Table of Contents

[WS-1: Every three years, produce an Indicators Report and State of Our Estuaries Report and convene a State of Our Estuaries Conference 2](#_Toc27727117)

[WS-2: Conduct economic impact studies assessing the value of functions and services provided by estuary and coastal watershed resources 4](#_Toc27727118)

[WS-3: Develop and implement outreach and education programs on natural resource planning issues to municipal boards 6](#_Toc27727119)

[WS-4: Continue to develop and promote publicly accessible GIS-based web tools to aid decision-makers and developers in identifying the potential impacts of development proposals on various natural resources 9](#_Toc27727120)

[WS-5: Support coordinated communication to coastal watershed stakeholders about activities that implement the Piscataqua Region Comprehensive Conservation and Management Plan 12](#_Toc27727121)

[WS-6: Update curricula in existing environmental education programs to include current coastal watershed and estuary issues 14](#_Toc27727122)

[WS-7: Develop support for nutrient load reductions in the Piscataqua Region Watershed 17](#_Toc27727123)

[WS-8: Improve application and enforcement of state and local land use regulations that protect natural resources 19](#_Toc27727124)

[WS-9: Support efforts to increase capacity of partners and state agencies that implement the Piscataqua Region Comprehensive Conservation and Management Plan 21](#_Toc27727125)

[WS-10: Support and implement marine debris outreach and education campaigns and facilitate coordination of cleanup efforts across the Piscataqua Region Watershed 23](#_Toc27727126)

[WS-11: Expand opportunities for citizen science efforts 26](#_Toc27727127)

WS-1

Every three years, produce an Indicators Report and State of Our Estuaries Report and convene a State of Our Estuaries Conference

Highest

Every five years, a State of Our Estuaries Report is prepared which summarizes key indicators and reports progress on meeting PREP goals. Prior to developing each State of Our Estuaries Report, PREP publishes a technical data report (“indicators report”) that illustrates the status and trends, data analysis methods, and data sources for each of the indicators tracked by PREP. Other technical reports are prepared as needed to report on special projects or programs.

PREP also organizes and convenes the State of Our Estuaries Conference. Research results and indicator reports are presented that detail the results of the State of Our Estuaries Reports. Reports on special projects and timely topics are also presented at this time.

ACTIVITIES:

* Convene PREP TAC to evaluate methodology, measurement, and data trends of indicators.
* Produce an Indicators Report on all core indicators tracked by PREP’s Monitoring Plan every five years.
* Produce State of Our Estuaries reports every five years.
* Host State of Our Estuaries Conference every five years.
* Promote use of State of Our Estuaries report by reporters and partnering organizations.
* Monitor use of State of Our Estuaries report by municipal staff and boards.

MEASURING PROGRESS:

Outputs:

* Indicator and State of Our Estuaries reports
* State of Our Estuaries Conferences
* Outreach campaign to reporters and partners on using information contained in the State of Our Estuaries reports

Outcomes:

Greater understanding of the condition/trends of natural resources in the Piscataqua Watershed and PREP programs

Improved ability to evaluate effectiveness of CCMP strategies in meeting environmental goals/targets

Implementation Metrics:

None

Issues Addressed:

* All Issues

Leads:

* PREP

Cooperators:

* PREP Management Committee
* PREP Technical Advisory Committee

Funding:

* Businesses
* NHCF
* PREP

WS-2

Conduct economic impact studies assessing the value of functions and services provided by estuary and coastal watershed resources

Highest

In July 2008, PREP completed a report entitled “Indicators of the Economic Value and Impact of New Hampshire’s Estuaries” that was the first step in determining economic impact of estuarine resources. This effort was undertaken in part due to the benefits derived from a similar study on the economic value of New Hampshire lakes and rivers.1 A recommendation from a 2008 PREP economic indicators report called for the completion of an economic valuation study for estuarine resources in the Region.2

In recognition of periodic partner interest in assessing specific economic and ecosystem values of our estuarine resources, additional studies and assessments may be needed as specific questions and needs for economic analysis arise.

ACTIVITIES:

* Create an Economic Impact Study Plan that defines research questions, scope, similar studies, partners, funding sources, and consultant criteria.
* Implement Economic Impact Study Plan using a consultant to develop methodology, collect and analyze data, and prepare a report of findings and recommendations.
* Promote the utilization of the economic valuation data by coastal decision makers, resource managers, reporters, and other audiences not typically involved with natural resource management.

MEASURING PROGRESS:

Outputs:

* Economic Impact Study Plan
* Economic Impact Study Report
* Outreach campaign to coastal decision makers, reporters, and other audiences not typically involved with natural resource management on using findings and recommendations of the Economic Impact Study Report

Outcomes:

Better understanding of natural resource value and green infrastructure services

Basis for justifying estuarine protection/restoration in economic terms

Implementation Metrics:

None

Issues Addressed:

* Economic Value
* Green Infrastructure

Leads:

* UNH
* USM

Cooperators:

* PREP

Funding:

* NHCF
* PREP
* USEPA – Office of Research & Development
* USFWS

Critical Guidance:

1Shapiro & Kroll. 2003. Estimates of Select Economic Values of New Hampshire Lakes, Rivers, Streams, and Ponds: Phase II Report.

2Trowbridge & Hunter. 2008. Indicators of Economic Value and Impact of New Hampshire’s Estuaries.

WS-3

Develop and implement outreach and education programs on natural resource planning issues to municipal boards

Highest

Municipal board members are often volunteers and benefit from training in natural resource planning to implement the PREP CCMP. A variety of training and technical assistance programs exist that are provided by partners throughout the Region Watershed.

ACTIVITIES:

* Support municipal board education programs that are consistent with PREPA recommendations.1
* Promote intermunicipal and interstate sharing of information on land use practices that protect natural resources.
* Promote use of municipal board education programs identified above to municipal staff and boards in the Region.

MEASURING PROGRESS:

Outputs:

* Technical assistance and/or funding for municipal board education programs that are consistent with PREPA recommendations
* Outreach campaign to municipal staff and boards on municipal board education programs that are consistent with PREPA recommendations

Outcomes:

Well informed municipal staff and board members making land use decisions that protect natural resources in the Region

Implementation Metrics:

Conservation subdivisions

Conservation overlay districts with CFAs

Prime Wetlands (NH) or Significant Wetlands (ME)

100’ wide shoreland buffer protections on first order streams and ≥100’ on all others

Fluvial erosion hazard (FEH) zone overlays and development restrictions

≤10% effective impervious cover cap for new development

LID techniques for new development and redevelopment

Stormwater management regulations consistent with SWA model standards

≥ Four site inspections of development sites for stormwater/E&S compliance

Natural Resource Inventories (NRIs)

Natural Resource Chapter in Master Plan (NH only)

Conservation plans with CFAs

Drinking water source protection plans

Online NRIs and environmental zoning district overlays

Issues Addressed:

* All Issues

Leads:

* BwH
* GBNERR
* NROC
* PREP
* UNH-CE
* WNERR

Cooperators:

* Land Protection Organizations
* ME Coastal Program
* MIFW
* Municipalities
* NH Coastal Program
* NHDES – Watershed Management Bureau
* RPC
* SMRPC
* SNHPC
* SRPC
* UNH-SC

Funding:

* MDEP
* MSPO
* NH Coastal Program
* NHCF
* NHDES
* NHFGD
* NHOSI
* NOAA
* USEPA

Critical Guidance:

1Piscataqua Region Estuaries Partnership. 2014. Piscataqua Region Environmental Planning Assessment 2015 (PREPA).

WS-4

Continue to develop and promote publicly accessible GIS-based web tools to aid decision-makers and developers in identifying the potential impacts of development proposals on various natural resources

High

A number of data sources and layers currently exist through the GRANIT online GIS tool, the New Hampshire Coastal Viewer, to assist communities and managers in identifying a wide range of natural resources and landscape characteristics, from hydric soils and slope to impervious cover and conserved lands. As additional data needs for planning are identified, more data layers and analysis tools should be developed or pulled into GRANIT to continue to build the New Hampshire Coastal Viewer. In the future, it would be an increasingly valuable tool through which specific screening reports for individual parcels and points can be generated, covering a range of data i.e., FEMA-related mapping information, sea-level rise, and groundwater rise projections. Reports and maps developed using the tool should be easily exportable for use with a range of audiences. In addition, NHDES is developing specific mapping tools that pull from GRANIT to assist in specific planning and development decisions.

ACTIVITIES:

* Develop additional functionality to assist users in finding the information they seek and facilitate report development and export.
* Promote the use of the mapper tools to resource managers, developers, and policy-makers to assist in decision-making and to citizens for personal risk-assessment use for their properties.
* Identify most relevant data sources and layers that could be brought into GRANIT from federal and state agencies, regional planning agencies, and municipalities.
* Support the development of a comparable tool in Maine.

MEASURING PROGRESS:

Outputs:

* Stakeholder analysis and needs assessment in data development and tool development
* Tools and processes developed to improve access and functionality of the NH Hampshire Coastal Viewer
* Outreach to target user groups to inform and teach them how to use the tools

Outcomes:

Better informed planners, policy-makers, citizens, and local decision-makers

Improved protection of natural resources

Improved siting for new development

Improved understanding for citizens of flooding risks, groundwater risks, and vulnerabilities to climate change impacts

Implementation Metrics:

None

Issues Addressed:

* Land Use
* Wetlands
* Water Resources

Leads:

* BwH
* GRANIT
* MEGIS
* UNH

Cooperators:

* GBNERR
* Municipalities
* NH Planning Association
* NHACC
* NH Coastal Program
* NHOSI
* PREP
* RPC
* UNH-CE

Funding:

* Hazard Mitigation Grants (DHS & Emergency Management)
* Mooseplate
* NERRS-SC
* NHCF
* NH Coastal Program
* USEPA

WS-5

Support coordinated communication to coastal watershed stakeholders about activities that implement the Piscataqua Region Comprehensive Conservation and Management Plan

Highest

PREP maintains a website that provides information on current programs and projects, publications, and links to other natural resource sites and program. PREP provides regular newsletter updates on PREP and partner programs and activities. In addition, PREP participates in and coordinates communication about regional issues and monitoring needs with key audiences and media outlets.

Many organizations regularly communicate to the public about coastal watershed issues and an opportunity exists to coordinate this effort to efficiently achieve desired results of all parties involved. In addition, many businesses in the Region have recognized the importance of adopting practices that enhance the Region’s ecological integrity and their status in the community.

ACTIVITIES:

* Develop and implement a PREP Strategic Communication Plan that identifies audiences and approaches to implementing the CCMP, defines natural resource management communication networks in the Region, and establishes evaluation criteria for outreach activity. Emphasize measurement of behavior change.
* Implement PREP Strategic Communication Plan.
* Develop a recognition program that acknowledges outstanding actions that implement the CCMP, such as a municipality that adopts exemplary nutrient reduction regulations.
* Develop and support a collaborative monitoring program among stakeholders.

MEASURING PROGRESS:

Outputs:

* PREP Strategic Communication Plan
* Updated PREP outreach materials
* PREP recognition program
* Collaborative monitoring program

Outcomes:

Expanded awareness of PREP activities and programs

Improved implementation of natural resource protection programs

Implementation Metrics:

None

Issues Addressed:

* All Issues

Leads:

* PREP

Cooperators:

* Businesses
* Municipalities
* Nonprofit Organizations
* Watershed Organizations

Funding:

* Businesses
* NHCF
* PREP

WS-6

Update curricula in existing environmental education programs to include current coastal watershed and estuary issues

Moderate

Every year, thousands of children and adults are exposed to environmental education programs conducted by many organizations in the Region. These organizations have invested a great deal of money and effort to develop programs and the means through which they are delivered. Improving the existing curricula by providing teaching materials and training will efficiently achieve PREP watershed stewardship goals.

Examples of robust marine and environmental education programs are the UNH Marine Docents (NH Sea Grant) program that provides volunteer educators at the Seacoast Science Center, the Great Bay Discovery Center at the Great Bay NERR, and the variety of Wells NERR programs targeted at estuarine education in grades K-12. Many other organizations in the Region provide or support environmental education.

ACTIVITIES:

* Provide teaching materials and training to environmental education programs in the Region to integrate CCMP highest priority issues into existing environmental education programs.
* Collect data on the number of people exposed to environmental education programs that address CCMP highest priority issues.

MEASURING PROGRESS:

Outputs:

* Teaching materials on PREP CCMP highest priority issues
* Teaching trainings on PREP CCMP highest priority issues
* Report on number of people exposed to programs dealing with CCMP highest priority issues

Outcomes:

Citizenry informed about estuary CCMP highest priority issues

Improved political support for resource management actions

Implementation Metrics:

None

Issues Addressed:

* All Issues

Leads:

* GBNERR
* NH Sea Grant
* WNERR

Cooperators:

* Blue Ocean Society for Marine Conservation
* DNCR
* Gundalow Co.
* Land Protection Organizations
* MDEP
* MDMR
* ME Coastal Program
* NHDES
* NRCS
* PREP
* RCCD
* SCCD
* Schools
* SSC
* UNH-CE
* UNH-JEL
* UNH-NHSG
* USFWS
* Watershed Organizations
* YCSWCD

Funding:

* DNCR
* NH Coastal Program
* NHCF
* NHDES
* NHFGD
* USEPA
* USFWS
* USM

WS-7

Develop support for nutrient load reductions in the Piscataqua Region Watershed

Highest

Nutrient reduction is and will continue to be a major objective for many resource management organizations and will require significant effort and financial investment by communities in the Region for decades. Building long-term support for nutrient reduction throughout the Region will facilitate voter approval of necessary regulatory actions and implementation of nutrient reduction BMPs on private and public lands.

NHDES and MDEP are addressing the nutrient loading problem as a regional issue. Outreach and education on this topic will be approached regionally as municipal cooperation is essential to the success of nutrient reduction efforts. The Seacoast Stormwater Coalition (SSC) and the Southeast Watershed Alliance (SWA) provide a potential forum and mechanism for regional coordination and assistance.

ACTIVITIES:

* Encourage citizens to support regulatory and non-regulatory approaches to nutrient load reductions.
* Encourage businesses to support regulatory and non-regulatory approaches to nutrient load reductions.
* Provide assistance to environmental educators to incorporate lessons on the impacts of nutrient loading to estuaries.
* Advocate for state regulations and public policy to reduce nutrient loading to Region estuaries.

MEASURING PROGRESS:

Outputs:

* Outreach campaign to citizens on supporting regulatory and non-regulatory approaches to nutrient load reductions
* Outreach campaign to businesses on supporting regulatory and non-regulatory approaches to nutrient load reductions
* Supplemental curricula and/or teaching materials for environmental educators
* Advocacy campaign to policy makers to enact regulations and develop public policy to reduce nutrient loading to Region estuaries

Outcomes:

Improved municipal, business, and public understanding of nutrient loading issues

Increased interest and capacity to implement regulatory and non-regulatory activities that reverse negative nutrient loading impacts

Implementation Metrics:

None

Issues Addressed:

* Nutrients
* Stormwater
* Water Quality

Leads:

* MDEP
* NHDES

Cooperators:

* GBNERR
* NH Coastal Program
* NROC
* PREP
* SSC
* SWA
* WNERR

Funding:

* NHCF
* NHDES – State Revolving Fund
* NOAA
* USEPA

WS-8

Improve application and enforcement of state and local land use regulations that protect natural resources

Highest

In order for land use regulations to be effective they must be consistently applied and enforced. Assisting communities with prioritization of regulations for enforcement and determining appropriate actions will help focus limited resources.

When environmental protections are frequently waived through variances granted by Zoning Boards of Adjustment (ZBAs), the original intent of a community’s regulations are lost, and the cumulative effect degrade of habitats and water resources. Providing training and environmental information to ZBAs, planning boards, and conservation commissions will help municipal officials understand the necessity of environmental protections and hopefully reduce unnecessary variances.

ACTIVITIES:

* Identify state and local land use regulations in need of improved enforcement, determine causes of problems (e.g., capacity, interpretation of regulations, inconsistency of application, etc.), and prioritize areas for improvement. Include research on ZBA rulings and estimate potential impacts of variances, special exemptions, waivers granted to adjacent communities, or subwatersheds.
* Promote enforcement of regulations that protect water resources to ZBAs, Conservation Commissions, Planning Boards, and code enforcement staff.
* Design and implement New Hampshire land use code certification program that is comparable to Maine certification program.1

MEASURING PROGRESS:

Outputs:

* Report on land use ordinance enforcement shortfalls, including a prioritized list of municipalities in need of assistance, and a list of land use ordinances that need increased enforcement effort
* Outreach campaign to municipal staff and boards on enforcement of regulations that protect water resources
* New Hampshire land use code certification program

Outcomes:

Better enforcement of critical regulations in priority areas

Implementation Metrics:

None

Issues Addressed:

* Enforcement

Leads:

* RPC
* SMRPC
* SNHPC
* SRPC

Cooperators:

* Code Enforcement Officers
* GBNERR
* MDEP
* MDIFW
* ME Coastal Program
* MSPO
* NHACC
* NHLGC
* NROC
* PREP
* UNH-CE
* WNERR

Funding:

* MDEP
* NHDES
* USEPA

Critical Guidance:

1Maine State Planning Office. 2009. Municipal Code Enforcement Training & Certification.

WS-9

Support efforts to increase capacity of partners and state agencies that implement the Piscataqua Region Comprehensive Conservation and Management Plan (CCMP)

High

Successful implementation of the CCMP requires the support and cooperation of a range of partner organizations and enforcement of environmental regulations by state environmental and natural resource agencies. Staff and budget cuts at state agencies greatly reduces the ability of these agencies to fulfill their role in the CCMP implementation. To better understand and improve the capacity and stability of partners and their relationship to CCMP implementation, an assessment of partner roles, needs, capacity and funding support should be undertaken. Funding support may be secured by partners from state resources, foundations, or other federal agencies.

ACTIVITIES:

* Produce a PREP Partner Capacity Report that identifies and prioritizes state agency programs that lack capacity to implement key programmatic activities that support the PREP CCMP.
* Encourage state legislators to increase state funding to increase capacity of programs identified in the PREP Partner Capacity Report.
* Encourage state agencies to dedicate or pursue additional resources to increase capacity of programs identified in the PREP Partner Capacity Report.
* Provide technical assistance to state agencies to apply for grants and support from foundations or federal sources to increase capacity of programs identified in the PREP Partner Capacity Report.
* Encourage agency support for updated CCMP, demonstrated by 'signing on' to updated plan when adopted and published.
* Evaluate Great Bay 2020 Partnership for opportunities to strengthen CCMP implementation and bring additional funding to regional priorities.

MEASURING PROGRESS:

Outputs:

* PREP Partner Capacity Report
* Advocacy campaign to policy makers to increase funding for state agency programs that implement CCMP
* Advocacy campaign to state agency heads to increase funding for agency programs that implement CCMP
* Agencies signing on to support CCMP implementation.

Outcomes:

Improved implementation of CCMP

Implementation Metrics:

None

Issues Addressed:

* All Issues

Leads:

* PREP

Cooperators:

* GB2020 Steering Committee
* MDEP
* MDIFW
* MDMR
* NHDES
* NHDOT
* NHFGD

Funding:

* NHCF
* NOAA
* USEPA

WS-10

Support and implement marine debris outreach and education campaigns and facilitate coordination of cleanup efforts across the Piscataqua Region Watershed

Highest

Marine debris (including aquatic trash) is litter found in the ocean, along our coast, and shores of our rivers, streams, estuaries, lakes, and ponds. Marine debris negatively impacts water quality, wildlife, tourism, and the commercial and recreational fishing industries in our Region. The Trash Free Waters–Piscataqua Initiative launched in 2018 to facilitate coordination and collaboration among partners working to address marine debris concerns across the Piscataqua Region Watershed toward the goal of reducing the use of plastics and other materials.

ACTIVITIES:

* Track marine debris data for trends and potential hotspots.
* Use marine debris data to identify items and areas of concern to develop prevention and reduction campaigns.
* Develop a comprehensive database for comparable marine debris data collected across the Watershed.
* Support collaboration and coordination among partners working on outreach and education, cleanups, and prevention/reduction efforts.
* Support and expand efforts in New Hampshire and Maine for participation in the annual Ocean Conservancy’s International Coastal Cleanup.
* Coordinate collection of marine debris with existing research and monitoring efforts.
* Continue to support the Trash Free Waters–Piscataqua initiative.

MEASURING PROGRESS:

Outputs:

* Inventory marine debris organizations and their cleanup efforts across the Watershed
* Cleanups throughout the Piscataqua Region Watershed
* Comprehensive database for all comparable marine debris data collected within the Region
* Hotspot maps of marine debris across the Region (can be scaled down to subwatersheds, communities, specific waterbodies, etc.) to tailor outreach and education campaigns
* Outreach campaign(s) related to items of concern identified through the Trash Free Waters–Piscataqua initiative

Outcomes:

Less marine debris across the Piscataqua Region Watershed

Improved regional understanding of marine debris

Improved regional coordination between partners working on reducing or removing marine debris

Implementation Metrics:

None

Issues Addressed:

* Marine Debris/Aquatic Trash
* Water Quality

Leads:

* Blue Ocean Society for Marine Conservation
* Great Bay Piscataqua Waterkeeper
* ME Coastal Program
* ME Sea Grant
* NH Sea Grant
* NOAA – Marine Debris Program
* Surfrider
* USEPA – Trash Free Waters

Cooperators:

* Acton Wakefield Watersheds Alliance
* Coastal Research Volunteers
* GBNERR
* MDEP
* Nature Groupie
* NH Coastal Program
* Regional Planning Commissions
* Trash Free Waters – Piscataqua
* WNERR

Funding:

* ME Coastal Program Coastal Zone Management Funds
* NH Coastal Program Coastal Zone Management Funds
* NOAA – Marine Debris Grant Program

WS-11

Expand opportunities for citizen science efforts

Moderate

Empowering community members directly with hands-on science opportunities creates personal investment in local ecosystems, helps fill monitoring and research gaps, and can inspire public support for protecting estuarine health. PREP is committed to building citizen science capacity for research and long-term monitoring in our region.

ACTIVITIES:

* Incorporate citizen science into research and monitoring programs in the Piscataqua Region Watershed.
* Provide training to researchers, organizations, and other citizen science practitioners to incorporate BMPs for citizen science.1,2
* Support communication and collaboration among organizations participating in and leading citizen science efforts across the region.
* Support and empower citizen science volunteers to share data and results with decision-makers and community leaders for local, regional, and state decision-making.

MEASURING PROGRESS:

Outputs:

* Resources and events on citizen science for research and community audiences
* New data sets
* New trainings for citizen science volunteers and researchers
* Citizen science incorporated into the development and revision of quality assurance project plans1
* Increased visibility of citizen science in the State of Our Estuaries report and conference

Outcomes:

Expanded research and monitoring of our ecosystem through engagement of citizen science volunteers

Community and watershed questions are addressed through citizen science opportunities

Increased awareness of ecological issues and a culture of stewardship among participants

Increased research community engagement in citizen science

Improved dissemination of citizen science project outcomes/results to volunteers and decision-makers

Implementation Metrics:

None

Issues Addressed:

* All Issues

Leads:

* Coastal Research Volunteers
* Nature Groupie
* PREP

Cooperators:

* Acton Wakefield Watersheds Alliance
* Blue Ocean Society for Marine Conservation
* GBNERR
* Great Bay Piscataqua Waterkeeper
* MDEP
* NH Sea Grant
* NHDES
* NHFGD
* UNH-CE
* WNERR

Funding:

* Foundation
* NH Sea Grant
* NOAA
* PREP
* USEPA

Critical Guidance:

1US Environmental Protection Agency. 1996. The Volunteer Monitor’s Guide to Quality Assurance Project Plans

2US Environmental Protection Agency. 2019. Handbook for Citizen Science Quality Assurance and Documentation.