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Piscataqua Region Estuaries Partnership 2018 Annual Report

Piscataqua Region Estuaries Partnership

PREP™

Piscataqua Region Estuaries Partnership

2018 ANNUAL REPORT

LETTER FROM THE EXECUTIVE DIRECTOR

Dear community of partners, funders, colleagues, stakeholders and friends: What a year! We THANK YOU for your care and stewardship of the special places, critters, and valuable natural resources of the Piscataqua Region in 2018! If you can believe it, one year ago we were together at the 2018 State of Our Estuaries conference and the state's first citizen science symposium, "Stories from the Field."

For most of us, the year flew by in the blink of an eye – we all stayed busy advancing projects, investigating new challenges, collaborating on problem-solving, and getting outdoors with each other to enjoy the places we work so hard to protect.

In recognition of the work completed over a year's time, it felt important to make note of that in a more formal way. So, I'm pleased to introduce PREP's first annual report. Each year we work hard to provide you with information and resources that are helpful, and enjoy championing your successes broadly through our newsletter, and social media activity. In doing those things, we too accomplish a lot to be proud of, and some of our high-level accomplishments from 2018 are summarized in this brief report.

As we look to 2019, we are excited about two important and exciting initiatives you'll be hearing more about: updating the 2010 Comprehensive Conservation Management Plan (CCMP) to identify important priorities across the watershed for the period of 2020-2030, and introducing the Every Drop Campaign – a coordinated, branded communications campaign modeled after successful efforts in Florida, Texas, and Washington to promote awareness, behavior change, and increased stewardship of our region's resources.

And, of course, staying focused on the efforts we are already committed to such as growing the Piscataqua Region Monitoring Collaborative (PRMC), collecting baseline water quality and ecological habitat data, delivering focused technical assistance to our communities, progress reporting on our local policy and management practices, investing in land conservation, and seeking supplemental sources of funding that address high priority needs.

Heading into 2019, we welcome you to reach out and let us know how we are doing as your partner. Are there specific opportunities we can capitalize on or resources we can bring to the region in support of our collective work? Please let us know. Or if you just want to share some ideas over a cup of coffee, we are up for that, too.

Thank you for celebrating 2018 with us. We look forward to another year of creating more positive, lasting impact in partnership with all of you.

Cheers,

Rachel Rouillard
Executive Director, Piscataqua Region Estuaries Partnership

Rachel Rouillard, Director; Abigail Lyon, Community Technical Assistance Program Manager; Trevor Mattera, Special Projects Coordinator; Dr. Kalle Matso, Coastal Science Program Manager

PROGRAM HIGHLIGHTS

SCIENCE

Following the release of the ***2018 State of Our Estuaries*** report and the detailed ***Environmental Data*** report, PREP began re-evaluating our monitoring program. UNH scientists initiated an effort to extend seaweed monitoring from intertidal areas into deeper waters where seaweed and eelgrass compete. **Acres of seagrass** in the Great Bay Estuary have remained at approximately 1,600 acres since 2009. **Seaweed abundance** overall has increased in the last decade compared with the 1980s, but decreased slightly in recent years. In Hampton Harbor, **clam data** released in 2018 indicated a significant increase in clam juveniles and adults over 2016 and 2017.

TECHNICAL ASSISTANCE

PREP hosted four **Board Empowerment** workshops in NH (A Conversation About Takings, Buffer Options for the Bay, Floodplain Management 101, and Coastal Viewer 201), and one this fall to start the workshop series in ME (Conservation Commission & Plan Review). PREP and our partners in **Trash Free Piscataqua** (part of the US EPA Trash Free Waters Program) developed proposals for reducing single use plastic debris, pet waste, and derelict fishing gear. This fall, Stratham applied to **The Recycling Partnership** to purchase covered recycling carts to reduce single use plastic debris. Rollout for the ***2018 State of Our Estuaries*** report continued with the creation of the **"Stories from Our Estuaries"** video series.

RESTORATION & CONSERVATION

PREP continues to support land conservation across the watershed with partners including the **Southeast Land Trust of NH** and the **Great Bay Resource Protection Partnership**. More than 2,300 acres were conserved in high priority areas and in Conservation Focus Areas consistent with the Land Conservation Plan for NH's Coastal Watershed. This advances our collective effort closer to the PREP 20% goal for land conservation in the watershed. In addition, partnering with **The Nature Conservancy of NH (TNC)**, PREP assisted in the development and facilitation of a stakeholder-driven decision-making process for their **"Oyster Restoration by Design"** strategy, a near-term master plan for TNC to map oyster restoration opportunities in the Great Bay Estuary that advances PREP's goal of 20 acres of restored oyster reef habitat by 2020.

PREP REPORTS & PUBLICATIONS

2018 publications to the UNH Scholars Repository include:

MEMORANDUM: Quality Assurance of 2016 Great Bay Estuary Water Quality Data and 2017 Cocheco River and Bellamy River Water Quality Data collected by UNH

Great Bay Estuary Tidal Tributary Monitoring Program: Quality Assurance Project Plan, 2018

Great Bay Estuary Water Quality Monitoring Program: Quality Assurance Project Plan, 2018

Great Bay Estuary Submerged Aquatic Vegetation (SAV) Monitoring Program for 2018: Quality Assurance Project Plan

Great Bay Estuary Seaweed Monitoring Program: Quality Assurance Project Plan, 2018

Testing of Great Bay Oysters for Two Protozoan Pathogens

Hampton Harbor Clam Data: Density, Green Crab Abundance, and Neoplasia Incidence (Normandeau/NextEra Clam Data Updated Through 2017)

Eelgrass Distribution in the Great Bay Estuary and Piscataqua River for 2017

MEMORANDUM: Calibration of Great Bay Estuary Hydrodynamic Model and Incremental Nitrogen Estimation, 2013

Flushing Time versus Residence Time for the Great Bay Estuary

For a complete list of PREP's reports and publications, visit http://scholars.unh.edu/prep

THE 2018 STATE OF OUR ESTUARIES

Every five years, the Piscataqua Region Estuaries Partnership (PREP) reports on the environmental condition of the Great Bay and Hampton-Seabrook estuaries. The ***2018 State of Our Estuaries*** report provides an assessment resource managers, residents, community leaders, scientists, policy makers, and others can use in their efforts to understand, manage, and protect our local estuaries of national significance. The ***2018 State of Our Estuaries*** report builds on previous status and trends reports and is sending a clear signal: our estuaries have declined due to stress and they have lost resilience to sustain themselves in the face of growing pressures.

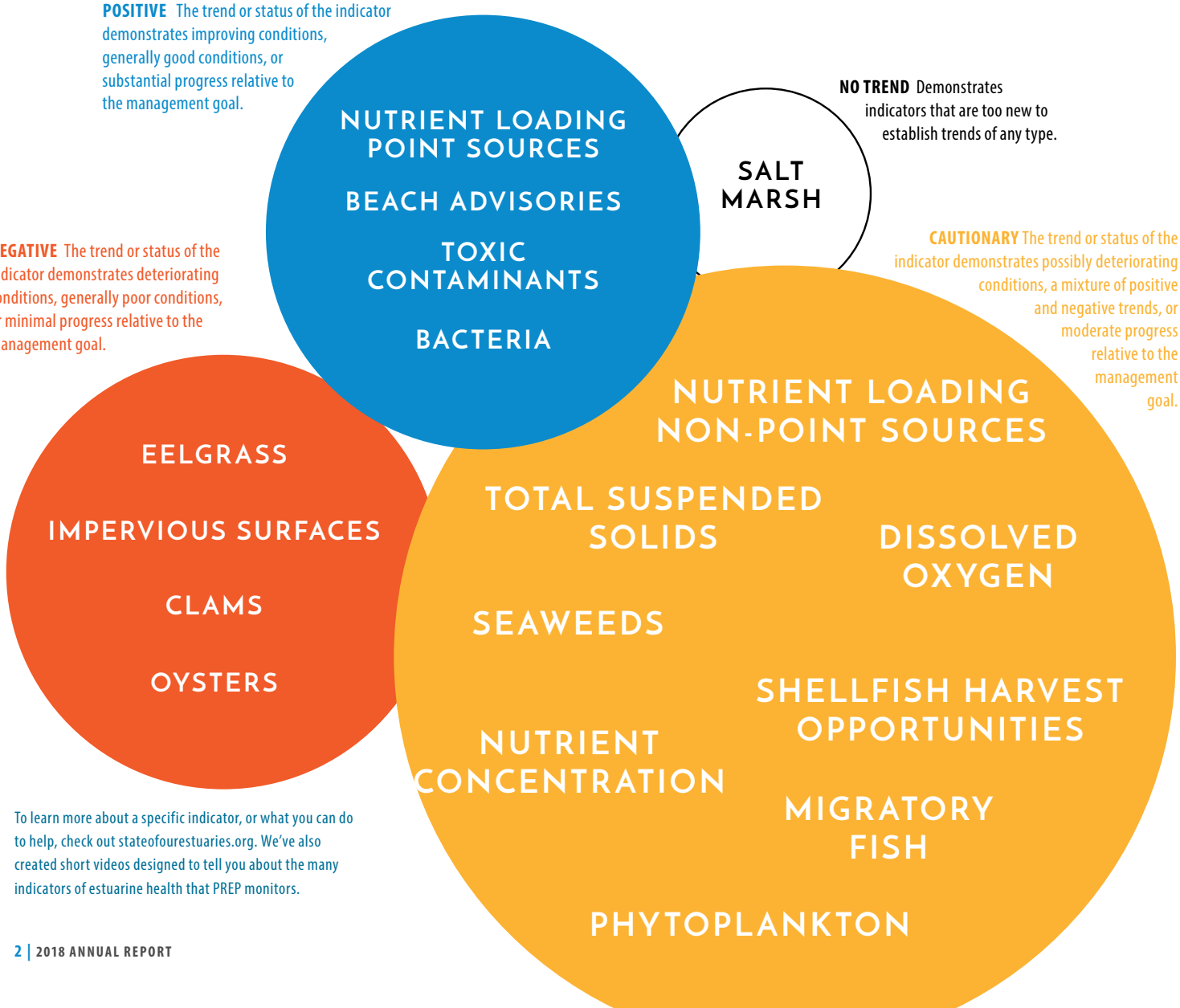
Of the 16 environmental indicators, 12 show cautionary or negative trends. The four management indicators are split; Conservation Lands (General) and Migratory Fish Restoration show positive progress toward management goals while Conservation Lands (Focus Area) and Oyster Restoration demonstrate only marginal headway.

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.



To learn more about a specific indicator, or what you can do to help, check out stateofourestuaries.org. We've also created short videos designed to tell you about the many indicators of estuarine health that PREP monitors.

STRESS AND RESILIENCE

Our estuaries are under stress from changing precipitation patterns, increasing colored dissolved organic matter (CDOM), coastal acidification, sea-level rise and storm surge, human population, the spread of impervious surfaces, and more.

Given that our goal is healthy estuaries, we must take actions to improve the resilience of these systems. We may have little control over episodic events like extreme storms, but we can reduce the short-term and chronic impacts of these events by continuing to reduce nitrogen levels, improve stormwater practices, conserve land, and better manage buffers along the edges of our rivers, estuaries, and coast. We must continue to invest in data collection and analysis to better understand the impacts of these stressors, track the effects of past management, and modify future strategies to be as effective as possible.

SOCIAL INDICATORS

Our estuaries are not only places of biological value, but also social and economic value. In 2015, PREP and our partners embarked on **The Social Indicators Project** to incorporate social data into the 2018 – and future – State of Our Estuaries reports. These indicators are our region's first effort to gather, understand, and link social and behavioral data to regional environmental indicators. The 2018 report introduced three new social indicators: **Housing Permit Approvals**, **Stormwater Management Effort**, and **Stewardship Behavior**.

RESILIENCE IS THE CAPACITY OF AN ECOSYSTEM TO ABSORB REPEATED DISTURBANCES OR SHOCKS AND ADAPT TO CHANGE WITHOUT CONTINUALLY DEGRADING AND FUNDAMENTALLY SWITCHING TO AN ALTERNATIVE STABLE STATE.[1]

CITIZEN SCIENCE

On December 8, 2018 more than 200 participants from partner organizations, state and federal agencies, watershed association groups, local river advisory committees, researchers, and members of the public joined PREP for the State of Our Estuaries Conference and release of the 2018 report.

In keeping with the theme, **"Beyond Borders,"** communities shared their efforts to protect water quality and natural resources beyond town borders.

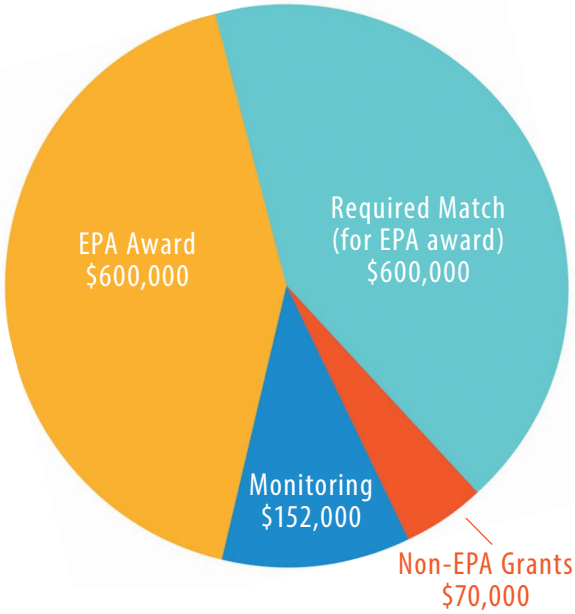
To celebrate citizen science in New Hampshire, five volunteers from across our region shared inspirational, touching, and funny stories at **"Stories from the Field: Celebrating Citizen Science in New Hampshire."** Over 150 people celebrated citizen science volunteers with us over the course of the day!

1 Holling, C.S. 1973. Resilience and Stability of Ecological Systems. Annu. Rev. Ecol. Syst. 4: 1–23.

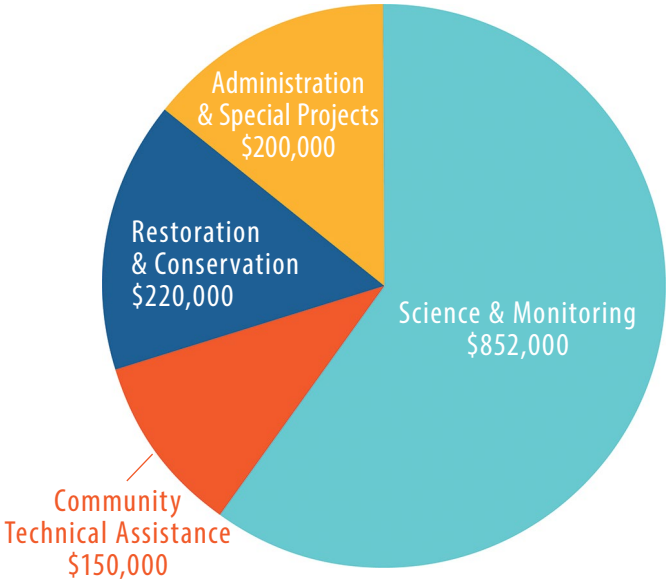
2018 BUDGET

PREP is part of the U.S. Environmental Protection Agency's National Estuary Program, a joint program between local, state, and federal agencies established under the Clean Water Act with the goal of protecting and enhancing nationally significant estuarine resources. PREP is supported in part by an EPA matching grant and is housed within the School of Marine Science and Ocean Engineering at the University of New Hampshire.

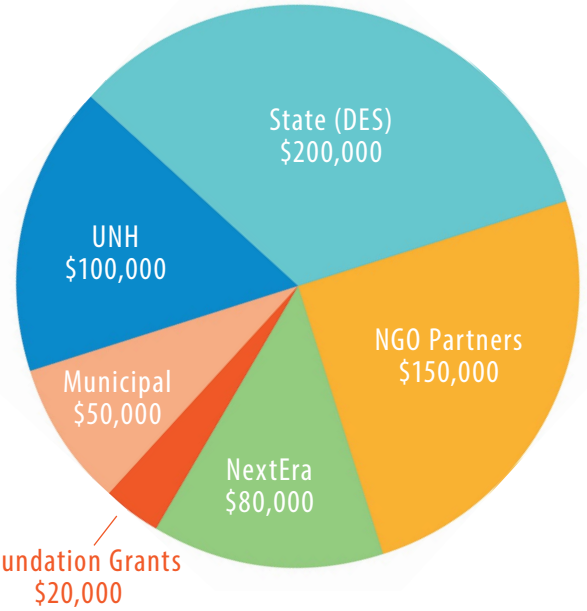
REVENUE ($1.422M)



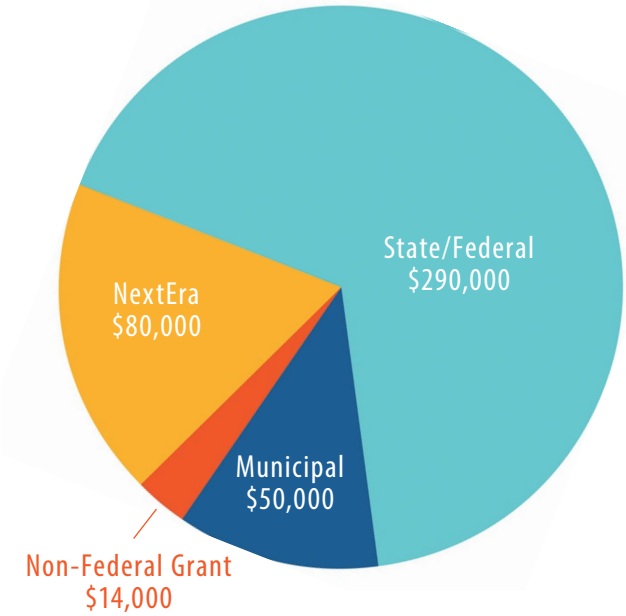
EXPENDITURES ($1.422M)



REQUIRED MATCH ($600K) (FOR EPA ANNUAL AWARD)



PISCATAQUA REGION MONITORING COLLABORATIVE ($434K)



MANAGEMENT COMMITTEE MEMBERS

Forrest Bell, FB Environmental
Erik Chapman, NH Sea Grant/UNH
Jim Chase, Seacoast Science Center
*Steve Couture, NHDES Coastal Program
Annie Cox, Wells National Estuarine Research Reserve
Jay Diener, Seabrook Hamptons Estuary Alliance
*Ted Diers, NH Department of Environmental Services
Rayann Dionne, Town of Hampton
Rick Ellsmore, Natural Resources Conservation Service
Kristen Fiendel, Maine Department of Environmental Protection
*Doug Grout, NH Fish and Game
John Jones, NextEra Energy
Jessa Kellogg, Town of Kittery
Peter Kinner, Great Bay Stewards
Rich Langan, University of New Hampshire
*Regina Lyons, US Environmental Protection Agency
Jim O'Brien, The Nature Conservancy
Melissa Paly, Great Bay-Piscataqua Waterkeeper
Jennifer Perry, Town of Exeter
Kim Reed, Town of Rye
*Cory Riley, Great Bay National Estuarine Research Reserve
Tim Roache, Rockingham Planning Commission
Rob Roseen, Waterstone Engineering
Linda Schier, Acton Wakefield Watersheds Alliance
Todd Selig, Town of Durham
Roger Stephenson, Union of Concerned Scientists
John Storer, City of Dover
Michael Trainque, Hoyle, Tanner & Associates & Southeast Watershed Alliance

*Indicates a standing seat on the Management Committee

TECHNICAL ADVISORY COMMITTEE

The **Technical Advisory Committee (TAC)** advises PREP on technical, science-based issues related to the estuary program, the ***State of Our Estuaries*** report, and the implementation of the ***Comprehensive Conservation Management Plan.*** TAC membership is open and the public is encouraged to attend.

Regular TAC attendees include researchers PREP works with to obtain information about the ecosystem as well as public agency resource managers, municipal planners and engineers, and other stakeholders.

JOIN THE PREP COMMUNITY FOR CLEAN WATER

What do our watershed and estuaries mean to you? Maybe you like to enjoy a beautiful sunset, a walk along the coast, volunteering for your favorite organization, or fishing with your family and friends. Share your photos with **#shotsfromtheshed** and you could be featured in an upcoming edition of PREP's newsletter, **"Downstream."**

PREPcommunity

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Piscataqua Region Estuaries Partnership

@prepestuaries

Volunteers removed **1,500 pounds** of debris from the **Great Bay National Wildlife Refuge** on September 30, 2018.

In 2017 there were **84.3 juvenile clams** per m^2 at the "Middle Ground" clam flat, **more than any other year going back to 1983**.

2,300 acres were **conserved** in the watershed with **PREP support**.

Sept 15–22 our region joined the national celebration of our estuaries for **National #EstuariesWeek**.

Last August was officially the **wettest** August on record in NH— **7.29 inches** above normal.

52 partners from the **Technical Advisory Committee** joined in a discussion about our region's monitoring plan last October.