook in Hanover (not shown).

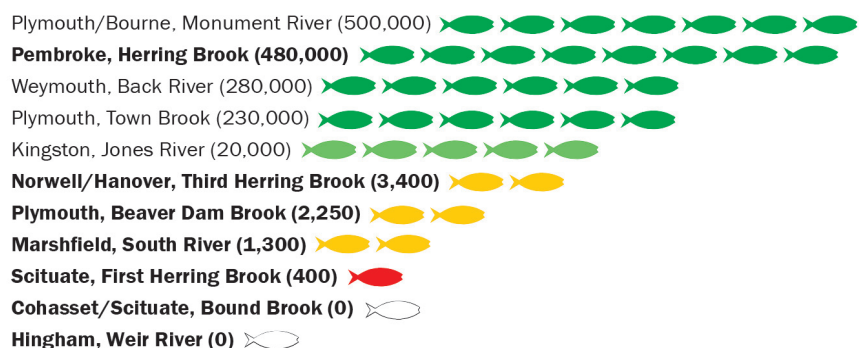
Our sampling showed that stormwater is still a major contributor of bacteria, especially a sampling round on July 24th that occurred after 1.8" of rain.

Sampling also showed higher bacteria in the closed shellfish growing areas at the Driftway and Julian St. sites (red shellfish) than the conditionally approved areas (yellow) closer to the mouth.

River Herring Runs on the South Shore in 2019

The South Shore has many herring runs, but not all are the same, with population estimates ranging in magnitude from a few hundred to hundreds of thousands. In many cases, the smaller runs have been limited in the past by lack of connectivity due to dams. Places where passage has been improved, like Town Brook in Plymouth and Herring Brook in Pembroke, have seen their populations increase with greater access to habitat and stewardship.

River Herring Runs on the South Shore in 2019



Count numbers are rounded and based on best available data from 2019 herring counts. Sites in bold are coordinated by NSRWA/MassBays.



2020 is NSRWA's 50th Anniversary!

In 2020 the NSRWA will celebrate its 50th anniversary! We have grown significantly as an organization since our start in 1970. What began as a small group of concerned South Shore citizens has blossomed into a regional force comprised of more than 1,500 individuals, families and businesses. As we plan for the decades ahead, let's take a moment to reflect on our accomplishments thus far.

1970

1980

1990

2000

2010

In the 1970s, we:

- Obtained National Natural Landmark status for the North and South Rivers
- Passed the Scenic Protective Order, making the North River the state's first and only scenic protected river

In the 1980s, we:

- Hired our first professional staff
- Brought a lawsuit against the Scituate Wastewater Treatment Plant, forcing the town to address operational problems that affected water quality

In the 1990s, we:

- Began our citizen-led water quality monitoring program
- Worked with local agencies to mitigate pollution from storm drains and septic systems
- Reopened 293 acres of North River shellfish beds

In the 2000s, we:

- Worked with Marshfield to expand its sewer system, eliminating sources of contamination in the South River
- Promoted the Community Preservation Act, preserving over 1,800 acres of land across the South Shore
- Tackled water conservation issues with our regional Green-scapes program
- Expanded the shellfishing season in both the North and South Rivers

In the 2010s, we:

- Removed two dams on Third Herring Brook, the culmination of a decade of work to open 9 miles of stream for migrating and native fish
- Reopened 313 acres of South River shellfish beds
- Expanded our "Water All Around You" education program, reaching 2,500 students annually in 11 towns
- Broadened our citizen science monitoring efforts -- to include river herring, horseshoe crabs and salt marshes
- Increased our outdoor recreation offerings



NSRWA's Legacy Circle

"We have been supporting the NSRWA for years as it is very important to do what we can to help ensure the quality of our watershed and way of life on the South Shore. Becoming a legacy donor is just an extension of that continued support. It was a simple process of stating our intentions in our will to include a donation to the NSRWA along with other organizations who we want to support."

~ Bill and Susanne Bottiggi

Protecting our local waters requires constant vigilance. Please consider leaving a legacy gift to the NSRWA.

Legacy Circle Members

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

Celebrate 50 Years With Us!

Throughout 2020 we will be hosting a wide variety of special activities and events designed to celebrate our history, explore the South Shore, and empower you to better understand and protect local waters. Here's a sneak peek at a few of next year's activities:

New Year's Day Walk – We will start our 50th year by going back to where it all began – the Driftway Park in Scituate. It was at this spot that concerns over declining wildlife in our salt marshes inspired our founder, Jean Foley, to take action to ensure clean water for people and wildlife by starting the NSRWA. Come find out more about some of the battles, wars and skirmishes that the NSRWA has fought at this location to stand up for the Herring and North Rivers.

50 Places to Explore will highlight 50 of our favorite places to explore across the South Shore, with us or on your own – including undiscovered natural treasures where you can walk, paddle, picnic, fish or snowshoe!

50 Actions to Protect Water will provide you with simple things to do to be a water warrior throughout the year!

50th Anniversary Party – September 18, 2020. Don't miss the biggest party we have ever had! Save the date for next year, there will be more information to come.

Stay Connected - Stay tuned for fun pop-up events by signing up for our e-news at nsrwa.org or follow us on Facebook, on Twitter @nsrwa and Instagram at [northsouthrivers](https://www.instagram.com/northsouthrivers).



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Join Us for Fall and Winter Walks in the Watershed

- **November 11** - Hobomock Trail, Herring Brook - Pembroke
- **November 29** (Black Friday) - Forge Pond, Indian Head River - Hanover
- **December 21** - Solstice Walk at Norris Reservation, North River - Norwell

For more information on these walks and more, visit nsrwa.org or sign up for our e-news.

Save the Date

NSRWA Annual Meeting

Friday, November 1, 2019
South Shore Natural
Science Center
7:00 Reception
7:30pm Meeting

New Year's Day Walk

Wednesday, January 1, 2020
Driftway Conservation Park,
Scituate
1:00pm

WaterWatch Lectures

Wednesdays, January 15 -
March 4, 2020
South Shore Natural
Science Center
7:00pm