MUNICIPAL

GUIDE FOR MUNICIPAL LEADERS AND DECISION MAKERS

PREP
Piscataqua Region Estuaries Partnership

PISCATAQUA REGION WATERSHED

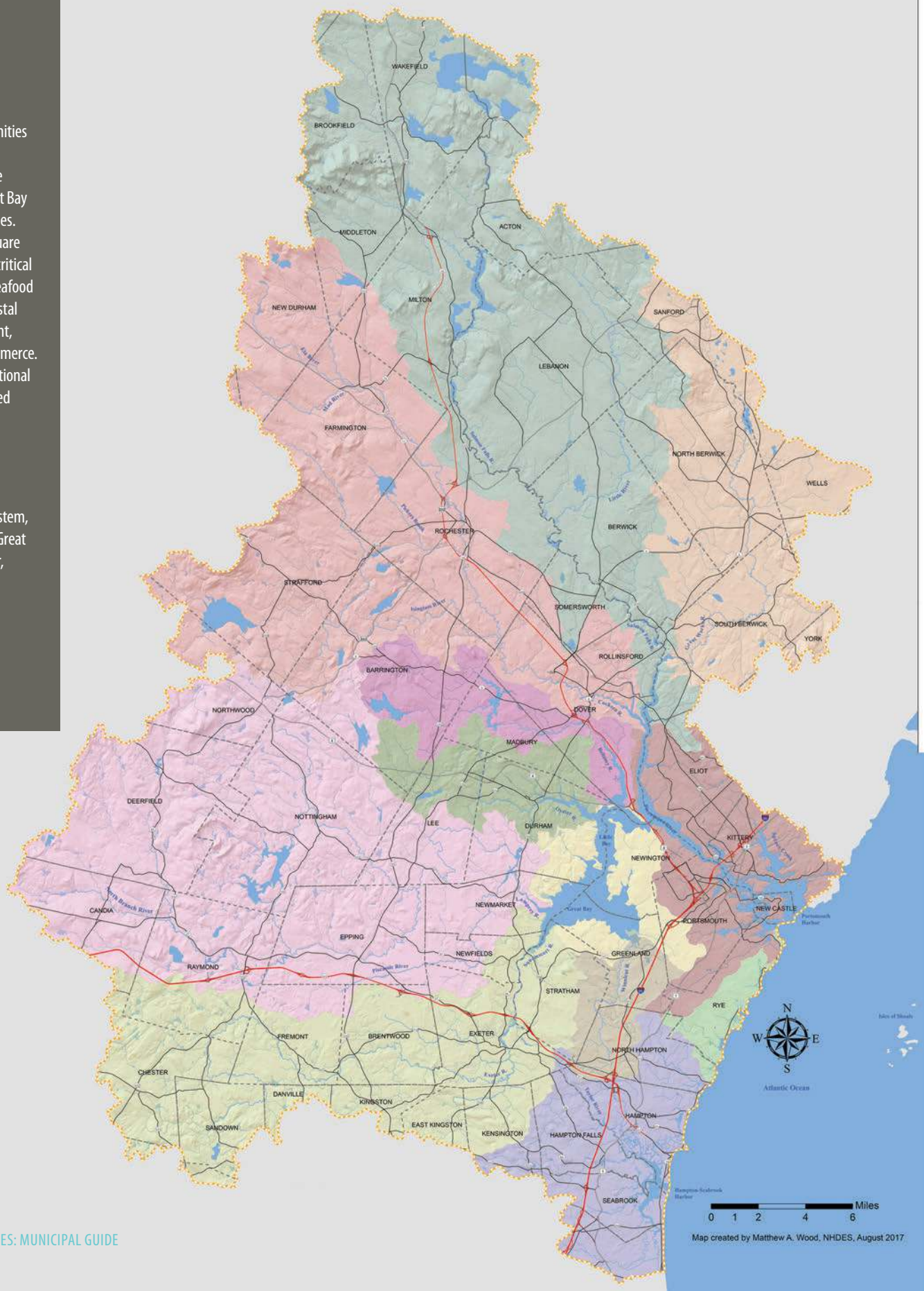
Rivers flowing from 52 communities in New Hampshire and Maine converge with the waters of the Atlantic Ocean to form the Great Bay and Hampton-Seabrook estuaries. The watershed covers 1,086 square miles. These estuaries provide critical wildlife habitat, nurseries for seafood production, buffering from 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.



About This Guide

PREP is excited to present this Municipal guide to you, decision-makers and leaders in the Piscataqua Region. This guide is a complementary piece to the full *2018 State of Our Estuaries* report and provides recommendations for action and informed decision making.

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 Unites States Environmental Protection Agency's National Estuary Program (NEP), has been committed to monitoring, protecting, and preserving these nationally significant lands and waters. As part of PREP's commitment to the Piscataqua Region estuaries, every five years we develop and release a *State of Our Estuaries* report.

The data in the *2018 State of Our Estuaries* report sends is sending us 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.

The challenges we face are complicated and it will take a multifaceted, dynamic approach to implementing actions that can reverse these trends. Acting now reduces significant future costs associated with restoration and mitigation.

This guide lays out **the most effective activities decision makers and local leaders can take to improve water quality and environmental conditions in our estuaries.** These recommendations represent an aggregation of actions from **across a number of state and regional management and restoration plans.** The recommendations in this guide are intended to provide **significant impact at reasonable financial cost** in recognition of the challenges municipal decision-makers face.

This guide provides targeted recommendations for actions in four priority focus areas: buffers, land conservation, septic systems, and stormwater management.

As a region, we have accomplished a lot, including improvements in infrastructure and conserving lands that help protect water quality. As we continue our collective good work, we also have an opportunity to narrow our focus on solutions that work both for our communities and our environment.

Great Bay Estuary in Newington, NH. Photo by E. Lord

Spruce Creek in Kittery, ME. Photo by E. Lord

"In order to run our water treatment facility properly, we have to start with the source – the Salmon Falls River."

STARR GLENN

Water Systems Operator/Safety Officer, Berwick, ME

"Development and change to our scenic landscape is inevitable. Conservation based planning is critical for the protection of our natural capital. For me, it is the vision of forever conserved ribbons of green that inspires this meaningful work."

CYNTHIA WYATT

Moose Mountains Regional Greenways, Manager of Branch Hill Farm, Chair of Milton Conservation Commission

COMMUNITY ACTION PLAN

2018 STATE OF OUR ESTUARIES INDICATOR SUMMARY

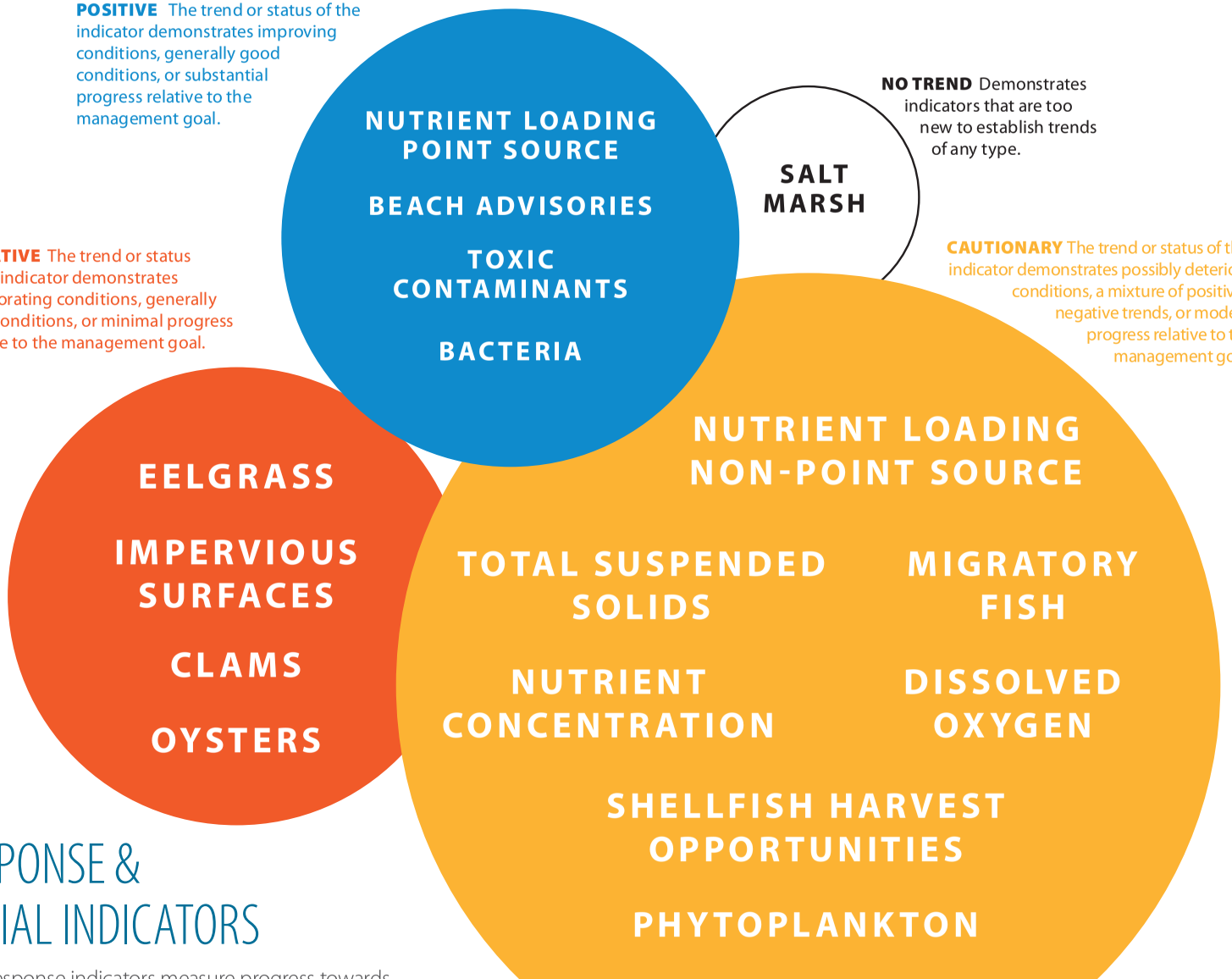
4 ENVIRONMENTAL INDICATORS ARE NEGATIVE **8 ENVIRONMENTAL INDICATORS ARE CAUTIONARY** **4 ENVIRONMENTAL INDICATORS ARE POSITIVE**

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

NO TREND Demonstrates indicators that are too new to establish trends of any type.

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

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

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.

- CONSERVATION LANDS (GENERAL)
- CONSERVATION LANDS (FOCUS AREA)
- OYSTER RESTORATION
- MIGRATORY FISH RESTORATION
- HOUSING PERMITS
- STORMWATER MANAGEMENT EFFORT
- STEWARDSHIP BEHAVIOR

SEAWEEDS

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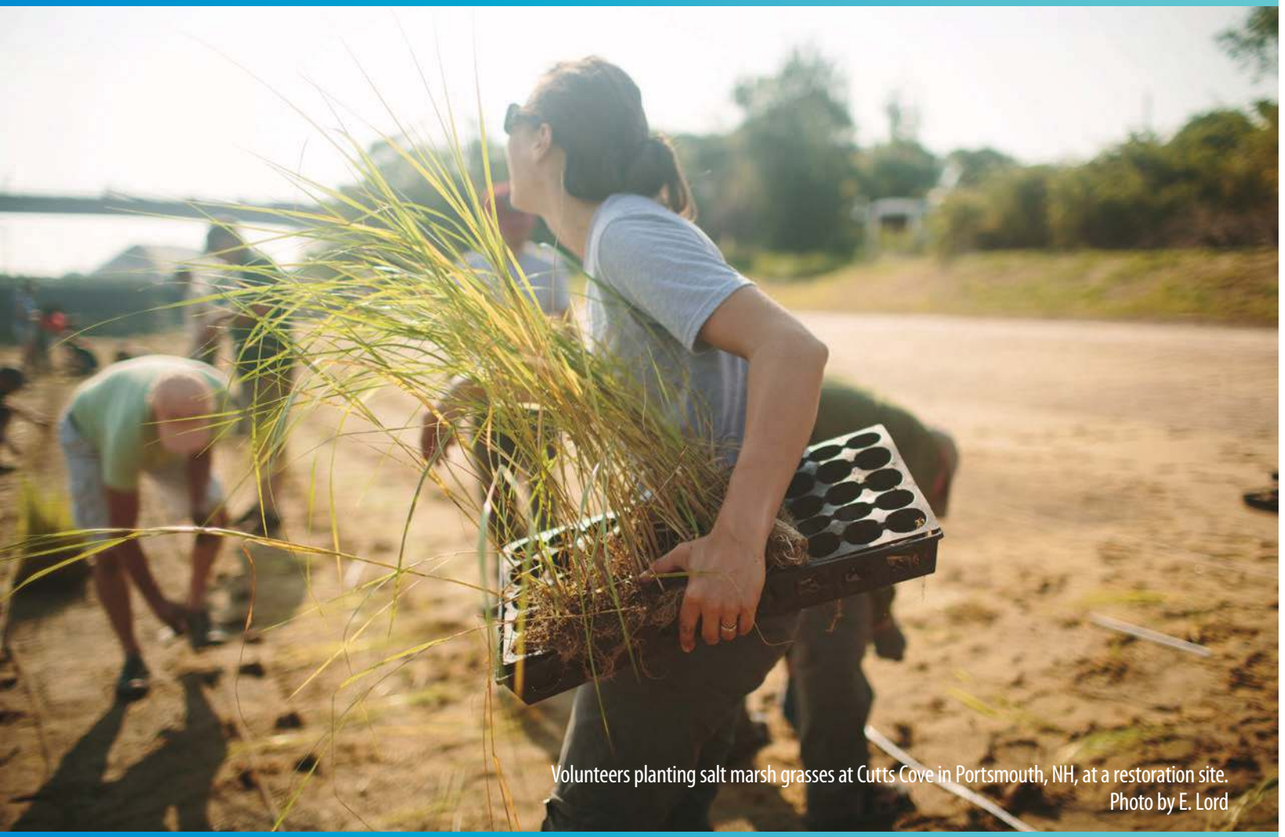
ACTION TABLE

Topic	Actions	Indicators	Key Resources
BUFFERS & SETBACKS	Assess and prioritize where buffer protection is important to your community based on flood risk, drinking and surface water quality, open space, and habitat goals. Utilize local and regional outreach programs to educate landowners about the importance of managing buffers. 1 2 3 4 5 6 7 8	Nutrient Loading Nutrient Concentration Total Suspended Solids Migratory Fish	*Landscaping at the Waters' Edge* *Protecting Water Resources and Managing Stormwater* NH Lakes Association Buffer Options for the Bay (BOB) PREPestuaries.org/initiatives/BOB
LAND CONSERVATION	Continue actively conserving land and work to prioritize conservation targets that address key functions on the landscape (e.g., salt marshes and wetlands for storm surge buffering, flood storage, pollutant removal, drinking water protection, etc.) Conduct a flooding and inundation mapping analysis that considers predicted climate change impacts from increased freshwater flooding, storm surges, and sea-level rise to identify vulnerable municipal infrastructure, such as roads, culverts, and pump houses. Develop municipal comprehensive land protection support programs and establish a dedicated fund to support land conservation and stewardship through local bonds, impact fees, and/or transfer of development rights. 1 2 3 4 5 6 8	Land Conservation (General and Focus Areas) Nutrient Loading Nutrient Concentration Total Suspended Solids	NH Coastal Viewer *Land Conservation Priorities for the Protection of Coastal Water Resources* Tides to Storms: Assessing Risk and Vulnerability to Sea-level Rise and Storm Surge: A Vulnerability Assessment of Coastal New Hampshire Climate Risk in the Seacoast (C-RiSe): Assessing Vulnerability of Municipal Assets and Resources to Climate Change Your local land trust
SEPTIC SYSTEMS	Research and map locations of septic systems to better understand their impacts on local water quality and prioritize structural and non-structural management approaches. Develop, adopt, and promote municipal regulations to require routine septic system pumping or inspection and upgrades of older systems upon property transfer (specifically those systems within 250 feet of a waterbody). Provide educational and technical assistance for community members regarding proper maintenance of septic systems, such as workshops or cost sharing for replacement or design. 1 2 6 7 8	Bacteria Toxic Contaminants Nutrient Loading Nutrient Concentration Beach Advisories	NHDES Water Quality Planning funding for prioritization & ordinance development Granite State Designers and Installers: materials, workshops, outreach UNH Stormwater Center NHDES OneStop
STORMWATER MANAGEMENT	Adopt model stormwater management standards, such as the Southeast Watershed Alliance model. Identify and prioritize locations with high non-point source and stormwater pollutant loads for restoration and retrofit opportunities. Implement measures to reduce pollutant loading from source areas. Promote and employ best management practices (BMPs) and low impact development (LID) approaches in new, existing, and redevelopment to minimize stormwater runoff impacts and limit changes to pre-development site hydrology. Document and track stormwater best management practices implementation. Utilize local and regional outreach and training programs that promote best management practices for stormwater and low impact development for commercial and residential properties, such as rain gardens or permeable pavement. 1 2 7 8	Total Suspended Solids Impervious Surfaces Nutrient Loading Nutrient Concentration Stormwater Management Effort Toxic Contaminants	Great Bay Pollution Tracking and Accounting Pilot Project (PTAPP) Southeast Watershed Alliance UNH Stormwater Center Soak Up the Rain Seacoast Stormwater Coalition Acton Wakefield Watersheds Alliance

1. *Comprehensive Conservation and Management Plan (2010)*
2. *Piscataqua Region Environmental Planning Assessment (2015)*
3. *Land Conservation Plan for New Hampshire's Coastal Watershed*
4. *Land Conservation Plan for Maine's Piscataqua Region Watersheds*
5. *Preparing New Hampshire for Projected Storm Surge, Sea-Level Rise, and Extreme Precipitation*
6. *Wildlife Action Plan*
7. *Coastal Zone Management Act Section 309 Assessment and Strategy (2016)*
8. **Watershed Management Plans: Bog Brook, Little River, Parsons Creek, Exeter River Main, Cocheco River, Hodgson Brook, Province Lake, Pawtuckaway, Willand Pond, Willow Brook, Winnicut River**

What can cities and towns do to protect clean water?



Volunteers planting salt marsh grasses at Cutts Cove in Portsmouth, NH, at a restoration site. Photo by E. Lord

Display our poster in your office to help educate and guide policy.

Shared Successes and What's Ahead

Over the past five years we have made steady and significant progress in a number of measurable ways. We have progressed towards goals that have substantial impact on water quality, and we have much reason to celebrate. This is due in no small part to committed municipal leaders, energetic town boards, and collaborative technical, educational, and policy partners.

BILL BOULANGER
Deputy Director Community Services, Dover, NH

"The nice thing about Berry Brook is that it's a demonstration site for stormwater management techniques that we can build and maintain. Now, my highway crew wants to think about what we can do in projects that don't have stormwater in the plan. It's changed our thinking and that's true in the community as well."
Visit: https://www.unh.edu/unhsc/berrybrook

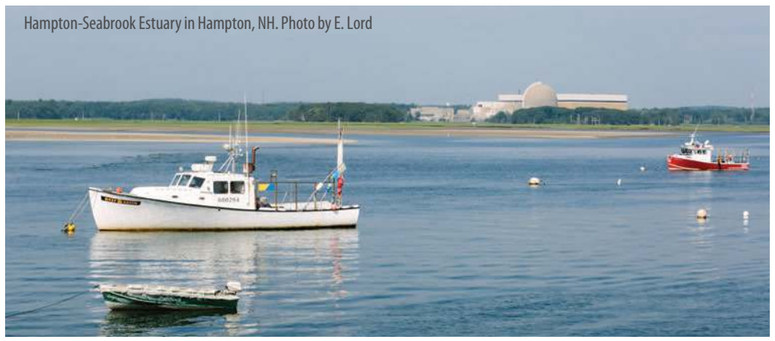
Some Highlights Include…

- Communities across the watershed have made significant investments in upgrading and improving public infrastructure, including **seven communities** who have upgraded, reconfigured, or in the process of upgrading their wastewater treatment facilities.

Water quality datasondes at the UNH Jackson Estuarine Laboratory. Photo by E. Lord

TODD SELIG
Town Administrator, Durham, NH

"As a community, Durham invests in the Piscataqua Region Monitoring Collaborative because our NH Seacoast estuaries serve as magnets for tourism supporting the local economy and increase the value of the properties near them. This contributes to state and local tax revenues, as well as a uniquely special region within New Hampshire and Maine to live, work, and play."



Hampton-Seabrook Estuary in Hampton, NH. Photo by E. Lord

- **Eighteen communities** in the watershed have adopted the complete set of Southeast Watershed Alliance's stormwater standards, or an equivalent, in an effort to reduce non-point source pollutant loads to our waters; seven more are in the process of adoption.
- **A total of 41,555 acres** of conservation land has been added in our region since 2011. Conservation land is our first line of defense in the fight against pollutant loads. Putting these lands into protection are a direct result of efforts from municipalities, private landowners, land trusts and state and federal agencies who are committed to proactive action.
- **The Great Bay and Hampton-Seabrook** estuaries have been monitored annually for a number of parameters as part of the Piscataqua Region Monitoring Collaborative (PRMC), a partnership between PREP, the Great Bay National Estuarine Research Reserve, New Hampshire Department of Environmental Services, United States Environmental Protection Agency, National Oceanic Atmospheric Administration, the University of New Hampshire, and a number of municipalities. The PRMC is a commitment to expanding our understanding of our dynamic estuaries. The data collected not only helps us assess trends, it also can be accessed by any community, researcher, or interested party to be used in their own work.

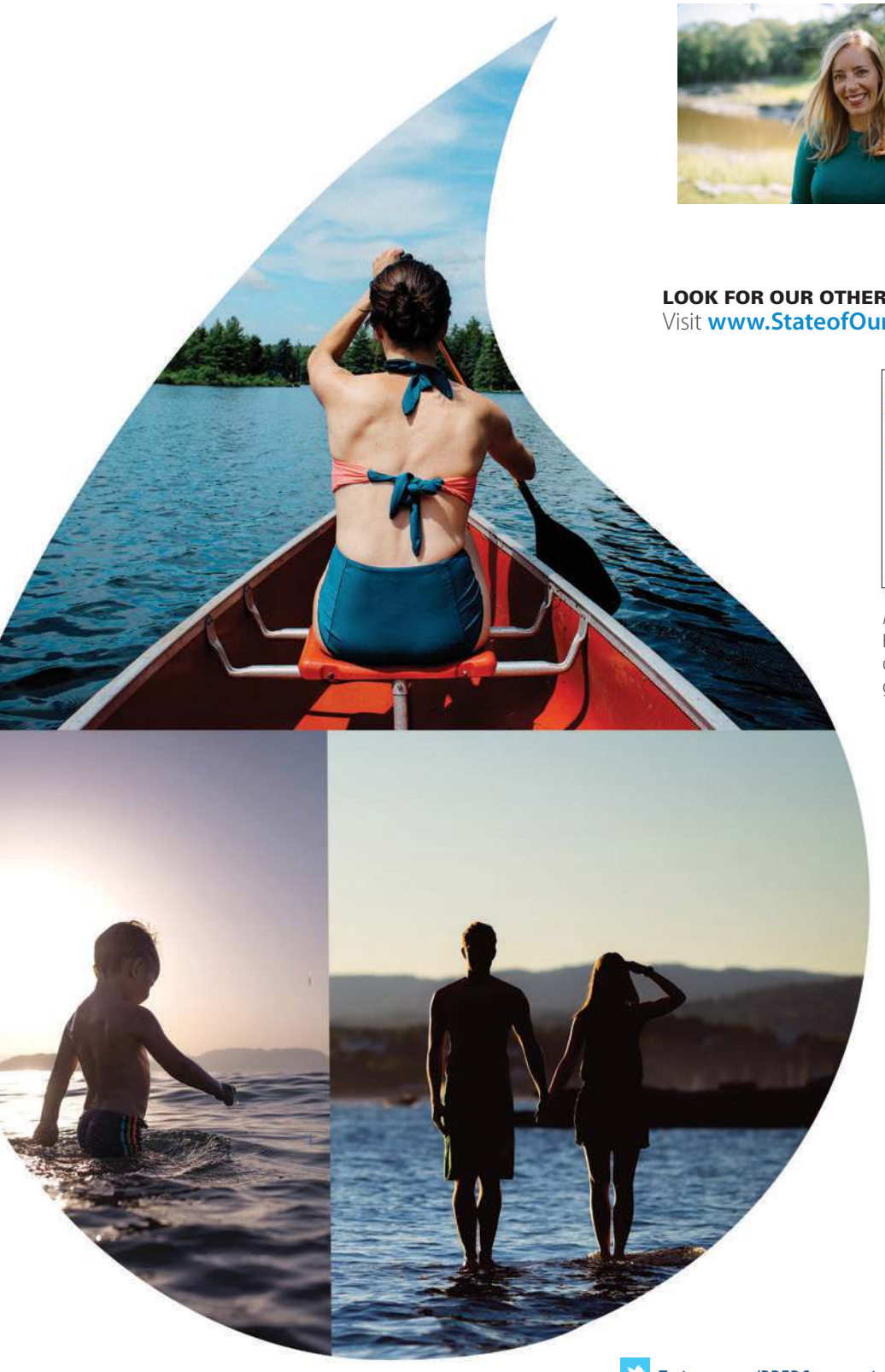
We are fortunate as residents and in our roles as professionals to be stewards of this region—a place we love. PREP will continue to convene the working table; we hope you will continue to join us.

RAYANN DIONNE
Conservation Coordinator, Hampton, NH

"The Hampton Conservation Commission gladly supports continued and expanded data collection efforts in the Hampton-Seabrook Estuary to help us understand the estuary's current health, future trends, and will play an important role in our conservation and educational efforts."

Vegetated buffers along the North Branch River in Candia, NH. Photo by E. Lord

Wastewater treatment facility construction in progress in Exeter, NH. Photo by E. Lord



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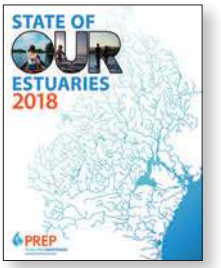
LOOK FOR OUR OTHER PUBLICATIONS.
Visit **www.StateofOurEstuaries.org** to view and download:



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

A short guide for citizens that has examples and tips on simple things everyone can do to help prevent pollution and protect the places we love.

PREP
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