



CITIZEN

WHAT YOU CAN DO
TO HELP IMPROVE
OUR ESTUARIES



PREP

Piscataqua Region Estuaries Partnership



Coastal Research Volunteers beach profiling. Photo by E. Lord

PREP is your partner in clean water solutions and go-to resource for the latest data on the health of our estuaries.



PREP GOAL Encourage all who live, work, and play in the Piscataqua Region to take actions to help protect and preserve the places we love.

About This Guide

From the headwaters in Wakefield, New Hampshire, and Acton, Maine, to the coast, the Piscataqua Region watershed encompasses 1,086 square miles, 52 towns, and more than 380,000 citizens. Since 1995, the Piscataqua Region Estuaries Partnership (PREP), as part of the United States Environmental Protection Agency's National Estuary Program (NEP), has been committed to monitoring, protecting, and preserving these nationally significant lands and waters.

To better understand these special places, PREP tracks environmental trends through a long-term monitoring programs. Every five years we release a *State of Our Estuaries* report to provide decision-makers, communities, and **citizens like you** a comprehensive look at the health of our region's estuaries—Great Bay and Hampton-Seabrook.

The *2018 State of Our Estuaries* report sends a clear signal: **our estuaries have declined due to stress and they are losing resilience to sustain themselves in the face of growing pressures that include a changing climate, alterations in land use, and a growing population.** Fortunately, there are simple actions we, those who live, work, and play in this region, can take to improve water quality and ensure healthy communities.

This *Citizen Guide* is a companion document to the *2018 State of Our Estuaries* report. It contains specific actions you can take at home, with your family, in your community, and regionally to become a **Clean Water Champion!** It even includes a fold-out poster that you can hang on your fridge, wall, or office as a quick reference for what you can do to help our estuaries!



Salt marsh along the banks of the Great Bay Estuary. Photo by E. Lord

PISCATAQUA REGION WATERSHED

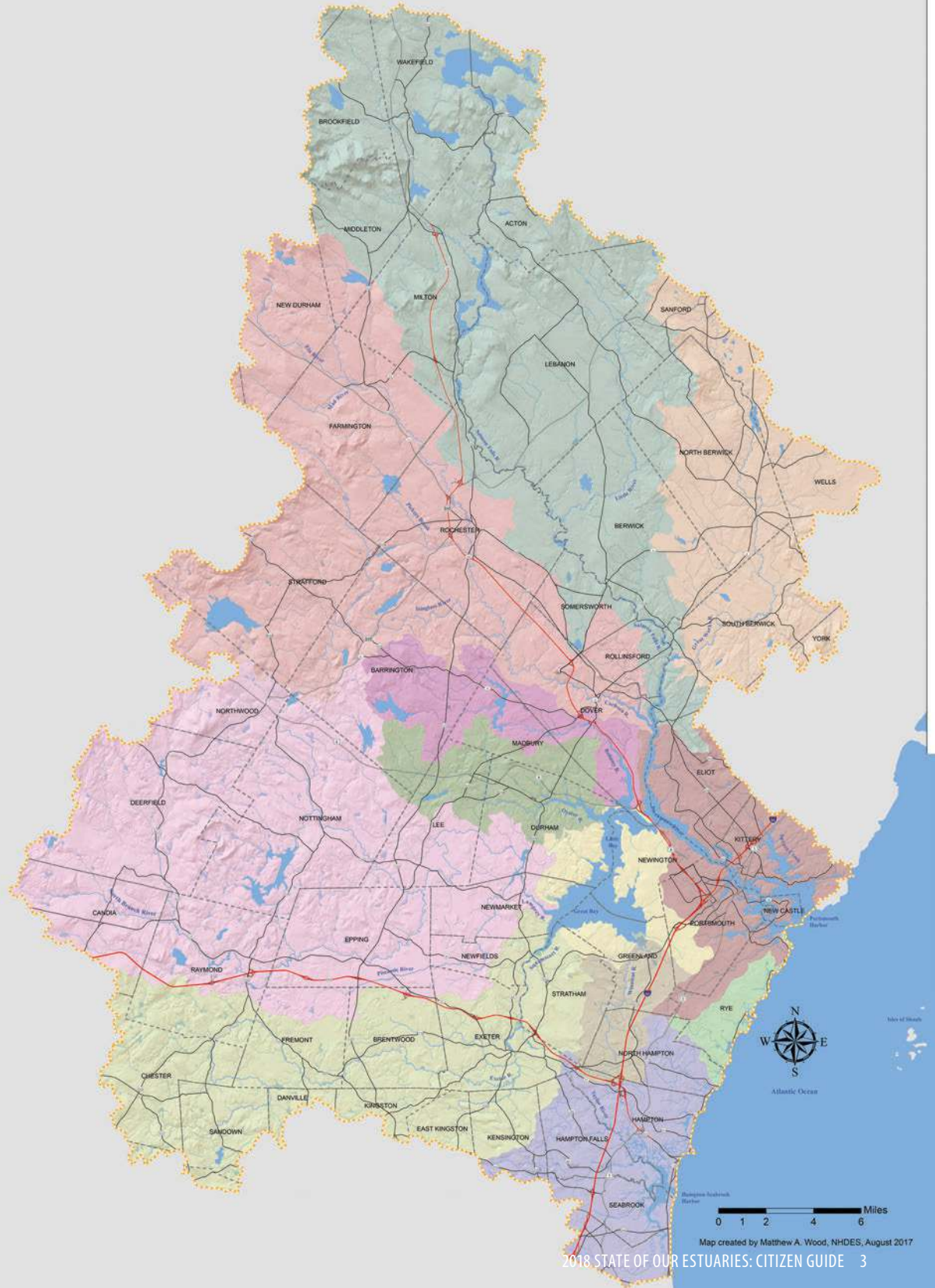
Rivers flowing from 52 communities in New Hampshire and Maine converge with the waters of the Atlantic Ocean to form the Great Bay and Hampton-Seabrook estuaries. The watershed covers 1,086 square miles. These estuaries provide critical wildlife habitat, nurseries for seafood production, buffering from coastal flooding, recreational enjoyment, and safe harbor for marine commerce. Our estuaries are part of the National Estuary Program, and recognized broadly as exceptional natural areas in need of focused study and protection.

GREAT BAY ESTUARY

The entire Great Bay Estuary system, including all seven tributaries, Great Bay, Little Bay, Piscataqua River, and Portsmouth Harbor.

GREAT BAY

The Great Bay portion of the Great Bay Estuary—south of Adams Point.



BECOME A CLEAN WATER CHAMPION

2018 STATE OF OUR ESTUARIES INDICATOR SUMMARY

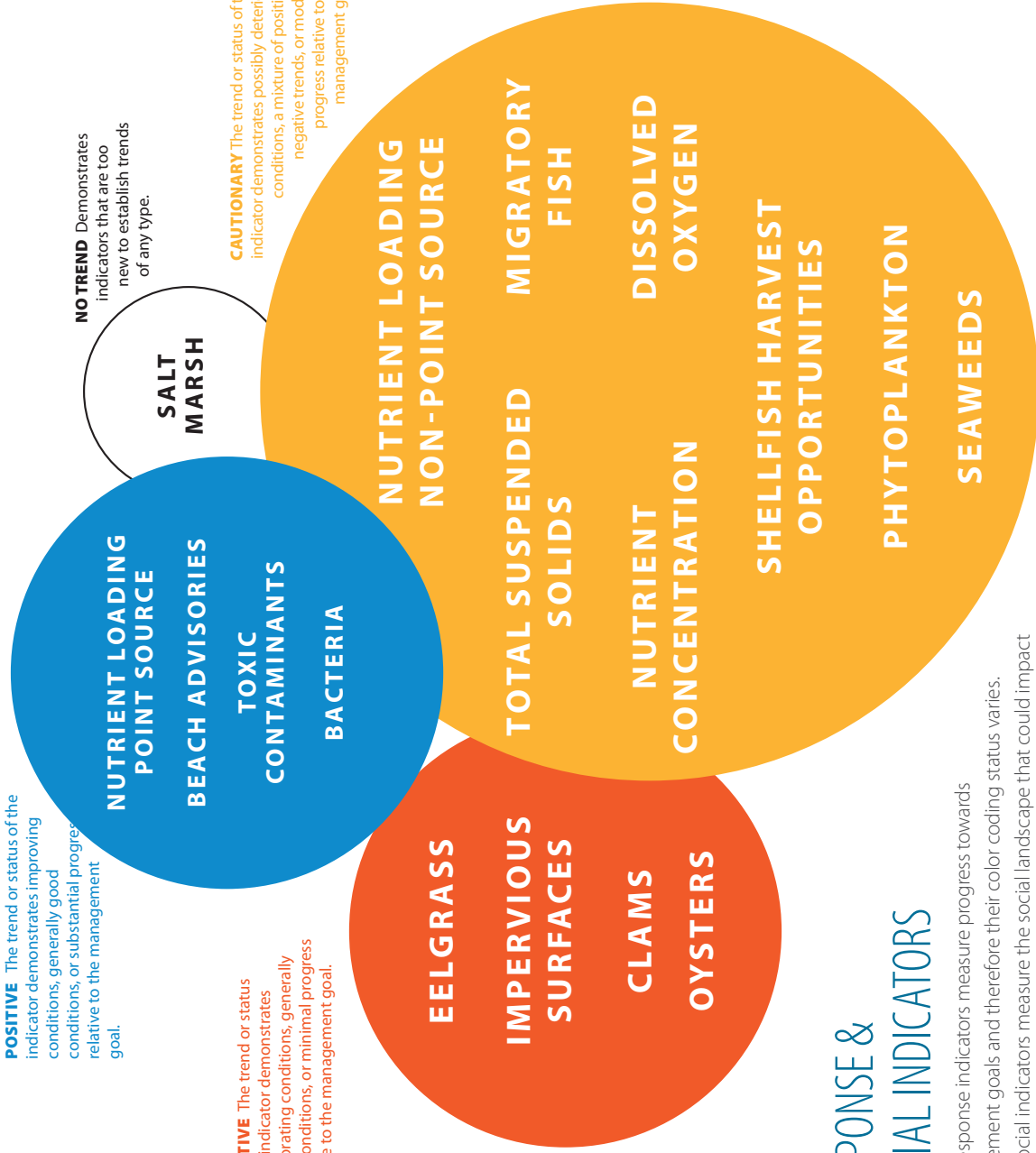
4 ENVIRONMENTAL INDICATORS ARE NEGATIVE 8 ENVIRONMENTAL INDICATORS ARE CAUTIONARY 4 ENVIRONMENTAL INDICATORS ARE POSITIVE

POSITIVE The trend or status of the indicator demonstrates improving conditions, generally good progress, or substantial progress relative to the management goal.

NEGATIVE The trend or status of the indicator demonstrates deteriorating conditions, generally poor conditions, or minimal progress relative to the management goal.

NOTREND Demonstrates indicators that are too new to establish trends of any type.

CAUTIONARY The trend or status of the indicator demonstrates possibly deteriorating conditions, a mixture of positive and negative trends, or moderate progress relative to the management goal.



RESPONSE & SOCIAL INDICATORS

The 4 response indicators measure progress towards management goals and therefore their color coding status varies.
The 3 social indicators measure the social landscape that could impact environmental indicators.

WHAT YOU CAN DO

YOU AND YOUR FAMILY



AROUND YOUR HOME

Maintain Your Septic System Dumping chemicals down the drain interferes with the ability of a septic system to process waste. It is recommended that septic systems be pumped every two to three years. Failure to have a septic tank pumped can cause premature failure and overflows that pollute water and threaten public health.

Choose Eco-Friendly Products “Environmentally friendly” products, which are less resource-intensive to make and less harmful when used, reduce the number of contaminants that could find their way into our rivers, lakes, marshes, and bays.

Dispose of Pharmaceuticals, Paint, & Other Chemicals Responsibly Leftover medicines, paint, pesticides, or other chemicals must be disposed of safely and should never be poured down the drain or flushed. Contact your town to learn about hazardous waste collection in your area.



IN YOUR YARD

Capture the Rain Directing downspouts into rain barrels, lawns, or rain gardens helps slow stormwater runoff, reduces the amount of polluted water running off your land, and—in the case of rain barrels—can be reused to water your garden.

Build Healthy Soil When mowing your lawn, set the blade to 3” or higher and leave clippings. This will reduce the need for water and synthetic fertilizers. If necessary, supplement your soil with mulch, compost, or other all-natural soil amendments.

Use Less Pavement Instead of paving, use pervious paving stones set into permeable stone dust, or try crushed stone driveways instead of asphalt. This will allow the rain to soak into the ground instead of running off.

Grow Less Lawn & More Native Plants Gardens allow for more water to soak in than lawns, and can be great for pollinators, too! Use erosion control mulch to stabilize bare soils and sloped areas.



WITH YOUR VOTE

Vote for Clean Water Support protections for clean water in your community such as upgrades to wastewater treatment facilities, stormwater management projects, land conservation bonds, and natural resource protection regulations (i.e. those that protect buffer lands along water bodies).



WITH YOUR TIME

Get Involved Local and regional conservation organizations and watershed organizations rely on volunteers. Whether you want to get dirty in the field, teach the next generation about protecting our environment, or help stuff envelopes, our community needs people like you! You can also make a difference by volunteering on your town’s conservation commission, planning board, energy committee, or select board.



WITH YOUR CAR

Dispose of Fluids Properly Never pour anything down a storm drain, since most drains empty directly into streams or rivers. Recycle oil at registered collection centers throughout the region.

Fix Leaks Chemicals leaking from cars are a major source of pollution and can easily wash into a nearby stream.

Wash Your Car on Grass, Not Asphalt Washing your car on a permeable surface like your lawn allows the water to soak into the ground and not run off into a drain or stream. Use biodegradable or gentle car soap to ensure you do not pollute groundwater through your lawn.

Carpool Carpooling or public transit helps reduce air and water pollution and can save you money.



WITH FAMILY & FRIENDS

Spread the Word Set a positive example and help your family and friends implement some of the practices above around their homes, in their yard and with their cars, pets, votes, and time. Be an advocate for your watershed and community!



WITH YOUR MONEY

Support Local Business Visit the local businesses you know support clean water. The Green Alliance is one helpful resource for identifying local, environmentally responsible businesses.

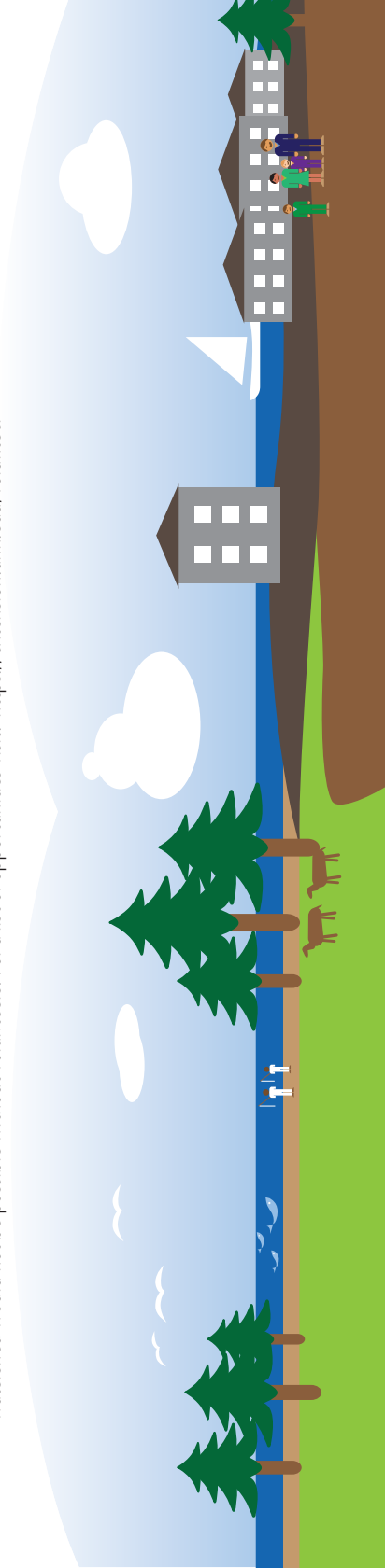
Business Owners Think about how you can help protect the waters around you. Reducing the size of your parking lot is a great way to increase infiltration of rain on your property. Or, you can implement stormwater best management practices like a rain garden on site.



BECOME A CITIZEN SCIENTIST

Did you know you can collaborate with scientists who are working to understand and protect our estuaries? Organizations are looking for concerned citizens like you who are interested in contributing to the world of scientific monitoring and research. Many research projects that occur in our watershed would not be possible without volunteers! For a list of opportunities visit: <https://extension.unh.edu/volunteer>

IN YOUR COMMUNITY



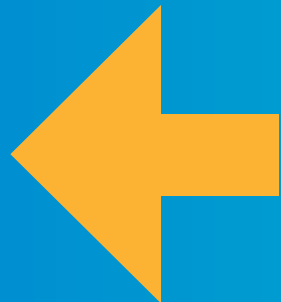
What can you do to help protect and preserve the places we love?

Clean rivers, lakes, marshes, and estuaries are something we can all agree on, and it is our responsibility as citizens to protect clean water in our region for ourselves, our neighbors, and our health, happiness, and enjoyment. As the Community for Clean Water, PREP works to unite and encourage you, your friends, and family to take simple steps to reduce water pollution caused by our actions every day. The power to make a difference lies in every one of us changing small behaviors so that all of us can continue to enjoy this fantastic place we call home.



Sand dunes along the Hampton-Seabrook Estuary. Photo by E. Lord

Display our poster to follow every-day actions for becoming a *Clean Water Champion!*



Volunteers with the Great Bay Gunners removing large debris from the Great Bay Estuary. Photo by E. Lord



Planting native shrubs for New England Cottontail habitat. Photo by E. Lord



Citizen scientists with the Coastal Research Volunteers monitoring glass eels. Photo by E. Lord

Citizens Tackling Non-Point Sources of Pollution

According to the *2018 State of Our Estuaries* report, non-point sources of pollution, such as fertilizers, septic systems, and animal waste, account for 67% of the nitrogen pollution entering our local waterbodies. The balance (33%) comes from wastewater treatment facilities across the Piscataqua Region watershed. Communities are working to upgrade existing wastewater treatment facilities, but there are plenty of ways you—as a citizen and community member—can help! Here are just a few examples of how community members and volunteers worked together to reduce non-point sources of pollution through regulation, stream restoration, and marine debris removal.

Collaborating to Protect Water Quality in Exeter, NH

Fertilizers used on ball fields and lawns often contain nitrogen and phosphorus, nutrients that are important for plant and lawn health. However, during rain storms, fertilizer can run off lawns

and gardens, polluting clean water and harming plant and wildlife.

Recently, a group of Clean Water Champions in **banded together to form the Exeter Healthy Lawns Clean Water (HLCW) initiative**, a collaborative effort between Exeter citizens, town board representatives, and town staff to tackle the problem of fertilizer runoff. With support from a Piscataqua Region Environmental Planning Assessment (PREPA) grant, Exeter and the HLCW developed a plan to expand an existing zoning ordinance limiting the use of chemical fertilizers to include not only wetlands, but also areas around rivers and streams and places that support ground-source drinking water. With unanimous support from the planning board, the amendment was added to the town ballot in March 2016. All of the outreach and education by the HLCW paid off with overwhelming support from Exeter voters.

Before the growing season, the HLCW also hosted more public education and outreach events to encourage clean, water friendly lawn care practices throughout the community. The HLCW serves as a fantastic example of how dedicated community members can work together to change local regulation and educate their neighbors about healthy lawn care practices.



Never dump chemicals down storm drains because they lead directly to rivers and waterbodies. Photo by E. Lord

"I believe the success of this project was attributed to allowing all participants an opportunity to have a voice in the process so that the end product was an outcome everyone agreed upon."

KRISTEN MURPHY
NATURAL RESOURCE PLANNER,
EXETER, NH

Partnering with Business: Sagamore-Hampton Golf Club, NH Sea Grant, & UNH Cooperative Extension

As part of the clean water community, our local businesses can implement measures to help ensure clean water on their sites. In 2014, NH Sea Grant, UNH Cooperative Extension, the NH Department of Environmental Services, and the Coastal Research Volunteers partnered with the Sagamore-Hampton Golf Club in North Hampton, NH to address non-point sources of pollution. Cornelius Brook, a headwater stream of the Winnicut River meanders through the 420 acres of turf grass at the Sagamore-Hampton Golf Club receiving nitrogen and sediment along the way. Previously, many areas along Cornelius Brook were mowed down to the water's edge—leaving little to no natural buffer (vegetated area along a shoreline, wetland, or stream). Volunteers working with NH Sea Grant and UNH Cooperative Extension planted native shrubs and trees to restore 50,743 square feet of riparian buffer and a meadow for bees and other pollinators. Based on a model from the USEPA, pollutant loading to Cornelius Brook has been reduced by 10.4

pounds of total nitrogen, 5.2 pounds of total phosphorus, and 6.1 pounds of sediment. In addition to a reduction in pollution, the project has changed minds, engaging over 25 community volunteers in monitoring and restoration efforts. The Sagamore-Hampton Golf Club is also committed to maintaining the newly restored buffer and continuing to improve their practices for clean water.

"Working with the Sagamore-Hampton Golf Club and community volunteers to restore buffers along Cornelius Brook presented a unique opportunity to address this source of nitrogen loading and provides a model for working with other golf courses and community volunteers in the future."

ALYSON EBERHARDT
COASTAL ECOSYSTEM SPECIALIST,
NH SEA GRANT & UNH EXTENSION

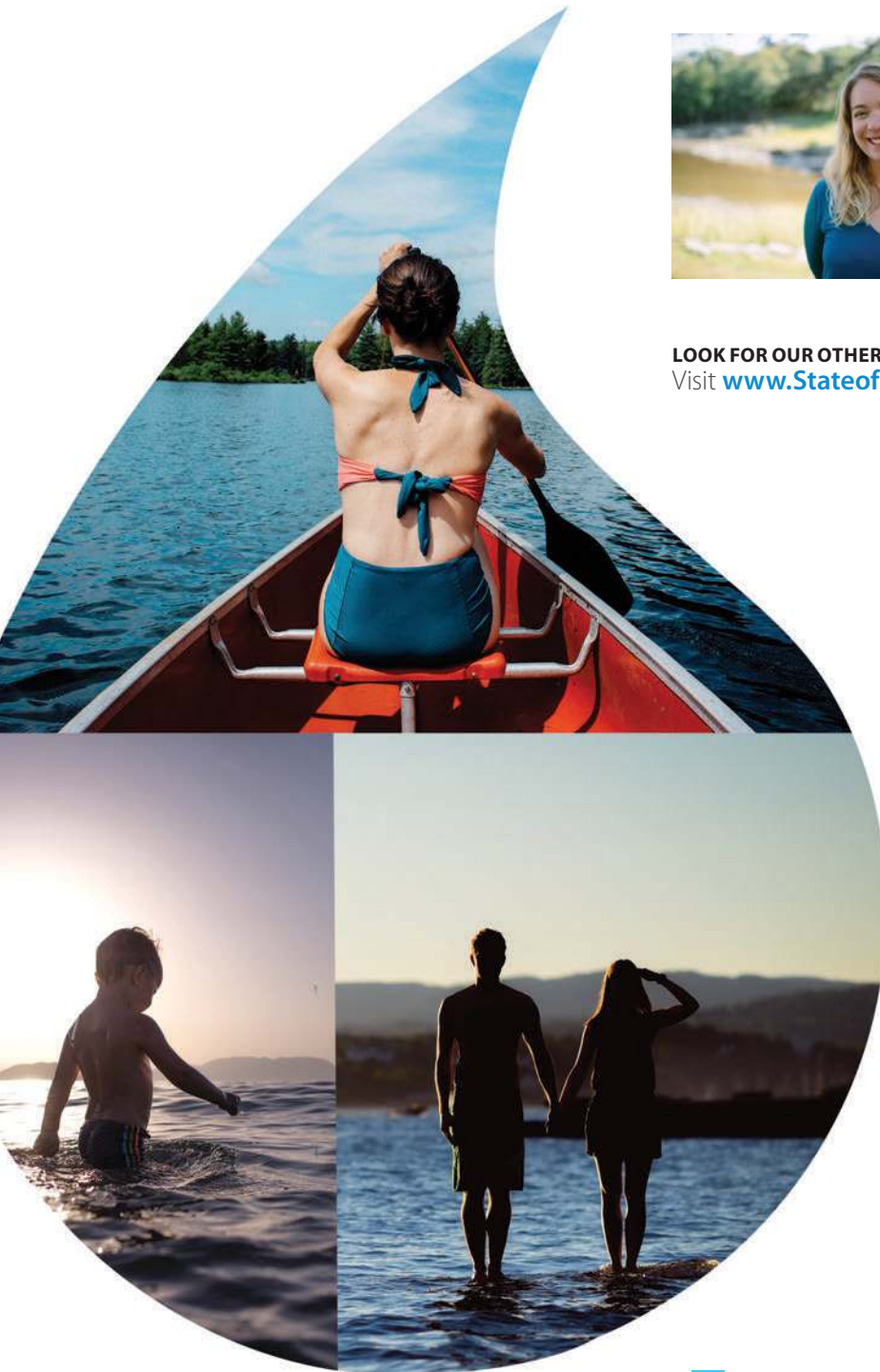
It Takes a Village: Great Bay Cleanup

Nutrients and sediment are not the only sources of non-point source pollution found in the Piscataqua Region watershed. Debris, including small items like cigarettes, bottles, and cans, and larger items like dock floats, mooring balls, and even small boats, litter the banks of our waterways. The Great Bay Gunners, a coastal NH social and hunting group, was getting frustrated with the amount of trash piling up in their "playground," so they contacted PREP about partnering on a cleanup. PREP happily accepted and reached out to UNH Cooperative Extension and The Stewardship Network to

develop a plan to map the trash around the Great Bay Estuary and to mobilize volunteers to remove it. Over six weeks, 10 volunteers kayaked, paddle boarded, and walked the shores of the Great Bay Estuary and recorded the locations of the debris. In June 2016, organized cleanups took place at Adams Point and Wagon Hill Farm in Durham and at the Great Bay National Wildlife Refuge in Newington. The Gundalow Company and their crew also joined the effort and used their gundalow, *Piscataqua*, and a small skiff to clean up debris not reachable on foot. Recognizing the need for continued cleanups, PREP, UNH Cooperative Extension, and The Stewardship Network joined Blue Ocean Society for Marine Conservation in the Ocean Conservancy's International Coastal Cleanup in September 2016. Returning to the Great Bay National Wildlife Refuge, 38 volunteers collected 900 pounds of debris along one mile of coastline. Across the bay, the Great Bay Gunners and their trucks were able to clean up 1,500 pounds of debris in one hour. The Great Bay Cleanup is a perfect example of what it looks like when partners come together to clean up the places they love! Stay tuned for more cleanups along the Great Bay Estuary and coastal beaches.

"Our motivation relative to partnering in the cleanup was to improve the quality of the feeding and resting habitat of many species of waterfowl and other animals that call the bay home."

TED HARTMANN
GREAT BAY GUNNERS



For more information, contact:



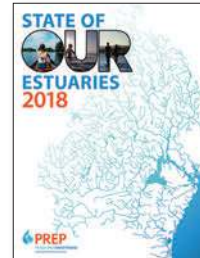
Abigail Lyon

**Community Technical Assistance Program Manager
Piscataqua Region Estuaries Partnership**

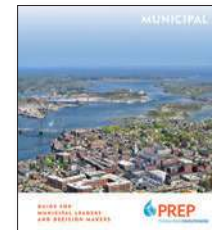
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LOOK FOR OUR OTHER PUBLICATIONS.

Visit www.StateofOurEstuaries.org to view and download:



A full 52-page State of Our Estuaries 2018 report that has deeper explanations, tables, graphs, and future priorities.



A guide for municipal leaders and decision-makers that provides a short list of priority policy options for consideration and model efforts from our own communities.



PREP

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