



2-17-2021

## 2020 Annual Report

PREP (Piscataqua Region Estuaries Partnership)

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**PREP**<sup>TM</sup>

Piscataqua Region Estuaries Partnership



# 2020

## ANNUAL REPORT



# LETTER FROM OUR DIRECTOR



Dear Partners:

As 2020 closes the door behind us and we reflect on all that *was*, and what we want to be intentional about in 2020, one theme feels omnipresent for so many reasons: **Community**.

Wendell Berry said it well:

“A community is the mental and spiritual condition of knowing that the place is shared, and that the people who share the place define and limit the possibilities of each other’s lives. It is the knowledge that people have of each other, their concern for each other, their trust in each other, the freedom with which they come and go among themselves.”

This year has felt immensely personal; even the less-personal function of virtual interactions with you over these many months. Together we’ve shared how this year highlighted our appreciation and concern for one another and proved how resilient we are as a **Community** in being able to adapt, pivot, recollect ourselves, and continue in the face of challenging circumstances and loads of uncertainty.

Here at PREP, we are deeply thankful for each of you, and the multitude of ways you contribute to our communities and estuaries. This year we made significant progress on so many fronts; from major local investments in infrastructure, and the first draft of the region’s first integrated research and monitoring plan for the estuaries, to the permanent conservation of some of the region’s most important lands – and these are just a few examples. And with the arrival of two babies, we welcomed new life into our **Community**! Alongside those successes and joys, we celebrated from afar, the retirement of valued colleagues: Doug Grout (NH Fish and Game), Rick Ellsmore (Natural Resource Conservation Service), Steve Miller

(Great Bay National Estuarine Research Reserve), and Barbara McMillan (NH Department of Environmental Services). We also suffered the difficult loss of our dedicated champion and friend, Ru Morrison of NER-ACOOS. He will be dearly missed by so many of us.

As we close 2020, we thank members of our **Community** for their service on the PREP Management Committee over many years: Forrest Bell, Jay Diener, Rick Ellsmore, and Roger Stephenson. Their thoughtful leadership and commitment to our work has made us a stronger program, and we will miss having them at PREP, but look forward to continuing work with them around other tables.

We are hopeful as we look to the new year – to complete major projects and commence others. But most of all, to resume work with you in person, with the full spirit and celebration of what it means to be *in Community*.

Warm regards,

A handwritten signature in black ink, appearing to read 'R. Rouillard'.

Rachel Rouillard, Director



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

# PROGRAM HIGHLIGHTS

## SCIENCE

The **2019 Seaweed Monitoring Report** was published, noting that seaweeds continue to compete with seagrasses at increased levels, compared with data from 1980. In November 2020, the **2019 SeagrassNet Report** was released, providing an overview of data from both SeagrassNet sites: one in Great Bay and one in Portsmouth Harbor. For the first time, the SeagrassNet report encompassed salinity, temperature, and light at the two sites. In addition, preliminary SeagrassNet data from 2020 indicates that this year has seen increases in eelgrass density and biomass at both sites.

## TECHNICAL ASSISTANCE

Abigail Lyon is the new co-chair for the **NH Coastal Adaptation Workgroup (CAW)** and assisted in the development of **CAW Talks** - a municipal group sharing ideas and questions related to coastal adaptation and resilience. PREP supported climate outreach with the **Climate in the Classroom** program at Winnacunnet High School and virtual workshops for the **2019-2020 NH Coastal Flood Risk Summary Part II: Guidance for Using Scientific Projections** in partnership with the NH DES Coastal Program, UNH Cooperative Extension, and NH Sea Grant. PREP will also publish the **2020 Piscataqua Region Environmental Planning Assessment** providing an analysis of local protections for water quality and natural resources.

## RESTORATION & CONSERVATION

Trevor Mattera became PREP's new **Habitat Program Manager**, coordinating and participating on collaborative projects focused on estuarine habitat or restoration management. This fall, PREP published the first annual **Habitat Spotlight** report, highlighting the latest habitat data, and some of the many projects and efforts occurring in our region. PREP joined US Fish & Wildlife, NH Coastal Program, and the Seabrook Hamptons Estuary Alliance as the steering committee of the **Hamp-ton-Seabrook Estuary (HSE) Collaborative**, focused on aligning resources and activities within the HSE. For conservation, PREP supported initiatives that resulted in the protection of over **790 acres of high priority lands** across the watershed, protecting water quality and habitat along over 4 miles of streams and rivers.

## PREP REPORTS & PUBLICATIONS

Eelgrass Distribution in the Great Bay Estuary and Piscataqua River for 2019: Final Project Report submitted to the Piscataqua Region Estuaries Partnership, Seth Barker

A Case for Restoration and Recovery of *Zostera marina* L. in the Great Bay Estuary, David M. Burdick, Kenneth J. Edwardson, Thomas Gregory, Kalle Matso, Trevor Mattera, Melissa Paly, Christopher Peter, Frederick Short, and Dante D. Torio

Seaweed Monitoring in the Great Bay Estuary: 2019 Annual Report, David M. Burdick, Gregg Moore, Arthur C. Matheison, Andrew Payne, Lara Martin, and Christopher Peter

SeagrassNet Monitoring in the Great Bay Estuary, NH/ME Field Season 2019, Kalle Matso, Trevor Mattera, Frederick Short, David M. Burdick, Lara Martin, Nicole Sarrette, Nick Anderson, Dante D. Torio, and Thomas Gregory

Testing of Great Bay Oysters for Two Protozoan Pathogens, Cheri A. Patterson and Kevin M. Sullivan

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



# INTEGRATED RESEARCH & MONITORING PLAN

PREP and partners have made significant progress towards a new **Integrated Research and Monitoring Plan (RAMP)** for the Piscataqua Region watershed, due to be completed in spring of 2021. The RAMP focuses on questions and activities needed to better understand and protect the Great Bay and Hampton-Seabrook Estuaries, emphasizing four biological resources or “focus areas”: shellfish, eelgrass, salt marsh, and fish (a fifth focus areas, “humans,” will be added in a future version to be completed by 2022). The RAMP represents the work of over 30 local and external technical experts who participated in a series of meetings as part of PREP’s Technical Advisory Committee. Notes from these meetings and drafts of the RAMP and Prospectus can be accessed at: <https://prepestuaries.org/who-we-are/prep-technical-advisory-committee/>

Even in its draft form, the RAMP has already provided many benefits to those who are interested in protecting our critical estuaries. The RAMP has formed the basis for the current 2021 field season monitoring and research plan, which includes new monitoring strategies for our region. The RAMP also provides a foundation for a draft **“Prospectus”** for the **Piscataqua Region Monitoring Collaborative (PRMC)**. The PRMC is the collaborative

mechanism that helps partners actually fund and conduct the estuarine monitoring and science. An early draft of the Prospectus estimates a funding gap of \$800,000.

The most recent version of a comprehensive monitoring document for our estuaries was released in 2008. The 2008 version only considers monitoring and does not incorporate discrete research activities that can help explain the “why” behind the trends revealed by long-term monitoring. PREP’s Technical Advisory Committee co-chairs Wil Wollheim and Bonnie Brown, both researchers at the University of New Hampshire, advocated for a document that integrates both monitoring and research, noting that both types of scientific activities are required to truly understand and protect our estuaries.

Because so many experts were involved—including two national-level coastal ecologists serving as “External Advisors”—the RAMP has enhanced technical credibility and relevance to our local issues. The RAMP also makes use of conceptual models that visually relate the most critical factors and how they interact. Finally, when completed, the RAMP will attempt to prioritize scientific activities within each focus area to support organizations making decisions on how to spend finite resources. **For questions about the RAMP contact: Kalle Matso, Coastal Science Program Manager.**

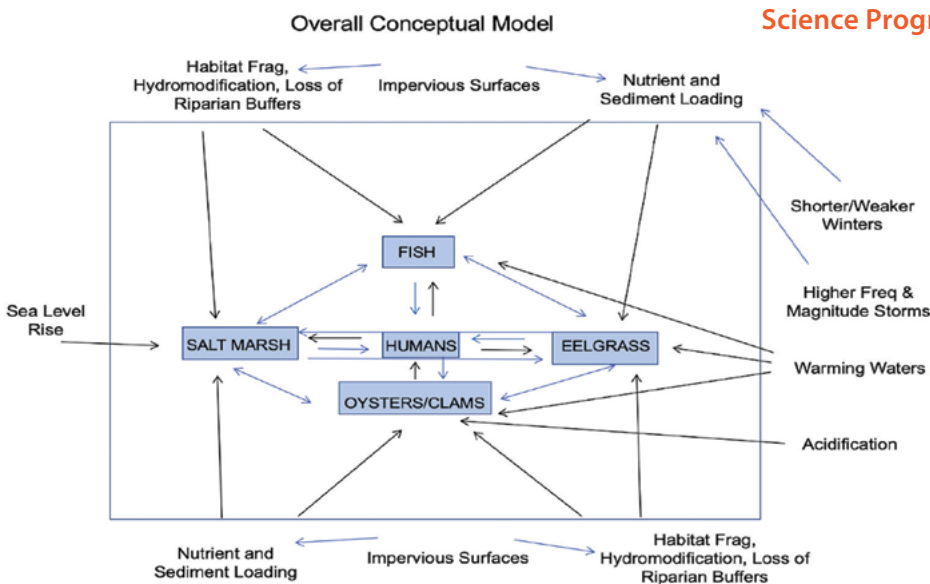


Figure 1. Conceptual model showing five focus areas of the RAMP. Blue arrows indicate an “increasing effect” while black arrows indicate a “decreasing effect.” (E.g., Humans can have a negative impact on eelgrass through pollution, while eelgrass has a positive effect on humans through storm buffering). Not all relationships are indicated by arrows in order to minimize visual complexity. Note that stressors on the left and right of the model are less amenable to management. The stressors on the top and bottom of the model are the same and are considered more amenable to management. More detailed conceptual models will accompany each focus in this Plan—shellfish, eelgrass, salt marsh, fish, and humans.





## CRITICAL ADVANCES FOR OUR ESTUARIES (CARE)

In January 2020, PREP and the Town of Durham commenced a three-year partnership initiative (CARE) to focus new financial resources totaling \$525,000 on areas of critical need identified by PREP, its partners, and the 52 communities of the Piscataqua Region watershed. We recognize and appreciate the leadership of the Town of Durham and specifically Town Administrator, Todd Selig for the vision and hard work required to make CARE possible.

CARE identifies four focus areas targeted at improving the understanding and health of the Great Bay Estuary, and whenever possible, the health, resilience, and vitality of the Hampton-Seabrook Estuary and all of the Piscataqua Region's estuarine resources.

The four focus areas of need that guide project development and implementation include:

**1** Develop a holistic approach to the research and monitoring initiatives currently managed by diverse partners.

**2** Enhance capacity to manage, synthesize, and improve access for communities, managers, and scientists.

**3** Develop science-based metrics to calculate regulatory credit for nonstructural best management practices.

**4** Support a coordinated communication strategy to ignite the growing sense of stewardship among the region's communities.

PREP has invested in Focus Areas 1 & 2 through the drafting of phase 1 of the integrated Research and Monitoring Plan (RAMP), secured two national-level external advisors to provide technical guidance in better understanding estuarine processes and establishing best monitoring practices, initiated development of a new data management system that will provide more secure data that is easily analyzed and available to the public, and invested in data analysis of a range of key datasets (e.g., sediment sample analysis and 30 years of eelgrass tissue analysis). The synergy of this interconnected work will help to inform decision making and municipal investment.

As we embark on Year 2 of CARE, we will focus additional resources on BMPs and stewardship (Focus Areas 3 & 4).

**For questions about CARE focus areas or projects contact: Rachel Rouillard, Director.**

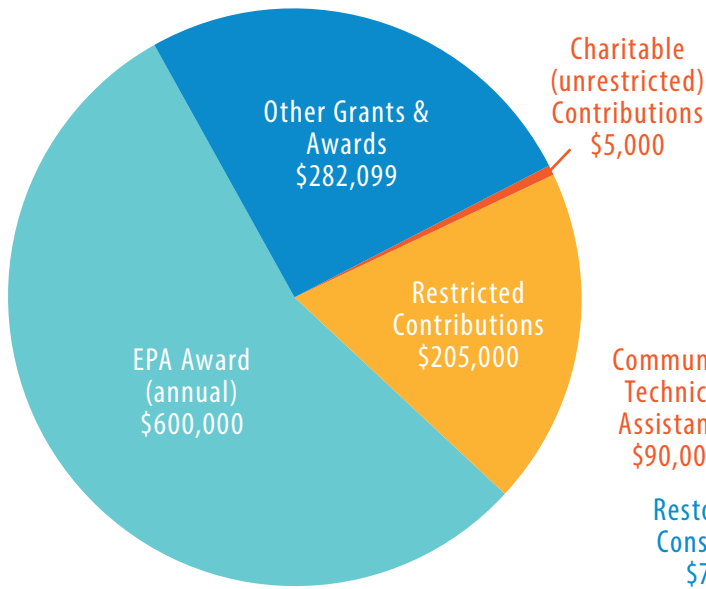


Photo courtesy of Todd Selig

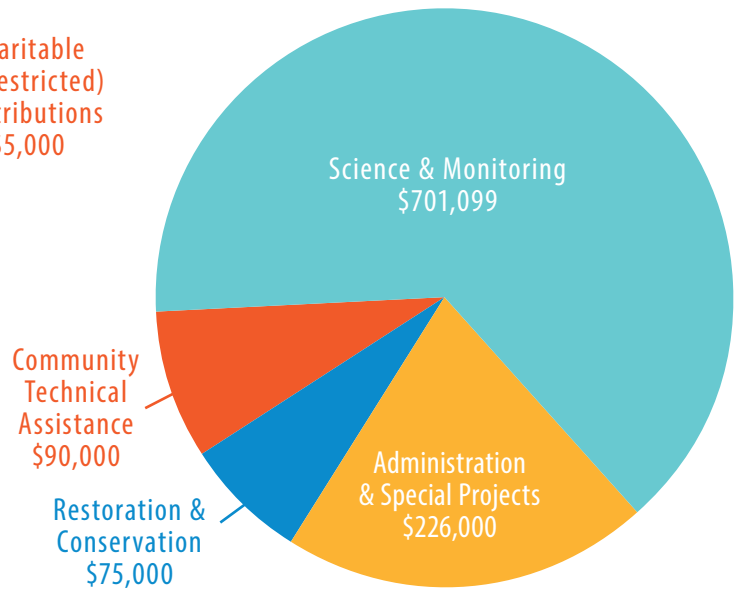
# 2020 BUDGET

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.

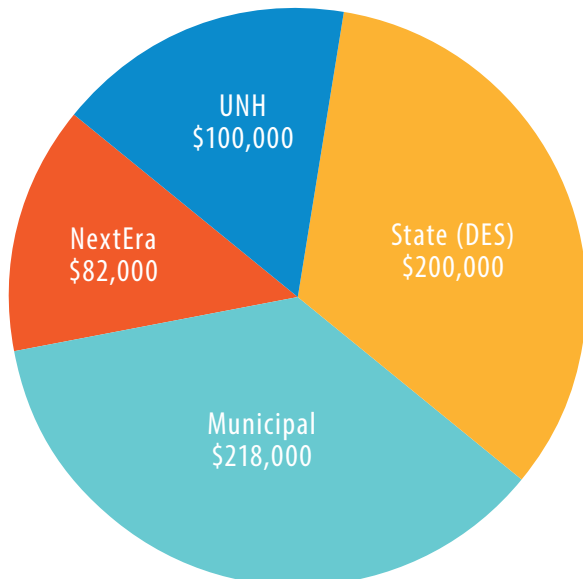
**TOTAL PROGRAM REVENUE (\$1.092M)**



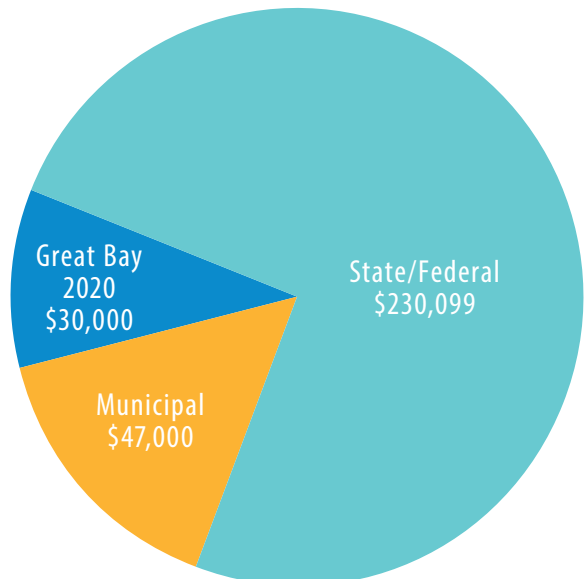
**EXPENDITURE CATEGORIES (\$1.092M)**



**REQUIRED MATCHING FUNDS BREAKDOWN (\$600,000)**



**PISCATAQUA REGION MONITORING COLLABORATIVE (\$307,099)**







## MANAGEMENT COMMITTEE MEMBERS

Jon Balanoff, Acton Wakefield Watersheds Alliance  
 \*\*Erik Beck, US Environmental Protection Agency  
 Forrest Bell, FB Environmental  
 Dea Brickner-Wood, Great Bay Resource Protection Partnership  
 \*Erik Chapman, NH Sea Grant/UNH  
 Jim Chase, Seacoast Science Center  
 \*Steve Couture, NHDES Coastal Program  
 Annie Cox, Wells National Estuarine Research Reserve (CHAIR)  
 Jay Diener, Seabrook Hamptons Estuary Alliance  
 \*Ted Diers, NH Department of Environmental Services  
 Rayann Dionne, Town of Hampton  
 Rick Ellsmore, USDA Natural Resource Conservation Service  
 \*Doug Grout, NH Fish and Game  
 Addie Halligan, Maine Department of Environmental Protection  
 John Jones, NextEra Energy  
 Don Keirstead, USDA Natural Resource Conservation Service

Jessa Kellogg, Town of Kittery  
 Peter Kinner, Great Bay Stewards  
 Alix Laferriere, The Nature Conservancy  
 \*Regina Lyons, US Environmental Protection Agency  
 Melissa Paly, Great Bay-Piscataqua Waterkeeper  
 \*Cheri Patterson, NH Fish and Game Department  
 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  
 Todd Selig, Town of Durham  
 Roger Stephenson, Union of Concerned Scientists  
 John Storer, City of Dover  
 \*Indicates a standing seat on the Management Committee  
 \*\*Indicates PREP program officer



## 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.

For more about TAC and workgroup meetings visit PREP's new website [www.PREPestuaries.org/who-we-are/prep-technical-advisory-committee/](http://www.PREPestuaries.org/who-we-are/prep-technical-advisory-committee/).

## 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



@PREPcommunity



Piscataqua Region Estuaries Partnership



@prepestuaries



**9,000+**  
**downloads** of  
PREP Reports &  
Publications from  
the UNH Scholars'  
Repository!

In the Piscataqua  
Region watershed  
**790 acres** of  
priority lands were  
conserved with  
PREP support.

Eelgrass  
distribution  
**increased 8.5%**  
between 2017 and  
2019.

The 2020  
Piscataqua Region  
Environmental Planning  
Assessment collected data  
related to water quality  
and natural resource  
protection for all **52**  
**communities!**

**Countless**  
**hours** spent in  
virtual meetings to  
continue our vital work  
to protect and improve  
the health of our  
estuaries!

"Major" oyster  
reefs in the Great  
Bay Estuary increased  
to **78.8 acres**, up  
from 72.8 acres  
in 2012!